Fire and Police Pension Association Statewide Retirement Plan

Actuarial Valuation Report for the Year Beginning January 1, 2024

GRS

P: 720.274.7270 | www.grsconsulting.com

June 30, 2024

Board of Directors
Fire and Police Pension Association
7979 East Tufts Avenue, Suite 900
Denver, Colorado 80237

Re: Actuarial Valuation of the FPPA Statewide Retirement Plan (Plan) as of January 1, 2024

Dear Members of the Board:

We are pleased to present our Report on the actuarial valuation of the Statewide Retirement Plan for the Fire and Police Pension Association (FPPA) as of January 1, 2024.

We certify that the information included herein and contained in our 2024 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the FPPA Statewide Retirement Plan as of January 1, 2024.

Our Report presents the results of the January 1, 2024 actuarial valuation of the FPPA Statewide Retirement Plan (SRP). The Report describes the current actuarial condition of the SRP, determines sufficiency of contribution rates, determines COLA levels based on Board policy and analyzes changes in these metrics. The results presented herein may not be applicable for other purposes. In addition, the Report provides various summaries of the data.

Valuations are prepared annually, as of January 1st, the first day of the FPPA plan year.

Contribution Sufficiency

Contribution rates are established by law as a percentage of payroll and vary by Component. Currently those rates are scheduled to increase each year until 2030, ultimately reaching a total of 25%, 12.5% and 18% on Defined Benefit Component, Social Security Component and Hybrid Defined Benefit Component payroll, respectively. The total blended statutory contribution rate reflecting member and employer contributions across all Components for 2024 is 21.80%. Appendix B further outlines the contribution rates for the components of the SRP plan.

This valuation finds that:

1. Contribution rates are expected to be sufficient to fund the base benefits (no COLAs). It is anticipated that base benefits can be funded with 17.58% of pay.

2. Contributions in excess of 17.58% of pay are used to increase reserves available to pay COLAs and to manage adverse experience. If the Board continues its current COLA policy and assumptions are met, the statutory contributions are expected to be able to provide for increased COLAs over time.

7900 East Union Avenue | Suite 650 | Denver, Colorado 80237-2746

3. The goal of increasing contributions and the reserving strategy is to eventually provide COLAs that would provide inflation protection to FPPA members, currently assumed to be approximately 2.50% per year. The current COLA reserve and contribution levels are not sufficient to provide 2.50% COLAs at this time as the Actuarially Determined Contribution needed to support this level of benefits is 30.42% of payroll. Immediately providing COLAs at this level would make the plan unsustainable, even with the scheduled contribution increases.

Reserve for COLAs and to Manage Adverse Experience

As of January 1, 2024, the Plan has $67 million in reserve for COLAs and to manage adverse experience. This amount is an increase from $66 million as of January 1, 2023. This increase was less than expected. The plan experienced losses due to the COLAs and one-time supplemental payment granted in 2023, investment losses, and liability losses primarily due to greater than assumed salary increases.

Although the reserve did increase, it decreased as a percentage of total liabilities, meaning it is less able to provide an annual COLA for all participants. Converting the $67 million reserve into an annual COLA for all participants results in a 0.14% annual COLA, which would be the recommended "Breakeven" 2024 COLA provided per the Board policy.

Benefit provisions

All of the benefit provisions reflected in this valuation are those which were in effect on January 1, 2024. There were no changes to the benefit provisions since the prior valuations. The benefit provisions are summarized in Appendix B of our Report.

Assumptions and methods

The current actuarial methods and assumptions were selected by the Board of Directors of FPPA based upon the actuary's analysis and recommendations from the 2022 Experience Study, for first use in the January 1, 2023 valuation. For information regarding the rationale for the assumptions chosen, please see the experience study report dated June 20, 2022.

The assumptions and methods are detailed in Appendix A of our Report. The Board of Directors has sole authority to determine the actuarial assumptions used for the Plan. The assumptions that are based upon the actuary's recommendations are internally consistent and are reasonable based on the actual past experience of the Plan. Furthermore, the combined effect of the assumptions used in this valuation is expected to have no significant bias.

The actuarial assumptions represent estimates of future experience and are not market measures. The results of any actuarial valuation are dependent upon the actuarial assumptions used. Actual results (and future measures) can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in this report are intended to provide information for rational decision making.

This report was prepared using our proprietary valuation model and related software which in our professional judgement has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Data

FPPA supplied data for retired, active and inactive members as of January 1, 2024. We did not audit this data, but we did apply a number of tests to the data, and we have concluded that the data is reasonable and consistent with the prior year's data. FPPA also supplied asset data as of January 1, 2024.

GASB Accounting

Plan reporting information for GASB Statement No. 67 can be found in the FPPA Annual Comprehensive Financial Report at FPPA's website - FPPAco.org. Employer reporting information for GASB Statement No. 68 is provided in a separate report to the employer.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Colorado state law and, where applicable, the Internal Revenue Code.

The undersigned are independent actuaries and consultants. Joseph Newton and Dana Woolfrey are Enrolled Actuaries. All of the undersigned are Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. All are experienced in performing valuations for large public retirement systems.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader and Actuary

Dana Woolfrey, FSA, EA, MAAA
Senior Consultant and Actuary

Cassie Rapoport, ASA, MAAA
Senior Analyst and Actuary

Karli Fehrman, ASA, MAAA
Senior Analyst and Actuary

Table of Contents

SECTION I

EXECUTIVE SUMMARY

Executive Summary

Item	January 1, 2024	January 1, 2023
Membership		
• Number of:		
- Active members	10,380	9,986
- Retirees	2,148	1,959
- DROP Retirees	412	372
- Beneficiaries	180	158
- Inactive members	2,277	2,039
- Total	15,397	14,514
• Annualized payroll supplied by FPPA	$ 994,387	$ 911,151
Assets		
• Market value	$ 4,212,130	$ 3,770,863
• Actuarial value	$ 4,259,549	$ 3,924,584
• Rate of return on market value	9.7%	(8.0%)
• Rate of return on actuarial value	6.6%	6.0%
• Ratio of actuarial value to market value	101.1%	104.1%
Actuarial Information		
Base Benefits		
• Funded Ratio	100.0%	100.0%
• Reserve available to provide future COLAs	$ 67,052	$ 66,419
• Reserve as a % of base liabilities	1.6%	1.7%
• Reserve converted to long-term COLA ("Breakeven")	0.14%	0.15%
With long-term COLA assumption of 2.50%		
• Funded Ratio	78.7%	78.8%
• Unfunded actuarial accrued liability	$ 1,154,456	$ 1,057,821

Note: Dollar amounts in $000s

Executive Summary (Continued)

1. As of January 1, 2024, the Plan has $67 million in reserve for COLAs and to manage adverse experience. This is a slight increase from $66 million as of January 1, 2023, but less increase than was expected based on contributions during 2023.

    a. Based on contributions during 2023, the reserve was expected to increase to $108 million.
    b. The 2023 COLA used $2 million of the reserve and the one-time supplemental payment granted in 2023 used $10 million of the reserve.
    c. The assets earned 9.66% on a market value basis in 2023. However, based on the smoothing mechanisms used in the valuation process, an additional 20% of the 2022 loss was recognized, and the net decreased the reserve by $16 million.
    d. Salary increases for continuing active members were higher than current assumptions, resulting in a liability loss which depleted the reserve by $25 million.
    e. Other liability gains from turnover and other smaller factors increased the reserve by $12 million.

2. Converting the $67 million reserve into an annual COLA for all participants results in a 0.14% annual COLA, which would be the 2024 recommended Breakeven COLA provided per the Board policy. The Board's policy considers the size of the reserve in comparison to the accrued benefits of all current members and estimates the COLA that could be provided in perpetuity across all generations of current members.

3. Given the plan's statutory contribution policy and the Board Benefits Policy in regard to granting COLAs, if all actuarial assumptions are met (including the assumption of the plan earning 7.00% on the actuarial valuation of assets), it is expected that:

    a. The employer normal cost as a percentage of pay will remain level over time,
    b. The COLA Reserve will continue to increase slowly,
    c. The amount of COLA that can be provided will increase slowly, and
    d. The funded status of the plan will increase gradually.

4. As a long-term target, we have provided full actuarial valuation results based on an annual COLA equal to the current inflation assumption of 2.50%. On that basis, the SRP would have an Unfunded Actuarial Accrued Liability of $1.15 billion and a funded ratio of 79%. Thus, the Actuarially Determined Contribution necessary to sustain an annual 2.50% COLA from today forward is 30.42% of payroll. This compares to the current contribution levels of 21.80% of payroll, which shows the SRP cannot afford COLAs of this level at this time.

5. However, the ultimate contribution rates from House Bill 22-1034 are anticipated to accumulate assets in a way to provide COLAs of approximately that level when members hired today reach retirement age. However, this must be a long, gradual process to reach those levels for the plan to be sustainable.

6. We recommend continuing the practices that have produced these results to date, including the disciplined, long-term focused approach to decision making.

Projected Actuarial Results

The table below shows the Reserve and Associated COLA projected over the next five years given alternative investment returns on the market value of assets.

With the exception of the market value investment returns, the projections are based on the same assumptions, methods and provisions used for the January 1, 2024 valuation. The projections assume the Board will grant COLAs and supplemental payments according to their current benefits policy. The 3.00% and 7.00% scenarios show deterioration in the reserve due to future recognition of outstanding deferred market value investment losses as of January 1, 2024. The reserve as of January 1, 2024 on a smoothed asset basis is $67 million, however, the reserve is only $20 million on a market value basis as compared to liabilities for base benefits. For additional information see the "Discretionary Cost-of-Living Adjustments" portion of the Discussion Section.

5-Year Deterministic Projection						
	Market Value Investment Return					
	3.00%		7.00%		11.00%	
January 1,	Reserve	Breakeven COLA Supported by Reserve	Reserve	Breakeven COLA Supported by Reserve	Reserve	Breakeven COLA Supported by Reserve
2024	$67	0.14%	$67	0.14%	$67	0.14%
2025	$63	0.12%	$97	0.18%	$137	0.25%
2026	$30	0.06%	$136	0.24%	$258	0.45%
2027	-$37	0.00%	$185	0.30%	$438	0.71%
2028	-$127	0.00%	$259	0.40%	$684	1.03%
2029	-$259	0.00%	$345	0.49%	$1,012	1.43%

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future actuarial measurements other than that shown above.

SECTION II

DISCUSSION

Contribution Sufficiency

Statutory Contributions

Members of the Defined Benefit Component contribute 12.00% of base salary. Employers currently contribute 10.00% of pay in 2024, and this amount is scheduled to increase 0.50% per year until an ultimate rate of 13.00% is reached in 2030.

Members of the Social Security Component and their employers contribute half the rates of the Defined Benefit Component.

Members of the Hybrid Defined Benefit Component and their employers must both contribute at least 8.250% of base salary, and this amount is scheduled to increase 0.125% until the ultimate rate of 9.000% is reached in 2030. Each year, the Board has discretion in setting the portion of total contributions from Hybrid Component members that is allocated to the funding of the defined benefits under the SRP. Any excess contributions go into the Money Purchase Component. The recommended allocation in this report of 14.56% reflects the intention that Hybrid Component Members and Defined Benefit Members should contribute equally toward the funding of their relative benefit levels.

Members and their employers in any Component can contribute in excess of the required amounts stated above. Any excess contributions go into the Money Purchase Component.

There are also additional contribution requirements for employers that reenter the plan. For employers that reentered the plan prior to January 1, 2021, an additional 0.2% of pay contribution is required. Employers reentering the plan on or after January 1, 2021 have additional contributions determined that reflect the demographics of the specific covered group.

Actuarially Determined Contributions and Contribution Sufficiency

The Actuarially Determined Contribution assuming no future cost-of-living adjustments (COLAs) is 17.58% of pay. The Actuarially Determined Contribution under the Board's funding policy can be considered a "Reasonable Actuarially Determined Contribution" as required by the Actuarial Standards of Practice. Although the Board retains discretion to provide no benefit adjustment, this should not be viewed as a reasonable metric for contribution sufficiency so long as providing COLAs is an ongoing objective.

The Actuarially Determined Contribution assuming annual cost-of-living adjustments of 2.50% per year is 30.42% of pay. This too may not be a reasonable metric for contribution sufficiency as it does not reflect the Board Benefits Policy for setting COLAs which, although subject to Board discretion, reflects only currently available funding.

A Reasonable Actuarially Determined Contribution for the Plan is the greater of the Actuarially Determined Contribution assuming no future cost-of-living adjustments, which is 17.58%, and the Normal Cost (including administrative expenses) assuming annual cost-of-living adjustments of 2.50% per year, which is 22.53%. This amount reflects the amount needed to fund *newly accruing* benefits and a 2.50% cost-of-living adjustment on those newly accruing benefits; however, this amount does not provide funding for cost-of-living adjustments on benefits already accrued, such as current retiree benefits and accrued active member benefits. As noted, the amount needed to fund 2.50% per year cost-of-living adjustments on accrued and newly accruing benefits is 30.42% of pay.

This Actuarially Determined Contribution of 22.53% reflects that current funding levels are not sufficient to provide inflation-like COLAs for all generations; however, over time, funding levels and the COLAs associated with them are expected to improve, assuming the Board continues its current Benefits Policy and contribution rates increase as currently scheduled.

The total blended contribution rate reflecting member and employer contributions across all Components for 2024 is 21.80%. This compares to the Reasonable Actuarially Determined Contribution of 22.53%. Although not currently meeting this objective, it is anticipated that over time, with the scheduled contribution increases, the total blended rate will meet the objective.

Discretionary Cost-of-living Adjustments and One-Time Lump Sum Payments

On October 1st of each year, annuitants may receive a cost-of-living adjustment (COLA) at the discretion of the Board of Directors. The increase can range from 0.00% to the higher of 3.00% or the change in CPI-W. The current Board policy, adopted on April 20, 2023, determines the COLA which can be supported on an actuarial basis using only current surplus assets. To the extent there are deferred market gains available, these can be used in the measurement of surplus assets to support as much as a 0.50% COLA.

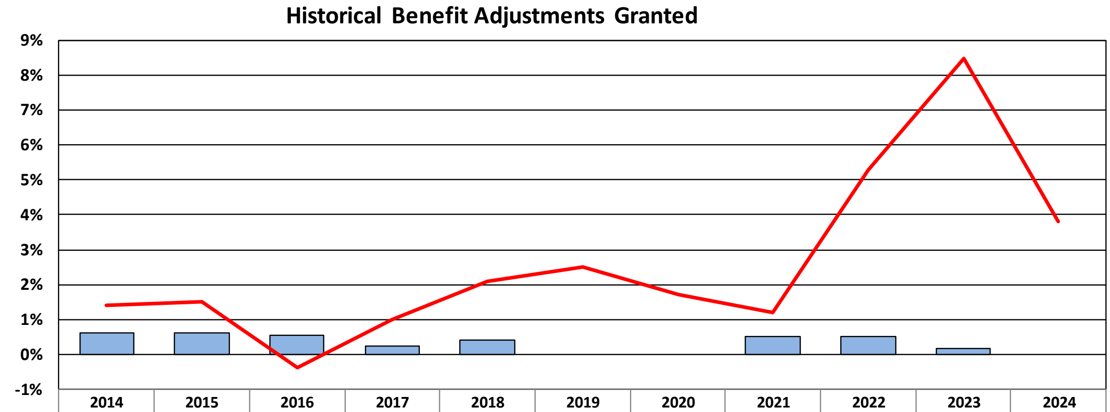
The chart below shows the benefit adjustments granted by the Board during the last 10 years and the change in CPI-W during that period. The current valuation results indicate that on a smoothed asset basis, the Plan can currently support an annual COLA of **0.14%** per year and remain 100% funded. If all assumptions are met, it is expected that the current funding policy will increase the plan's surplus over time and the COLAs supported by the Board policy will increase.

In addition to the COLA, the Board policy contains a provision for a supplemental one-time lump sum if the following conditions are met:

1. The COLA determined above is less than 1.00%; and
2. The average annual investment return over the prior 5 years is at least 6.50%.

If these conditions are met, the supplemental one-time lump sum shall be the increase in CPI-W less the COLA amount determined for the year multiplied by benefits paid during the prior 12-month period. The change in the average CPI-W for calendar year 2023 over calendar year 2022 was 3.80%. Thus, the supplemental one-time lump sum is 3.66% (3.80% - 0.14%) of annual benefits.

This policy is designed to be sustainable over the long-term while being responsive in a meaningful way to current high inflation conditions.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Granted Adjustment	0.61%	0.60%	0.56%	0.25%	0.39%	0.00%	0.00%	0.50%	0.50%	0.15%	TBD
Prior Year CPI-W	1.40%	1.50%	-0.40%	1.00%	2.10%	2.50%	1.70%	1.20%	5.30%	8.50%	3.80%

Amounts prior to 2023 reflect the history of the former Statewide Defined Benefit Plan.

Financial Data and Experience

This section provides an analysis of the change in Net Plan Assets during the year and an estimate of the yield on the assets of the SRP. FPPA provided GRS with a summary of Plan assets as of January 1, 2024. The total market value of assets (MVA) reported was $4,212 million as of January 1, 2024, as compared to $3,771 million as of January 1, 2023. Table 6 shows data from some of the tables included in the annual financial statements of the Plan. Table 8 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

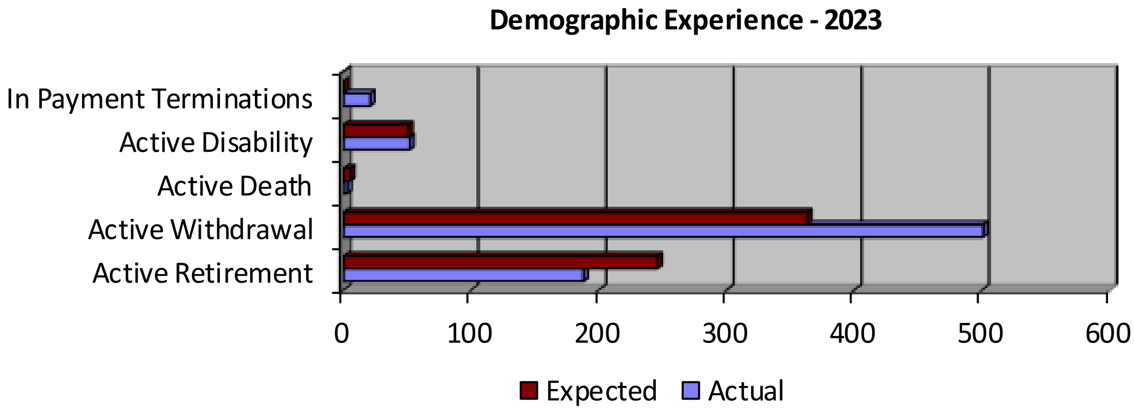
The asset valuation method uses a five-year phase in of the excess (shortfall) between expected investment return and actual income. Expected earnings used to project the actuarial value are determined using the assumed investment return rate and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year).

Table 7 shows the development of the actuarial value of assets. The actuarial value of assets increased from $3,924.58 million to $4,259.55 million since the prior valuation. This increase was less than expected and produced a loss of approximately $16 million.

As indicated by item 8b of Table 8, the estimated return on mean market value was 9.66% in 2023, which is greater than the 7.00% assumption. The return on the actuarial value of assets was 6.60%, which is lower than the 7.00% assumption. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

Demographic Experience

The following charts provide a comparison of the actual experience versus the expected experience for selected demographic assumptions. For FY 2023, the actual salary increases were 101.9% of expected. **During the year, the plan had overall liability gains due to demographic experience. This was primarily due to more terminations than expected during the year.**



The In Payment Terminations above include deaths and benefits that were canceled for other reasons.

Actuarial Methods and Assumptions

The valuation was prepared using the Entry Age Normal Method. This is the same funding method that has been used in prior years. The asset valuation method uses a five-year phase in of the excess/(shortfall) between expected investment return and actual income. See Appendix A for a complete description of this method.

The actuarial value of future benefits from the plan is based on several economic and non-economic assumptions. These are summarized in Appendix A. The economic assumptions include investment return and salary increases. Non-economic assumptions include rates of mortality, disability, and separation.

There have been no changes to the actuarial assumptions since the prior valuation.

Significant Factors Affecting Trends in Actuarial Information

With the current contribution schedule, it is expected that the funded status of the plan will gradually improve over time. This will provide protection against adverse experience and increase the potential to pay future benefit adjustments.

Risk Metrics

The Statewide Retirement Plan was largely formed by the membership of the former Statewide Defined Benefit Plan, a defined benefit plan for Colorado Fire and Police employees hired on or after April 8, 1978. Over time, as with all defined benefit plans, the Statewide Retirement Plan's active member population will stabilize and the retiree population will continue to grow, thus becoming more leveraged in relation to the active payroll. The funded status and contribution requirements will become more volatile as a result, and the Board will have to give added consideration to the impact from possible adverse experience.

The amounts shown reflect base benefits only, without consideration of future cost-of-living adjustments. Amounts from 2022 and prior reflect the results of the former Statewide Defined Benefit Plan.

Valuation Year	AVA as % of Covered Payroll	AAL as % of Covered Payroll	ADC as % of Covered Payroll	Increase in ADC if Assets Decrease 10%	Funded Ratio	Change in Funded Ratio if Assets Decrease 10%
2007	295%	241%	8.29%	1.61%	122.5%	-12.3%
2008	304%	254%	9.98%	1.63%	119.4%	-11.9%
2009	253%	251%	12.51%	1.36%	101.0%	-10.1%
2010	265%	265%	12.66%	1.53%	100.0%	-10.0%
2011	306%	297%	12.28%	1.60%	102.9%	-10.3%
2012	318%	330%	14.60%	1.68%	96.4%	-9.6%
2013	338%	346%	14.38%	1.80%	97.9%	-9.8%
2014	363%	359%	13.82%	1.99%	100.9%	-10.1%
2015	389%	375%	13.59%	2.10%	103.8%	-10.4%
2016	399%	390%	14.74%	2.17%	102.4%	-10.2%
2017	399%	393%	14.98%	2.15%	101.4%	-10.1%
2018	407%	393%	14.40%	2.25%	103.7%	-10.4%
2019	397%	402%	16.97%	2.64%	98.6%	-9.9%
2020	398%	407%	17.65%	2.64%	97.6%	-9.8%
2021	418%	418%	17.06%	2.15%	100.0%	-10.0%
2022	439%	418%	16.05%	2.25%	104.9%	-10.5%
2023	431%	423%	17.45%	2.39%	101.7%	-10.2%
2024	428%	422%	17.58%	2.36%	101.6%	-10.2%

Data shown is for years in which GRS was the retained actuary.

Additional risk metrics are shown in Appendix C.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Appendix A of this report. This report includes risk metrics as shown above and some additional information in Appendix C but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

Market Value Results

Investment gains and losses are smoothed over five years, and currently, the smoothed, or actuarial value of assets, is 101.1% of the market value. If the Funded Ratio for base benefits had been measured using the Market Value of Assets, it would be 100.5%.

SECTION III

TABLES

Table 1 – Key Valuation Results (Base Benefits Only)

		January 1, 2024	January 1, 2023
1.	Covered payroll for upcoming year	$ 1,024,178,731	$ 933,113,246
2.	Present value of future pay	$ 10,724,353,547	$ 9,715,128,089
3.	Normal cost rate		
	a. Defined benefit component (full)	17.05%	17.03%
	b. Hybrid component	10.91%	10.94%
	c. Defined benefit component (SS supplemental)	9.13%	8.67%
	d. Blended rate	16.89%	16.85%
4.	Present value of future benefits		
	a. Active members	$ 4,228,205,652	$ 3,893,812,964
	b. Inactive members (terminated vested and nonvested)	208,689,220	198,258,469
	c. Retirees and beneficiaries	1,567,054,919	1,403,589,485
	d. Reserve available to provide future COLAs	67,052,222	66,418,509
	e. Total	$ 6,071,002,013	$ 5,562,079,427
5.	Present value of future normal costs	(1,811,452,603)	(1,637,495,830)
6.	Total actuarial accrued liability [4.e] + [5]	$ 4,259,549,410	$ 3,924,583,597
7.	Actuarial value of assets	$ 4,259,549,410	$ 3,924,583,597
8.	Unfunded Actuarial Accrued Liability (UAAL) [6] - [7]	$ 0	$ 0
9.	Item [4.d] converted to an annual COLA on the accrued benefits for all current participants	0.14%	0.15%

Table 2 – Key Valuation Metrics Using Alternative Long-Term COLA Assumptions

Users of this report should be aware that valuation results depend heavily on the assumed cost-of-living adjustments. As such, we have shown key valuation results under alternative cost-of-living assumptions. The SRP, as it stands today, has very little pre-funded COLA. Current and future contribution rates are not sufficient to fund inflation-like COLAs for all retirees. However, current contribution rates, along with scheduled contribution rate increases are expected to increase the amount of funding available over time for COLAs and to protect against adverse experience.

		Assumed Long-Term Annual COLA		
		0.00%	**0.14%**	**2.50%**
	Funded Status ($ in millions)			
1.	Total actuarial accrued liability	$4,192.5	$4,259.5	$5,414.0
2.	Actuarial value of assets	$4,259.5	$4,259.5	$4,259.5
3.	Unfunded actuarial accrued liability/(Surplus)	($67.1)	$0.0	$1,154.5
4.	Funded ratio	101.6%	100.0%	78.7%
	Determination of Contribution Sufficiency			
5.	Normal cost (blended)	16.89%	17.16%	21.84%
6.	Administrative expense	0.69%	0.69%	0.69%
7.	Amount needed to amortize unfunded liabilities	N/A	0%	7.89%
8.	Total actuarial determined contribution	17.58%	17.85%	30.42%
9.	Expected blended contribution rate available during 2024	21.80%	21.80%	21.80%
10.	Contribution sufficient to fund base benefits and assumed COLA for all members?	Yes	Yes	No

A Reasonable Actuarially Determined Contribution for the Plan is the greater of the Actuarially Determined Contribution assuming no future cost-of-living adjustments (Item 8 under the 0.00% column), which is 17.58%, and the Normal Cost (including administrative expenses) assuming annual cost-of-living adjustments of 2.50% per year (Item 5 + Item 6 under the 2.50% column), which is 22.53%. This Actuarially Determined Contribution of 22.53% reflects that current funding levels and contributions are not sufficient to provide inflation-like COLAs for all generations, but will be able to do so over the long term.

Table 3 - Reconciliation of Amount Available to Fund Future COLAs and Protect Against Adverse Experience
Actuarial Gain/(Loss)

		January 1, 2024	January 1, 2023
1.	Total amount available January 1, 2023	**$ 66,418,509**	**$ 191,234,002**
1.b.	Item [1] after incorporation of the experience study recommendation	N/A	$ 131,822,650
2.	Total normal cost for year (Normal Cost % x actual payroll paid)	(173,513,775)	(157,199,130)
3.	Non service purchase contributions	209,228,583	185,176,146
4.	Interest on [1] for one year ([1.b] for January 1, 2023)	4,649,296	9,227,585
5.	Interest on [2] and [3] for one-half year	1,228,877	962,634
6.	Benefit improvements associated with House Bill HB22-1034	N/A	(21,105,507)
7.	Expected total amount available January 1, 2024	$ 108,011,489	$ 148,884,378
8.	Actual total amount available January 1, 2024	**$ 67,052,222**	**$ 66,418,509**
9.	Actuarial gain/(loss) for the period [8] - [7]	$ (40,959,267)	$ (82,465,869)
	<u>SOURCE OF GAINS/(LOSSES)</u>		
10.	Asset gain/(loss) (See Table 9)	$ (15,806,375)	$ (38,430,257)
11.	Salary liability gain/(loss) for the period	(25,154,896)	(78,373,352)
12.	Benefit Adjustment Granted as of October 1	(2,105,384)	(7,127,593)
13.	One-Time Supplemental Payment	(9,815,463)	N/A
14.	Other liability gain/(loss) for the period [9] - [10] - [11] - [12]	11,922,851	41,465,332

Table 4 - Development of the Recommended Defined Benefit Contribution Allocation for the Hybrid Defined Benefit Component

The Recommended Defined Benefit Contribution Allocation from Hybrid Defined Benefit Component members is designed such that Defined Benefit Component members and Hybrid Component members are expected to contribute equally during the year toward the cost of their relative benefit levels. The total contribution rate for Defined Benefit Component members during the period from July 1, 2024 through June 30, 2025 is 22.25%, 125% of the cost to cover ongoing base benefit accruals and expenses for the Defined Benefit Component.

As such, it is recommended that the Defined Benefit Contribution Allocation for the Hybrid Defined Benefit Component members be set to 14.56%, which is also 125% of the cost to cover ongoing base benefit accruals and expenses for that Component.

	Defined Benefit Component	
1.	Normal cost (base benefits)	17.05%
2.	Administrative expense	0.69%
3.	Total ongoing expense (base benefits)	17.74%
4.	Total contribution rate available during 2024/2025*	22.25%
5.	Contribution rate relative to ongoing expense	125%
	Hybrid Component	
1.	Normal cost (base benefits)	10.91%
2.	Administrative expense	0.69%
3.	Total ongoing expense (base benefits)	11.60%
4.	Contribution rate relative to ongoing expense (set equal to Defined Benefit Component above)	125%
5.	**Recommended Allocation of Contribution to Plan [3] x [4]**	**14.56%**

*Setting rates for year starting July 1

Table 5 - Allocation of Plan Assets at Fair Value

	Actual Allocation at January 1, 2024	Target Allocation
1. Global Public Equity	38.6%	38.0%
2. Long/Short Equity	6.8%	6.0%
3. Diversifiers	9.0%	9.0%
4. Private Market	30.8%	31.0%
5. Fixed Income	14.2%	15.0%
6. Cash	0.6%	1.0%
	100.0%	100.0%

Asset Allocation as of January 1, 2024

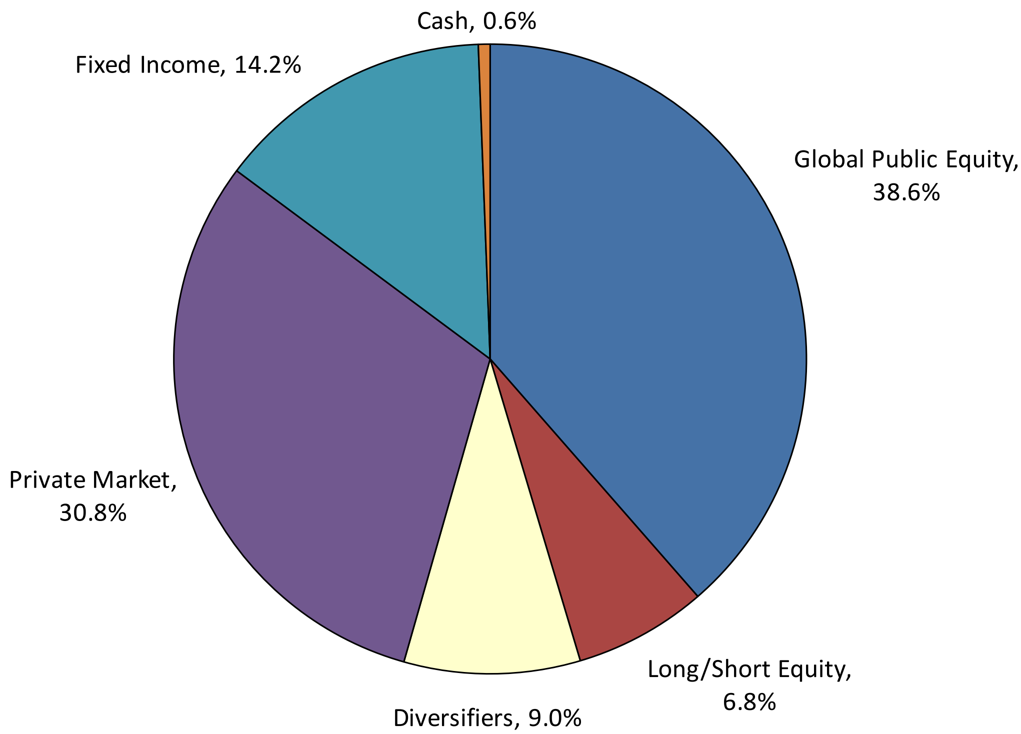


Table 6 - Reconciliation of Net Plan Assets

		Year Ending	
		December 31, 2023	December 31, 2022
1.	Market value of assets at beginning of year	$ 3,770,862,567	$ 4,009,828,285
2.	Revenue for the year		
	a. Contributions and Affiliations		
	i. Member contributions	$ 129,823,488	$ 131,322,878
	ii. Employer contributions	93,183,037	80,104,812
	iii. SWDD roll to normal contributions	104,639	0
	b. Net investment income		
	i. Interest	$ 26,430,485	$ 13,788,315
	ii. Dividends	19,762,343	19,112,265
	iii. Net change in accrued income	2,143,095	1,561,287
	iv. Unrealized gain/(loss)	276,571,018	(396,476,160)
	v. Realized gain/(loss)	72,374,765	58,039,195
	vi. Defined contribution earnings (net)	0	0
	vii. Investment expense	(33,153,765)	(30,008,842)
	viii. Other income	3,618,177	9,684,512
	c. Total revenue	$ 590,857,282	$ (112,871,738)
3.	Expenditures for the year		
	a. Refunds	$ (6,026,454)	$ (7,984,786)
	b. Benefit payments	(136,713,579)	(112,683,766)
	c. Administrative expense	(6,849,529)	(5,425,428)
	d. Total expenditures	$ (149,589,562)	$ (126,093,980)
4.	Change in net assets [2.c] + [3.d]	$ 441,267,720	$ (238,965,718)
5.	Market value of assets at end of year [1] + [4]	$ 4,212,130,287	$ 3,770,862,567

Table 7 - Development of Actuarial Value of Assets

1.	Actuarial value of assets at beginning of year		$ 3,924,583,597
2.	Net new investments		
	a.	Contributions and Affiliations	$ 223,111,164
	b.	Benefits paid	(136,713,579)
	c.	Refunds	(6,026,454)
	d.	Administrative expenses	(6,849,529)
	e.	Subtotal	$ 73,521,602
3.	Assumed investment return rate for fiscal year		7.00%
4.	Assumed investment return for fiscal year		$ 277,250,586
5.	Expected Actuarial Value at end of year		$ 4,275,355,785
6.	Market value of assets at end of year		$ 4,212,130,287
7.	Excess return/(Shortfall) [6] - [5]		$ (63,225,498)

8. Development of amounts to be recognized as of January 1, 2024:

Fiscal Year End	Remaining Deferrals of Excess/(Shortfall) of Investment	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remaining	Recognized for this valuation	Remaining after this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2019	$ 0	$ 0	$ 0	1	$ 0	$ 0
2020	0	0	0	2	0	0
2021	0	0	0	3	0	0
2022	(153,721,030)	90,495,532	(63,225,498)	4	(15,806,375)	(47,419,123)
2023	90,495,532	(90,495,532)	0	5	0	0
Total	$ (63,225,498)	$ 0	$ (63,225,498)		$ (15,806,375)	$ (47,419,123)

9.	Actuarial value of assets as of January 1, 2024 [6] - [8]	$ 4,259,549,410
10.	Ratio of actuarial value to market value	101.1%

Amounts in column (1) for fiscal years ending 2019 through 2022 are from the prior valuation. The column (1) amount for fiscal year 2023 is developed using item 7 less the total of column (1) for fiscal years ending 2019 through 2022. To the extent possible, the 2023 excess or shortfall is used to reduce prior bases. In this case, the 2022 base is partially offset by the 2023 gain. The fiscal year 2019 through 2021 bases are $0 because they were previously offset.

Table 8 - Investment Yields

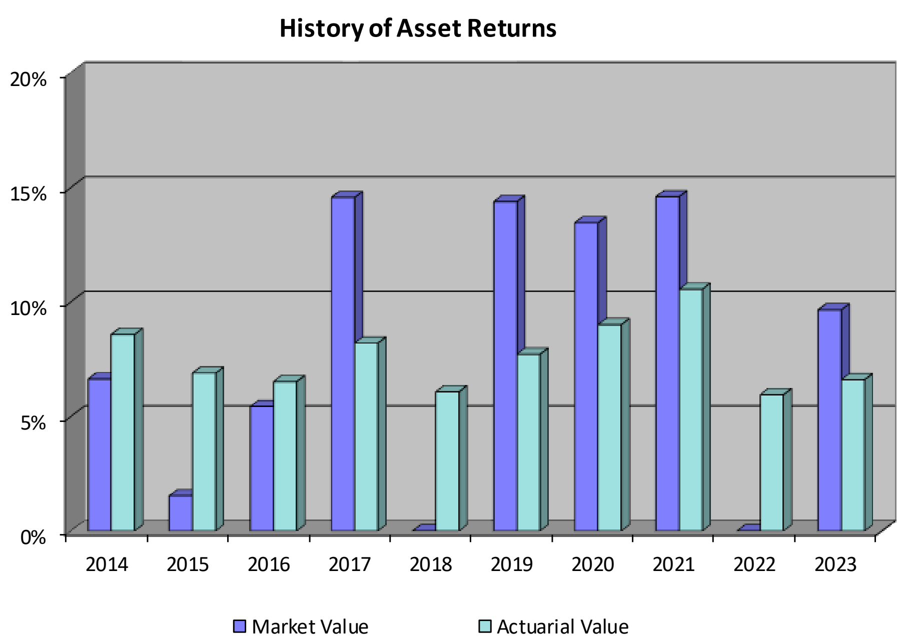
Item	Market Value	Actuarial Value
1. Assets as of January 1, 2023 (A)	$ 3,770,862,567	$ 3,924,583,597
2. Contributions during FY23	223,111,164	223,111,164
3. Benefit payments made during FY23	(136,713,579)	(136,713,579)
4. Refunds of contributions during FY23	(6,026,454)	(6,026,454)
5. Administrative expenses during FY23	(6,849,529)	(6,849,529)
6. Investment return during FY23	367,746,118	261,444,211
7. Assets as of January 1, 2024 (B): [1] + [2] + [3] + [4] + [5] + [6]	$ 4,212,130,287	$ 4,259,549,410
8. Approximate rate of return on average invested assets		
a. Net investment income (I)	$ 367,746,118	$ 261,444,211
b. Estimated return based on (2I / (A + B - I))	9.66%	6.60%

Table 9 - Gain/(Loss) on Actuarial Value of Assets

Item	Valuation as of January 1, 2024	Valuation as of January 1, 2023
1. Actuarial assets, prior valuation	$ 3,924,583,597	$ 3,621,208,845
2. Total contributions since prior valuation	$ 223,111,164	$ 211,427,690
3. Benefits, refunds, and administrative expense since prior valuation	$ (149,589,562)	$ (126,093,980)
4. Assumed net investment income at actuarial rate%		
a. Beginning assets	$ 274,720,852	$ 253,484,619
b. Contributions	7,676,818	7,399,969
c. Benefits, refunds paid, and administrative expense	(5,147,084)	(4,413,289)
d. Total	$ 277,250,586	$ 256,471,299
5. Expected actuarial assets [1] + [2] + [3] + [4]	$ 4,275,355,785	$ 3,963,013,854
6. Actual actuarial assets, this valuation	$ 4,259,549,410	$ 3,924,583,597
7. Asset gain/(loss) [6] - [5]	$ (15,806,375)	$ (38,430,257)

Table 10 - History of Investment Return Rates

For Fiscal Year Ending	Market Value	Actuarial Value
(1)	(2)	(3)
December 31, 2014	6.63%	8.58%
December 31, 2015	1.54%	6.90%
December 31, 2016	5.44%	6.51%
December 31, 2017	14.55%	8.21%
December 31, 2018	(0.09%)	6.08%
December 31, 2019	14.37%	7.71%
December 31, 2020	13.46%	9.00%
December 31, 2021	14.59%	10.55%
December 31, 2022	(8.00%)	5.95%
December 31, 2023	9.66%	6.60%
Average Returns:		
Last 5 Years	8.4%	8.0%
Last 10 Years	7.0%	7.6%



Note: Amounts for 2021 and earlier reflect the experience of the former Statewide Defined Benefit Plan. Although similar, experience of the former Statewide Hybrid Plan – Defined Benefit Component was slightly different due to differences in cash flow timing.

Table 11a - Schedule of Funding Progress
Base Benefits Only (Assumed COLA = 0.0%)

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January 1, 2015	$ 1,714,971,185	$ 1,652,901,084	$ (62,070,101)	103.8%	$ 441,313,862	(14.1%)
January 1, 2016	1,890,604,068	1,846,961,999	(43,642,069)	102.4%	473,359,565	(9.2%)
January 1, 2017	2,050,113,711	2,021,526,883	(28,586,828)	101.4%	513,837,288	(5.6%)
January 1, 2018	2,353,241,861	2,269,410,684	(83,831,177)	103.7%	577,624,013	(14.5%)
January 1, 2019	2,615,483,150	2,653,120,261	37,637,111	98.6%	659,583,375	5.7%
January 1, 2020	2,900,630,940	2,972,018,080	71,387,140	97.6%	729,345,875	9.8%
January 1, 2021	3,231,270,532	3,230,485,701	(784,831)	100.0%	772,364,866	(0.1%)
January 1, 2022	3,517,056,495	3,352,605,624	(164,450,871)	104.9%	801,386,280	(20.5%)
January 1, 2023	3,924,583,597	3,858,165,088	(66,418,509)	101.7%	911,151,336	(7.3%)
January 1, 2024	4,259,549,410	4,192,497,188	(67,052,222)	101.6%	994,387,225	(6.7%)

Note: Amounts for 2022 and earlier reflect the former Statewide Defined Benefit Plan.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. With regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
(2) The measurement alone is inappropriate for assessing the need for or the amount of future employer contributions.
(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Table 11b - Schedule of Funding Progress
Including Long-Term COLA Assumption (Assumed COLA = 2.50% per year)

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January 1, 2023	$ 3,924,583,597	$ 4,982,405,046	$ 1,057,821,449	78.8%	$ 911,151,336	116.1%
January 1, 2024	4,259,549,410	5,414,004,935	1,154,455,525	78.7%	994,387,225	116.1%

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. With regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligations.
(2) The measurement alone is inappropriate for assessing the need for or the amount of future employer contributions.
(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Table 12 - Solvency Test
Base Benefits Only

	Aggregated Accrued Liabilities for				Portion of Accrued Liabilities Covered by Reported Assets		
Valuation Date	Active Members Contributions	Retirees Beneficiaries and Vested Terminations	Members (Employer Financed	Actuarial Value of Assets	(5)/(2)	[(5)-(2)]/(3)	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
January 1, 2023	$ 824,260	$ 1,601,848	$ 1,498,476	$ 3,924,584	100.0%	100.0%	100.0%
January 1, 2024	878,270	1,775,744	1,605,535	4,259,549	100.0%	100.0%	100.0%

$ amounts in ‘000s

Table 13 - Cash Flow Analysis

Year Ending December 31,	Contributions for the Year	Expenditures During the Year: Benefit Payments	Refund of Contributions	Identified Receipts	Expenses	Total	External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2014	$ 83,472	$ (47,701)	$ (1,849)	$ 0	$ (15,647)	$ (65,196)	$ 18,276	$ 1,765,759	1.0%
2015	110,242	(53,076)	(1,763)	0	(1,854)	(56,694)	53,548	1,848,725	2.9%
2016	100,379	(59,989)	(1,813)	0	(3,384)	(65,186)	35,192	1,985,393	1.8%
2017	200,793	(65,965)	(2,188)	0	(3,136)	(71,288)	129,505	2,413,276	5.4%
2018	199,491	(77,194)	(3,406)	0	(3,227)	(83,828)	115,664	2,526,693	4.6%
2019	170,971	(83,822)	(3,200)	0	(3,525)	(90,547)	80,423	2,975,935	2.7%
2020	169,250	(94,475)	(4,259)	0	(4,032)	(102,767)	66,483	3,447,586	1.9%
2021	178,370	(220,136)	(6,073)	0	(4,507)	(230,715)	(52,344)	3,894,539	-1.3%
2022	211,428	(112,684)	(7,985)	0	(5,425)	(126,094)	85,334	3,770,863	2.3%
2023	223,111	(136,714)	(6,026)	0	(6,850)	(149,590)	73,522	4,212,130	1.7%
2024 *	223,245	(159,102)	(10,831)	0	(7,055)	(176,988)	46,257	4,554,855	1.0%
2025 *	235,168	(176,801)	(11,156)	0	(7,267)	(195,223)	39,945	4,915,038	0.8%
2026 *	247,606	(195,483)	(11,491)	0	(7,485)	(214,458)	33,148	5,293,398	0.6%

* Results for 2024, 2025, & 2026 are based on expected contributions, expected benefit payments, and assumed investment return of 7.00%.
Expected contributions are based on a blended combined employee and employer rate of 21.80%/22.29%/22.79% and 3.00% annual payroll growth for 2024/2025/2026, respectively.
Expected benefit payments are based on current plan benefits and expected retirements, terminations, and mortality.
Assets are assumed to increase at the annual return of 7.00% with all cash flow occurring in the middle of the year.

$ amounts in '000s

Note: Amounts for 2022 and earlier reflect the combined experience of the former Statewide Defined Benefit Plan and the Statewide Hybrid Plan – Defined Benefit Component.

Table 14 - Membership Data

	January 1, 2024	January 1, 2023	January 1, 2022
1. Active members			
Defined Benefit Component			
a. Number	10,132	9,721	9,214
b. Total payroll	$ 970,440,729	$ 886,861,361	$ 793,432,935
c. Average annual salary	$ 95,780	$ 91,231	$ 86,112
d. Average age	39.6	39.7	39.9
e. Average service	9.5	9.6	9.8
Hybrid Component			
a. Number	174	187	192
b. Total payroll	$ 18,233,877	$ 18,575,043	$ 17,913,196
c. Average annual salary	$ 104,792	$ 99,332	$ 93,298
d. Average age	44.3	45.0	44.3
e. Average service	13.0	13.3	12.8
Defined Benefit - Social Security Component			
a. Number	74	78	119
b. Total payroll	$ 5,712,619	$ 5,714,932	$ 7,953,345
c. Average annual salary	$ 77,198	$ 73,268	$ 66,835
d. Average age	38.6	38.0	38.2
e. Average service	4.5	4.9	4.8
Total			
a. Number	10,380	9,986	9,525
b. Total payroll	$ 994,387,225	$ 911,151,336	$ 819,299,476
c. Average annual salary	$ 95,798	$ 91,243	$ 86,016
d. Average age	39.7	39.8	40.0
e. Average service	9.5	9.6	9.8
2. Inactive members			
a. Vested	305	314	311
b. NonVested *	1,972	1,725	1,423
3. Service retirees			
a. Number	2,560	2,331	2,153
b. Total annual benefits	$ 130,906,218	$ 117,222,006	$ 105,848,869
c. Average annual benefit	$ 51,135	$ 50,288	$ 49,163
d. Average age	64.7	64.5	64.1
4. Beneficiaries and spouses			
a. Number	180	158	142
b. Total annual benefits	$ 4,421,505	$ 3,774,291	$ 3,145,495
c. Average annual benefit	$ 24,564	$ 23,888	$ 22,151
d. Average age	62.5	62.1	61.2

* Includes members who have terminated and could elect a deferred benefit, but have not yet been processed

Note: Amounts for 2022 and earlier reflect the combined experience of the former Statewide Defined Benefit Plan and The Statewide Hybrid Plan – Defined Benefit Component.

Table 15 - Historical Summary of Active Member Data

Valuation Date	Active Count	Average Age	Average Service	Covered Payroll	Average Annual Salary	Percent Change in Average Salary
2015	6,401	41.0	10.7	$ 453,454,046	$ 70,841	1.20%
2016	6,762	40.9	10.6	486,190,306	71,900	1.50%
2017	7,050	40.8	10.5	526,344,234	74,659	3.84%
2018	7,775	40.6	10.4	592,682,062	76,229	2.10%
2019	8,572	40.3	10.2	675,035,150	78,749	3.31%
2020	9,133	40.1	10.1	745,690,012	81,648	3.68%
2021	9,304	40.2	10.1	789,624,976	84,869	3.95%
2022	9,525	40.0	9.8	819,299,476	86,016	1.35%
2023	9,986	39.8	9.6	911,151,336	91,243	6.08%
2024	10,380	39.7	9.5	994,387,225	95,798	4.99%

Note: Amounts for 2022 and earlier reflect the combined experience of the former Statewide Defined Benefit Plan and The Statewide Hybrid Plan – Defined Benefit Component.

Table 16 - Distribution of Active Members by Age and by Years of Service
As of December 31, 2023

	Years of Credited Service												
	Less than 1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Attained	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &	Count &
Age	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.	Avg. Comp.
Under 25	199	109	48	9	4								369
	$62,924	$67,483	$68,209	$72,345	$77,226								$65,158
25-29	307	323	247	132	146	165							1,320
	$65,437	$69,410	$76,075	$80,380	$89,760	$89,656							$75,612
30-34	241	282	186	171	229	715	86						1,910
	$67,243	$72,826	$78,768	$82,644	$91,541	$97,653	$102,774						$86,465
35-39	152	158	119	105	164	725	354	108	1				1,886
	$66,749	$72,419	$77,412	$82,126	$92,702	$99,650	$104,711	$111,707	$99,208				$93,374
40-44	83	87	62	61	73	370	319	454	87	4			1,600
	$71,591	$73,314	$80,846	$84,050	$92,727	$99,469	$107,434	$114,640	$121,170	$128,158			$102,128
45-49	43	38	44	24	39	184	174	375	323	78	2		1,324
	$76,608	$81,297	$91,651	$86,617	$89,841	$100,463	$105,038	$112,804	$121,633	$123,968	$119,535		$108,956
50-54	26	28	17	18	17	108	125	253	370	247	25		1,234
	$67,352	$78,591	$84,722	$81,866	$88,994	$102,804	$103,684	$113,790	$117,990	$122,404	$128,326		$112,098
55-59	17	7	14	17	9	46	47	121	125	105	35	4	547
	$74,376	$82,732	$99,796	$88,600	$106,879	$102,024	$101,354	$111,838	$117,425	$126,790	$136,992	$165,351	$113,611
60-64	7	7	4	6	3	19	17	29	19	20	11	4	146
	$75,549	$88,872	$81,502	$95,509	$144,204	$101,623	$122,518	$112,063	$120,406	$121,170	$113,190	$117,487	$110,769
65 & Over	5	2	2	3	2	5	2	13	3	3	3	1	44
	$75,663	$109,174	$118,802	$69,536	$69,281	$120,299	$96,835	$121,510	$138,244	$98,615	$154,436	$175,737	$111,497
Total	1,080	1,041	743	546	686	2,337	1,124	1,353	928	457	76	9	10,380
	$66,779	$71,894	$78,565	$82,388	$91,689	$98,621	$105,387	$113,498	$119,575	$123,519	$130,926	$145,232	$95,798

Average:	Age:	39.7	Number of participants:	Males:	9,105
	Service:	9.5		Females:	1,275

Table 17 - Schedule of Retirants and Annuitants Added to and Removed from Rolls*

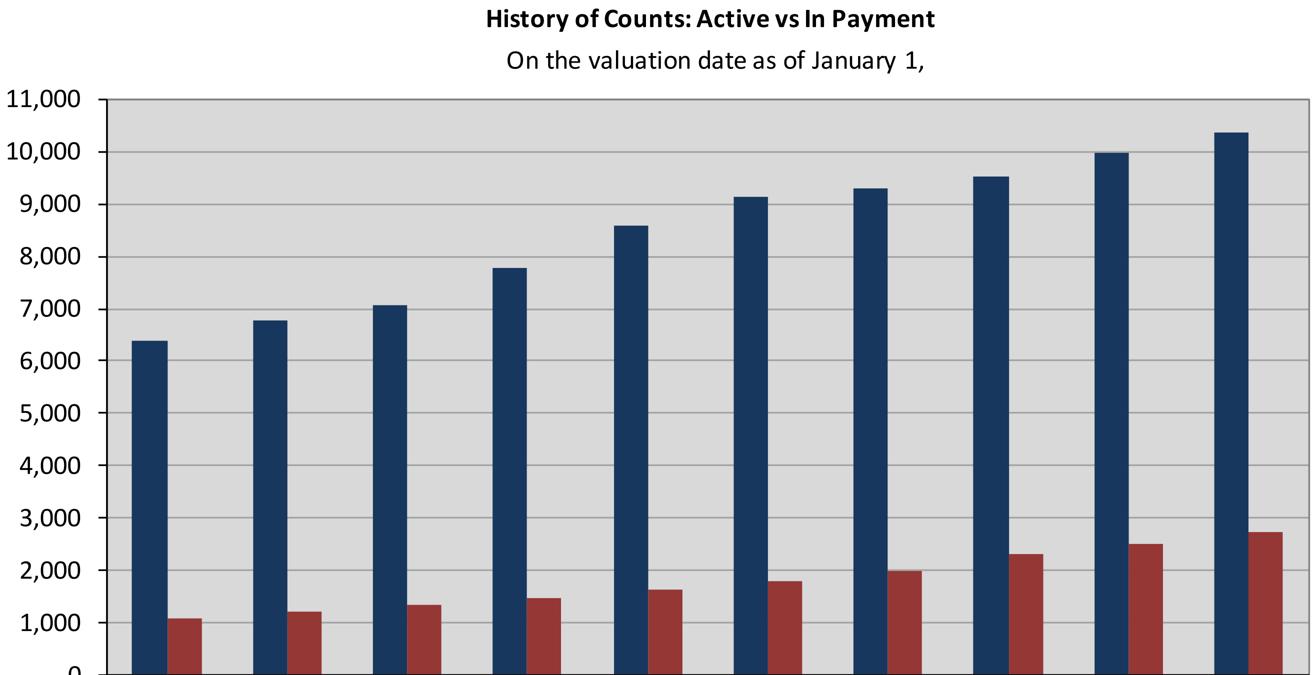
	Added to Rolls**		Removed from Rolls		Rolls-End of Year			
Year Ended	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	% Increase in Annual Benefits	Average Annual Benefits
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
December 31, 2014	152	$ 6,624,569	5	$ 121,694	1,074	$ 42,854,504	17.89%	39,902
December 31, 2015	140	6,689,379	5	120,311	1,209	49,423,572	15.33%	40,880
December 31, 2016	137	6,942,172	5	138,121	1,341	56,227,623	13.77%	41,930
December 31, 2017	143	6,881,672	7	292,551	1,477	62,816,744	11.72%	42,530
December 31, 2018	176	9,087,814	11	393,695	1,642	71,510,863	13.84%	43,551
December 31, 2019	156	7,892,310	12	347,834	1,786	79,055,339	10.55%	44,264
December 31, 2020	221	12,735,141	24	1,000,353	1,983	90,790,128	14.84%	45,784
December 31, 2021	328	18,685,025	16	480,789	2,295	108,994,364	20.05%	47,492
December 31, 2022	218	12,856,674	24	854,741	2,489	120,996,297	11.01%	48,612
December 31, 2023	276	15,318,122	25	986,695	2,740	135,327,724	11.84%	49,390

**Includes beneficiaries of deceased members with a deferred benefit.*

***Includes cost-of-living adjustments*

Note: Amounts for 2022 and earlier reflect the combined experience of the former Statewide Defined Benefit Plan and The Statewide Hybrid Plan – Defined Benefit Component.

Table 18 – Comparison of Active and Annuitant Counts



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Actives	6,401	6,762	7,050	7,775	8,572	9,133	9,304	9,525	9,986	10,380
In Payment	1,074	1,209	1,341	1,477	1,642	1,786	1,983	2,295	2,489	2,740

In comparison to its public sector peers, the Statewide Retirement Plan could be considered a "young" plan as the Plan's liabilities are still largely attributable to active members and are comparably small in relation to the active member payroll. Historically, in addition to new hires and wage inflation, the FPPA Statewide Retirement Plan membership has grown through additional affiliations (reentry groups). This potential pool of public safety employer reentry candidates is diminishing, and it is unlikely that this will continue at the historical rate.

Table 19 - Summary of Members and Adjusted Payroll by Employer

City Code	City Name	Police No.	Police Earnings	Fire No.	Fire Earnings	Total No.	Total Earnings
550	ADAMS COUNTY	0	$ 0	106	$ 10,978,429	106	$ 10,978,429
501	ARVADA FPD	0	0	180	18,581,115	180	18,581,115
711	ASPEN FPD	0	0	18	1,760,278	18	1,760,278
9	AULT	8	514,547	0	0	8	514,547
712	AULT FPD	0	0	7	403,857	7	403,857
10	AURORA	0	0	423	43,051,261	423	43,051,261
12	BASALT	10	899,296	0	0	10	899,296
13	BAYFIELD	8	596,351	0	0	8	596,351
718	BENNETT FPD #7	0	0	37	2,534,553	37	2,534,553
503	BERTHOUD FPD	0	0	33	3,017,702	33	3,017,702
538	BEULAH FIRE PROTECTION & AMBULANCE	0	0	2	107,909	2	107,909
7331	BIG SANDY FPD	0	0	2	91,282	2	91,282
580	BLACK FOREST RESCUE	0	0	30	2,269,104	30	2,269,104
723	BLACK HAWK	0	0	21	2,057,845	21	2,057,845
18	BLANCA	3	138,572	0	0	3	138,572
726	BOULDER MOUNTAIN AUTH	0	0	7	458,225	7	458,225
730	BOULDER RURAL FPD	0	0	21	2,196,516	21	2,196,516
7700	BRIGGSDALE FPD	0	0	1	58,000	1	58,000
326	BRIGHTON	87	7,997,955	0	0	87	7,997,955
26	BRIGHTON (GREATER) FPD	0	0	93	9,781,290	93	9,781,290
504	BROADMOOR FPD	0	0	3	221,221	3	221,221
27	BROOMFIELD	159	16,171,215	0	0	159	16,171,215
28	BRUSH	9	645,439	0	0	9	645,439
29	BUENA VISTA	12	802,134	0	0	12	802,134
735	BYERS FPD #9	0	0	7	414,410	7	414,410
736	CALHAN FPD	0	0	5	246,002	5	246,002
33	CANON CITY	36	2,463,799	0	0	36	2,463,799
533	CANON CITY AREA FPD	0	0	46	2,558,003	46	2,558,003
740	CARBONDALE AND RURAL FPD	0	0	32	3,221,083	32	3,221,083
35	CASTLE ROCK	82	8,409,603	100	10,755,149	182	19,164,753

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City Code	City Name	Police No.	Police Earnings	Fire No.	Fire Earnings	Total No.	Total Earnings
37	CENTER	7	$ 338,430	0	$ 0	7	$ 338,430
749	CHAFFEE COUNTY FPD	0	0	8	505,117	8	505,117
754	CIMARRON HILLS FPD	0	0	28	2,208,581	28	2,208,581
7125	CLEAR CREEK AUTHORITY	0	0	9	561,609	9	561,609
509	CLIFTON FPD	0	0	20	1,325,790	20	1,325,790
757	COAL CREEK CANYON FPD	0	0	1	96,025	1	96,025
531	COLORADO RIVER FRA	0	0	53	4,812,122	53	4,812,122
45	COLORADO SPRINGS	547	49,017,627	424	41,009,176	971	90,026,803
46	COLUMBINE VALLEY	6	500,750	0	0	6	500,750
765	CORTEZ FPD	0	0	22	1,074,314	22	1,074,314
772	CRESTED BUTTE FPD	0	0	22	1,839,979	22	1,839,979
774	CRIPPLE CREEK	0	0	12	875,615	12	875,615
57	DACONO	14	1,422,554	0	0	14	1,422,554
58	DEBEQUE	4	312,226	0	0	4	312,226
779	DEBEQUE FPD	0	0	11	915,886	11	915,886
783	DELTA COUNTY FPD #1	0	0	1	58,983	1	58,983
62	DENVER	1,376	144,421,823	1,007	105,551,763	2,383	249,973,586
63	DILLON	12	1,203,813	0	0	12	1,203,813
64	DINOSAUR	3	174,525	0	0	3	174,525
787	DIVIDE FPD	0	0	3	229,500	3	229,500
567	DURANGO & RESCUE AUTH	0	0	78	6,122,031	78	6,122,031
507	EAST GRAND FPD #4	0	0	6	527,243	6	527,243
795	EATON FPD	0	0	20	1,729,425	20	1,729,425
73	EDGEWATER	19	1,707,017	0	0	19	1,707,017
74	ELIZABETH	10	767,508	0	0	10	767,508
515	ELIZABETH FPD	0	0	22	1,690,200	22	1,690,200
7102	ELK CREEK FPD	0	0	27	1,800,195	27	1,800,195
75	EMPIRE	2	99,384	0	0	2	99,384
76	ENGLEWOOD	72	7,717,521	0	0	72	7,717,521
77	ERIE	41	4,192,476	0	0	41	4,192,476
523	ESTES VALLEY FPD	0	0	5	470,168	5	470,168
79	EVANS	34	3,411,491	0	0	34	3,411,491

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City Code	City Name	Police No.	Police Earnings	Fire No.	Fire Earnings	Total No.	Total Earnings
579	EVANS FPD	0	$ 0	20	$ 1,839,224	20	$ 1,839,224
7109	EVERGREEN FPD	0	0	5	429,002	5	429,002
510	FAIRMOUNT FPD	0	0	25	2,155,280	25	2,155,280
80	FAIRPLAY MARSHALLS	4	342,133	0	0	4	342,133
7112	FALCON FPD	0	0	61	4,746,910	61	4,746,910
81	FEDERAL HEIGHTS	22	1,990,701	15	1,282,241	37	3,272,942
82	FIRESTONE	30	3,267,268	0	0	30	3,267,268
85	FLORENCE	9	443,108	0	0	9	443,108
7222	FOOTHILLS & RESCUE	0	0	3	253,989	3	253,989
7122	FORT LEWIS-MESA FPD	0	0	1	104,720	1	104,720
7123	FORT LUPTON FPD	0	0	44	3,657,390	44	3,657,390
89	FOUNTAIN	59	4,929,168	46	3,673,526	105	8,602,694
7449	FOUR MILE FPD	0	0	7	364,414	7	364,414
90	FOWLER	2	89,829	0	0	2	89,829
511	FRANKTOWN FPD	0	0	25	1,805,057	25	1,805,057
292	FREDERICK	34	3,679,483	0	0	34	3,679,483
592	FREDERICK FIRESTONE FPD	0	0	81	7,686,551	81	7,686,551
93	FRISCO	14	1,360,627	0	0	14	1,360,627
7131	FRONT RANGE FIRE RESCUE FPD	0	0	36	3,503,406	36	3,503,406
7132	GALETON FPD	0	0	5	409,680	5	409,680
95	GARDEN CITY	5	382,938	0	0	5	382,938
7135	GATEWAY-UNAWEEP FPD	0	0	1	72,251	1	72,251
7136	GENESEE FPD	0	0	3	247,835	3	247,835
97	GEORGETOWN	3	275,104	0	0	3	275,104
102	GRANADA	1	55,164	0	0	1	55,164
7147	GRAND FPD #1	0	0	10	719,361	10	719,361
104	GRAND JUNCTION	0	0	147	12,260,424	147	12,260,424
7149	GRAND LAKE FPD	0	0	12	831,638	12	831,638
7150	GRAND VALLEY FPD	0	0	15	1,478,453	15	1,478,453
7153	GREATER EAGLE FPD	0	0	16	1,272,834	16	1,272,834
107	GREELEY	0	0	127	12,710,406	127	12,710,406
7156	GYPSUM FPD	0	0	11	919,077	11	919,077

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City Code	City Name	Police No.	Police Earnings	Fire No.	Fire Earnings	Total No.	Total Earnings
7158	HARTSEL FPD	0	$ 0	2	$ 138,213	2	$ 138,213
115	HAXTUN	2	115,040	0	0	2	115,040
119	HOLYOKE	5	267,203	0	0	5	267,203
7174	HOT SULPHUR SPRINGS/PARSHALL FPD	0	0	1	80,880	1	80,880
7176	HUDSON FPD	0	0	29	2,724,085	29	2,724,085
2123	HUDSON POLICE	10	680,000	0	0	10	680,000
124	HUGO	3	157,836	0	0	3	157,836
125	IDAHO SPRINGS	9	694,957	0	0	9	694,957
126	IGNACIO	8	582,482	0	0	8	582,482
7187	INTER-CANYON FPD	0	0	5	407,659	5	407,659
7191	JEFFERSON-COMO FPD	0	0	10	571,931	10	571,931
129	JOHNSTOWN	24	2,016,094	0	0	24	2,016,094
131	KEENESBURG	7	519,436	0	0	7	519,436
132	KERSEY	6	497,884	0	0	6	497,884
7198	KIOWA FPD	0	0	3	163,471	3	163,471
136	KREMMLING	3	265,846	0	0	3	265,846
5136	KREMMLING FPD	0	0	2	122,000	2	122,000
138	LA JARA	2	102,664	0	0	2	102,664
144	LA SALLE	7	538,877	0	0	7	538,877
7211	LA SALLE FPD	0	0	15	1,195,166	15	1,195,166
146	LA VETA	1	60,000	0	0	1	60,000
137	LAFAYETTE	41	4,129,763	39	4,092,279	80	8,222,042
7206	LAKE GEORGE FPD	0	0	1	63,922	1	63,922
593	LAKE DILLON FPD	0	0	76	7,295,637	76	7,295,637
263	LAKESIDE	13	1,041,346	0	0	13	1,041,346
141	LARKSPUR FPD	0	0	19	1,446,014	19	1,446,014
147	LEADVILLE	3	216,229	15	961,584	18	1,177,813
574	LEFTHAND FPD	0	0	3	221,888	3	221,888
149	LITTLETON	52	5,798,866	0	0	52	5,798,866
150	LOCHBUIE	11	935,749	0	0	11	935,749
214	LOG LANE VILLAGE	1	43,831	0	0	1	43,831
268	LONE TREE	55	5,394,887	0	0	55	5,394,887

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City Code	City Name	Police No.	Police Earnings	Fire No.	Fire Earnings	Total No.	Total Earnings
151	LONGMONT	66	$ 5,707,068	33	$ 2,981,158	99	$ 8,688,226
578	LOS PINOS FPD	0	0	27	1,759,964	27	1,759,964
7226	LOWER VALLEY FPD	0	0	20	1,363,446	20	1,363,446
7227	LYONS FPD	0	0	7	534,911	7	534,911
155	MANASSA	2	78,501	0	0	2	78,501
157	MANITOU SPRINGS	13	1,067,193	11	901,972	24	1,969,165
160	MEAD	14	1,354,556	0	0	14	1,354,556
163	MILLIKEN	11	970,788	0	0	11	970,788
167	MONTROSE	42	3,028,276	0	0	42	3,028,276
537	MONTROSE FPD	0	0	43	3,538,752	43	3,538,752
166	MONTE VISTA	15	813,162	0	0	15	813,162
168	MONUMENT	26	2,018,226	0	0	26	2,018,226
171	MOUNT CRESTED BUTTE POLICE	7	424,803	0	0	7	424,803
170	MOUNTAIN VIEW	9	687,742	0	0	9	687,742
516	MOUNTAIN VIEW FPD	0	0	149	16,889,969	149	16,889,969
266	MOUNTAIN VILLAGE	8	661,736	0	0	8	661,736
7246	NEDERLAND FPD	0	0	6	473,972	6	473,972
7251	NORTH FORK FPD	0	0	1	86,493	1	86,493
532	NORTH METRO FIRE RESCUE	0	0	177	18,781,166	177	18,781,166
7253	NORTH ROUTT COUNTY	0	0	6	331,224	6	331,224
7255	NORTHEAST TELLER COUNTY FPD	0	0	16	1,272,158	16	1,272,158
7259	NORTH-WEST FPD	0	0	20	1,308,728	20	1,308,728
178	NUNN	3	203,156	0	0	3	203,156
179	OAK CREEK	2	131,322	0	0	2	131,322
7263	OAK CREEK FPD	0	0	9	615,266	9	615,266
180	OLATHE	4	239,381	0	0	4	239,381
7264	OLATHE FPD	0	0	11	624,460	11	624,460
588	PAGOSA FPD	0	0	19	1,129,361	19	1,129,361
188	PAGOSA SPRINGS	9	623,217	0	0	9	623,217
189	PALISADE	10	697,340	6	383,753	16	1,081,093
190	PALMER LAKE	6	357,589	5	354,483	11	712,072
192	PAONIA	6	351,514	0	0	6	351,514

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City		Police		Fire		Total	
Code	City Name	No.	Earnings	No.	Earnings	No.	Earnings
106	PARACHUTE	6	$ 384,210	0	$ 0	6	$ 384,210
191	PARKER	68	7,312,211	0	0	68	7,312,211
7281	PEYTON FPD	0	0	1	46,958	1	46,958
7481	PLATEAU VALLEY FPD	0	0	5	321,727	5	321,727
7285	PLATTE CANYON FPD	0	0	26	2,101,086	26	2,101,086
7287	PLATTE VALLEY FPD	0	0	23	1,948,532	23	1,948,532
196	PLATTEVILLE	9	633,556	0	0	9	633,556
513	PLATTEVILLE/GILCREST FPD	0	0	43	3,758,345	43	3,758,345
7289	PLEASANT VIEW METRO FIRE DISTRICT	0	0	10	797,967	10	797,967
518	POUDRE FIRE AUTHORITY	0	0	134	13,022,583	134	13,022,583
199	PUEBLO	168	14,187,861	136	11,663,655	304	25,851,515
519	PUEBLO RURAL FPD	0	0	30	1,915,384	30	1,915,384
7294	PUEBLO W. METRO	0	0	35	2,465,248	35	2,465,248
7298	RATTLESNAKE FPD	0	0	12	734,613	12	734,613
521	RED WHITE & BLUE FPD	0	0	57	5,831,833	57	5,831,833
7305	RIDGWAY FPD	0	0	4	232,472	4	232,472
551	ROARING FORK FRA	0	0	35	3,113,236	35	3,113,236
7314	RYE FPD	0	0	4	291,021	4	291,021
542	SABLE-ALTURA FPD	0	0	9	520,598	9	520,598
213	SALIDA	19	1,422,263	13	1,005,670	32	2,427,932
215	SANFORD POLICE	1	68,000	0	0	1	68,000
543	SECURITY FPD	0	0	50	3,825,365	50	3,825,365
219	SEVERANCE	7	550,658	0	0	7	550,658
220	SHERIDAN	28	2,518,753	0	0	28	2,518,753
222	SILT	7	544,222	0	0	7	544,222
525	SOUTH ADAMS COUNTY FPD	0	0	102	10,576,332	102	10,576,332
7339	SOUTH FORK	2	111,104	0	0	2	111,104
5339	SOUTH FORK FPD	0	0	6	295,034	6	295,034
540	SOUTH METRO FIRE RESCUE FPD	0	0	145	17,644,212	145	17,644,212
7340	SOUTHEAST WELD FPD	0	0	27	2,208,388	27	2,208,388
548	SOUTHERN PARK COUNTY FPD	0	0	2	88,800	2	88,800
552	SOUTHWESTERN HIGHWAY 115 FPD	0	0	1	85,000	1	85,000

Table 19 (continued) - Summary of Members and Adjusted Payroll by Employer

City		Police		Fire		Total	
Code	City Name	No.	Earnings	No.	Earnings	No.	Earnings
229	SPRINGFIELD	4	$ 220,100	0	$ 0	4	$ 220,100
231	STEAMBOAT SPRINGS	0	0	37	3,566,193	37	3,566,193
232	STERLING	20	1,467,143	22	1,522,770	42	2,989,913
7348	STRASBURG FPD #8	0	0	5	275,894	5	275,894
7349	STRATMOOR HILLS FPD	0	0	6	422,034	6	422,034
545	TELLURIDE FPD	0	0	33	2,855,051	33	2,855,051
238	THORNTON	229	23,911,500	123	14,108,754	352	38,020,254
7354	TIMBERLINE FPD	0	0	10	646,322	10	646,322
2557	TRI-LAKES MONUMENT FPD	0	0	75	7,602,668	75	7,602,668
240	TRINIDAD	0	0	17	1,178,722	17	1,178,722
595	UPPER PINE RIVER FPD	0	0	34	2,220,268	34	2,220,268
7369	WELLINGTON FPD	0	0	16	1,018,849	16	1,018,849
7373	WEST DOUGLAS COUNTY FPD	0	0	1	99,318	1	99,318
534	WEST METRO FPD	0	0	361	38,062,655	361	38,062,655
7375	WEST ROUTT FPD	0	0	8	473,784	8	473,784
252	WESTMINSTER	176	18,597,046	140	14,951,878	316	33,548,924
2257	WINDSOR	50	4,847,655	0	0	50	4,847,655
7384	WINDSOR SEVERANCE FPD	0	0	56	5,522,257	56	5,522,257
254	WIGGINS	3	187,722	0	0	3	187,722
260	WRAY	6	336,664	0	0	6	336,664
262	YUMA	8	442,348	0	0	8	442,348
	Totals	4,071	$ 391,959,158	6,309	$ 602,428,067	10,380	$ 994,387,225

SECTION IV

APPENDICES

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

I. Valuation Date

The valuation date is January 1st of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial liability.

1. The valuation is prepared on the projected benefit basis. The present value of each participant's expected benefit payable at retirement or termination is determined, based on age, service, sex, compensation, and the interest rate assumed to be earned in the future (7.00%). The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of their terminating with a service benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

2. The employer contributions required to support the benefits of the Plan are determined following a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.

3. The normal cost contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each participant during the entire period of his anticipated covered service (from hire), would be required in addition to the contributions of the participant to meet the cost of all benefits payable on their behalf.

4. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. In cases of surplus, this amount is amortized over 30 years. In cases of unfunded liability, this amount is amortized over a period such that the amortization provides for at least the interest accruing on the unfunded liability during the year. It is assumed that payments are made monthly throughout the year.

III. Actuarial Value of Assets

Effective January 1, 2013, the actuarial value of assets is equal to the market value of assets less a five-year phase in of the excess/(shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual earnings and expected earnings each year, and recognizes the cumulative excess return (or shortfall) over at a minimum rate of 20% per year. The speed of the recognition will increase if the Plan continues to be in the same net deferred position (net gain or net loss) from one year to the next. This is intended to ensure the smoothed value of assets will converge towards the market value in a reasonable amount of time. In addition, a gain or loss that is in the opposite direction of the current net position will be immediately recognized.

Expected earnings are determined using the assumed investment return rate and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. In future years, the returns will be net of investment expenses only.

IV. Actuarial Assumptions

The current assumptions were adopted by the Board in 2022 for first use in the actuarial valuation as of January 1, 2023, following a regularly scheduled experience study. The rationale for all of the current assumptions is included in that report, dated June 20, 2022.

A. Economic Assumptions

1. Investment return: 7.00% per annum, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% real rate of return. This rate represents the assumed return, net of all investment expenses.

2. Salary increase rate: Inflation rate of 2.50%, plus productivity component of 1.75%, plus step-rate/ promotional component as shown on the following page:

Years of Service	Annual Step-rate/ Promotional Rate	Total Annual Rate of Increase Including 2.50% Inflation Component and 1.75% Productivity Component
(1)	(2)	(4)
1	7.50%	11.75%
2	7.50%	11.75%
3	7.00%	11.25%
4	6.50%	10.75%
5	3.75%	8.00%
6	1.75%	6.00%
7	1.75%	6.00%
8	1.25%	5.50%
9	1.25%	5.50%
10	1.00%	5.25%
11	1.00%	5.25%
12	0.75%	5.00%
13	0.75%	5.00%
14	0.50%	4.75%
15	0.00%	4.25%

Salary increases are assumed to occur once a year, on January 1. Therefore, the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, annualized if necessary, and then increased by the salary increase assumption.

3. Payroll growth rate: In the amortization of surplus assets and funding projections, payroll is assumed to increase 3.00% per year. This increase rate is primarily due to the effect of inflation on salaries, with no allowance for future membership growth.

B. Demographic Assumptions

1. Healthy retirees and beneficiaries: Healthy retirees and beneficiaries: Pub-2010 Safety Healthy Annuitant Mortality Tables for males and females, amount-weighted, projected with the ultimate values of the MP-2020 projection scale.

	Annual Rate per 1,000 Members				
Attained Age in 2024	Males	Females	Attained Age in 2024 (cont.)	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)
50	1.59	1.23	70	13.17	11.16
55	2.53	2.13	75	23.97	19.46
60	4.20	3.69	80	43.71	33.94
65	7.33	6.40	85	80.83	60.54

The following table provides the life expectancy in years for an individual age 55 at retirement in a given year based on the assumption with full generational projection:

	Year of Retirement			
Gender	2024	2029	2034	2039
Male	31.3	31.7	32.1	32.5
Female	33.2	33.6	34.0	34.4

2. Mortality rates (active members) – Pub-2010 Safety Healthy Employee Mortality Tables for males and females, amount-weighted, projected with the MP-2020 Ultimate projection scale, 60% multiplier for off-duty mortality. Increased by 0.00015 for on-duty related Fire and Police experience. Sample rates are shown below:

	Annual Rate per 1,000 Members				
Attained Age in 2024	Males	Females	Attained Age in 2024 (cont.)	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)
20	0.35	0.23	40	0.44	0.39
25	0.33	0.25	45	0.56	0.48
30	0.35	0.28	50	0.75	0.60
35	0.38	0.33	55	1.02	0.76

3. Disability rates: Sample rates are shown below by age and disability type.

	Annual Rate per 1,000 Members	
Age	Occupational Disability Rates	Total Disability Rates
(1)	(2)	(3)
25	0.48	0.02
30	2.26	0.17
35	3.05	0.34
40	4.48	0.52
45	5.53	0.72
50	8.22	0.94
55	11.56	1.17

Disability rates are set to zero at eligibility for normal retirement.

4. Termination rates (for causes other than death, disability or retirement): Termination rates are based on service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown:

	Annual Rate per 1,000 Members				
Service	Rates	Service (cont.)	Rates	Service (cont.)	Rates
0	91.9	9	25.8	18	12.3
1	70.4	10	22.9	19	11.7
2	62.2	11	20.6	20	11.2
3	54.9	12	18.6	21	10.6
4	48.3	13	17.0	22	9.8
5	42.5	14	15.6	23	9.0
6	37.4	15	14.5	24	7.9
7	33.0	16	13.7	25	6.6
8	29.1	17	12.9	26	5.1

For police members, these rates are multiplied by 1.25. For fire members, these rates are multiplied by 0.83.

5. Retirement rates:

Age-Based Retirement rates, for members with more than 25 years of service

Age	Annual Rate per 100 Members
55	60
56-61	45
62	100

The rates above apply to members first meeting normal retirement eligibility at age 55 or later. For those that meet the Rule of 80 prior to age 55, rates from eligibility age to age 55 were as follows:

- First eligibility: (Age-50) x 10% + 10%
- After first eligibility but before age 55: 45% - 5% x (55-Age)
- Age 55: 45%

Service-Based Retirement rates*

Service	Annual Rate per 100 Members
5-14	8
15	9
16	9
17	10
18	11
19	12
20	13
21	15
22	20
23-24	25

*Rates first applied at age 55; 100 percent retirement assumed at age 70.

C. Other Assumptions

1. Administrative expenses: An explicit administrative expense equal to the prior year actual expenses.

2. Covered payroll projected for the calendar year following the valuation date (used in determining the contribution rate necessary to amortize the unfunded liability) is equal to actual pay that was paid during the calendar year preceeding the valuation date for members active at any time during that period increased by the payroll growth rate assumption.

3. Percent married: 100% of employees are assumed to be married or in a civil union.

4. Age difference: Male members are assumed to be two years older than their spouses, and female members are assumed to be two years younger than their spouses.

5. Post-retirement benefit adjustments: 0%.

6. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.

7. 10% of members who become occupationally disabled after the age of 50 will transfer back to the Statewide Retirement Plan at age 55. No other assumption is made for recoveries once disabled.

8. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

9. No surviving spouse will remarry and there will be no children's benefit.

10. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

11. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

12. Decrement timing: Decrements of all types are assumed to occur mid-year.

13. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

14. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

15. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

16. Benefit Service: All members are assumed to accrue 1 year of service each year. Exact fractional service is used to determine the amount of benefit payable.

17. Inactive Population: All members included in the inactive non-vested population with at least 10 years of service are valued using two times member contributions.

D. Participant Data

Participant data was supplied on electronic files in the form of spreadsheets. There were separate tabs for (i) active and non-vested inactive members, and (ii) members and beneficiaries receiving benefits or vested inactives.

The data for active members included birthdate, sex, service, salary and employee contribution account balance. For retired members and beneficiaries, the data included date of birth, sex, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and a form of payment code.

Salary supplied for the current year was based on the earnings for the year preceding the valuation date adjusted for service accrued during the year. In cases where the earnings for the year two years prior to the valuation date was higher, this higher amount was used. This salary was adjusted by the salary increase rate for one year.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

E. <u>Changes to the assumptions:</u>

There were no changes to the assumptions since the prior valuation.

SUMMARY OF BENEFIT PROVISIONS

Plan Description

The Fire & Police Pension Association Defined Benefit System – Statewide Retirement Plan ("Plan") is a cost-sharing multiple-employer defined benefit pension plan. The Plan covers substantially all full-time employees of participating fire or police departments in Colorado hired on or after April 8, 1978, provided that they are not already covered by a statutorily exempt plan. The Statewide Defined Benefit Plan was established in 1980 pursuant to Colorado Revised Statutes. The Statewide Hybrid Plan was established January 1, 2004 pursuant to Colorado Revised Statutes. HB 22-1034 combined the assets and liabilities of the former Statewide Defined Benefit Plan and the Statewide Hybrid Plan to form the Statewide Retirement Plan. The combined membership now participates under one of four benefit "components":

- Defined Benefit Component
- Hybrid Defined Benefit Component
- Money Purchase Component
- Social Security Component

Members in the Money Purchase Component may convert their money purchase balance to an annuity at retirement but are not otherwise a part of the defined benefit program. Members covered under the defined benefit components may also participate in the Money Purchase Component. For the Money Purchase Component, Members have the option of choosing among various investment options offered by an outside investment manager. The Plan assets for the defined benefit components are included in the Fire & Police Members' Benefit Investment Fund Long-Term Pool and Plan assets associated with the Money Purchase Component and the Deferred Retirement Option Plan "DROP" are included in the Fire & Police Members' Self-Directed Investment Fund.

Employers once had the option to elect to withdraw from the Plan, but a change in state statutes permitted no further withdrawals after January 1, 1988, unless the Employer elects into and is determined to be eligible to participate in the Statewide Money Purchase Plan. In 2003, legislation was enacted to allow departments who cover their firefighters and police officers in money purchase plans to elect coverage under the FPPA Defined Benefit System.

As of August 5, 2003, the Plan may include clerical and other personnel from fire districts whose services are auxiliary to fire protection. As of January 1, 2020, Colorado police and sheriff departments who participate in Social Security have the option of affiliating for coverage under the Defined Benefit System and the Statewide Death and Disability Plan.

Plan Year

A twelve-month period ending December 31.

Members Included

Members included are active, full-time salaried employees of a participating municipality, fire protection district, fire authority, or county improvement district normally serving at least 1,600 hours in a calendar year and whose duties are directly involved with the provision of police or fire protection. As of August 5, 2003, the Plan may also include clerical and other personnel employed by a fire protection district, fire authority, or a county improvement district.

Also included are employees of any Employer that covers Members under the federal Social Security Act or any county that chooses to affiliate with the Fire & Police Pension Association and includes all personnel employed by a sheriff expected to work 1,600 hours or more in a calendar year who are directly involved with the provision of law enforcement or fire protection as certified by the county.

Compensation Considered (Base Salary)

Base Salary, also known as Pensionable Earnings, means the total base rate of pay including Member Contributions to the Statewide Retirement Plan or Statewide Money Purchase Plan which are "picked up" by the Employer:

1) And shall also include longevity pay, sick leave pay taken in the normal course of employment, vacation leave pay taken in the normal course of employment, shift differential, and mandatory overtime that is part of the Member's fixed, periodic compensation.

2) Accumulated vacation leave pay will also be included if a Member completes his/her service requirement for purposes of Normal retirement while exhausting accumulated vacation leave.

3) In the event an Employer has established or does establish a Deferred Compensation Plan, the amount of the Member's salary that is deferred shall be included in the Member's Base Salary.

4) Any amounts voluntarily contributed to an Internal Revenue Code Section 125 "Cafeteria Plan" shall be included in the Member's Base Salary.

5) Base Salary shall not include overtime pay (except as noted in the preceding sentence), step-up pay or other pay for temporarily acting in a higher rank, uniform allowances, accumulated sick leave pay, accumulated vacation leave pay (except as noted in Section 2) above), and other forms of extra pay (including Member Contributions which are paid by the Employer and not deducted from the Member's salary).

Contribution Rates

Contribution rates for this Plan are set by state statute and can also be amended by the Board after election of Members and Employers.

Members of the Defined Benefit Component contribute at the rate of 12 percent of Base Salary. Legislation passed in 2020 to increase historical employer rates of 8 percent. This legislation schedule increases of 0.5 percent per year over 10 years from 2021 to 2030 to a total of 13 percent of Base Salary. The total combined contribution rate will be 25% of Base Salary in 2030.

Members of the Social Security Component contribute at the rate of 6 percent of Base Salary. Legislation passed in 2020 to increase historical employer rates of 4 percent. This legislation schedule increases of 0.25 percent per year over 10 years from 2021 to 2030 to a total of 6.5 percent of Base Salary. The total combined contribution rate will be 12.5% of Base Salary in 2030.

Members of the Hybrid Defined Benefit Component and their employers have historically contributed at a minimum rate of 8 percent of Base Salary. Legislation passed in 2022 which increases both member and employer rates 0.125 percent per year over eight years from 2023 to 2030 to a total of 9.0 percent of Base Salary. The total combined minimum contribution rate will be 18.0% of Base Salary in 2030.

The amount of the Hybrid Defined Benefit Component allocated to the Defined Benefit assets is set annually by the Board of Directors. Excess contributions fund the Money Purchase Component of the Plan. Current policy is to proportionally allocate contributions to the Defined Benefit assets based on the current Defined Benefit Component contributions, reflecting the relative benefit levels of the two components. Details regarding this approach are included in Table 4.

Members and their employers may contribute above the statutory minimums. Any excess contributions are allocated to the Money Purchase Component.

Contributions from Members and Employers of plans reentering the system are established by resolution and approved by the Board of Directors. The Board has determined that the continuing rate of contribution for departments that completed the reentry process prior to 2021 will be 0.2 percent of Base Salary. For departments that complete the reentry process on or after January 1, 2021, the continuing rate of contribution will be set at 1.9 percent of Base Salary and will be reevaluated after two years of employer specific experience, at which point, the rate may stay the same or may be decreased.

Defined Benefit Component – Minimum Contribution Rate Implementation Schedule

Effective Date	Member Contribution Rate	Employer Contribution Rate	Total Combined Contribution Rate
1/1/2024	12.0%	10.0%	22.0%
1/1/2025	12.0%	10.5%	22.5%
1/1/2026	12.0%	11.0%	23.0%
1/1/2027	12.0%	11.5%	23.5%
1/1/2028	12.0%	12.0%	24.0%
1/1/2029	12.0%	12.5%	24.5%
1/1/2030	12.0%	13.0%	25.0%
Beyond	12.0%	13.0%	25.0%

Social Security Component – Minimum Contribution Rate Implementation Schedule

Effective Date	Member Contribution Rate	Employer Contribution Rate	Total Combined Contribution Rate
1/1/2024	6.00%	5.00%	11.00%
1/1/2025	6.00%	5.25%	11.25%
1/1/2026	6.00%	5.50%	11.50%
1/1/2027	6.00%	5.75%	11.75%
1/1/2028	6.00%	6.00%	12.00%
1/1/2029	6.00%	6.25%	12.25%
1/1/2030	6.00%	6.50%	12.50%
Beyond	6.00%	6.50%	12.50%

Hybrid Defined Benefit Component – Minimum Contribution Rate Implementation Schedule (prior to money purchase allocation)

Effective Date	Member Contribution Rate	Employer Contribution Rate	Total Combined Contribution Rate
1/1/2024	8.250%	8.250%	16.50%
1/1/2025	8.375%	8.375%	16.75%
1/1/2026	8.500%	8.500%	17.00%
1/1/2027	8.625%	8.625%	17.25%
1/1/2028	8.750%	8.750%	17.50%
1/1/2029	8.875%	8.875%	17.75%
1/1/2030	9.000%	9.000%	18.00%
Beyond	9.000%	9.000%	18.00%

Highest Average Salaries (HAS)

HAS is the average of the Member's highest three annual Base Salaries.

Normal Retirement Date

A Member's Normal Retirement shall be the date on which the Member has completed at least 25 years of credited service and has attained the age of 55. Normal Retirement also includes the Rule of 80 (age plus service must total at least 80, with a minimum age of 50).

Normal Retirement Benefit

Defined Benefit Component:
The annual Normal Retirement Benefit shall be 2 percent of the average of the Member's highest three years Base Salary for each year of credited service up to ten years plus 2.5 percent for each year thereafter.

Hybrid Benefit Component:
The annual Normal Retirement Benefit shall be 1.5 percent of the average of the Member's highest three years Base Salary for each year of credited service. Benefits associated with service earned prior to January 1, 2023 shall be based on 1.9 percent of the average of the Member's highest three years Base Salary for each year of credited service.

Social Security Component:
The benefit for Members of affiliated social security employers will be reduced by the amount of social security income the Member receives annually, calculated as if the social security benefit started as of age 62 for benefits prior to 2007. Beginning January 1, 2007, Members of affiliated social security employers who participate in the Social Security Component shall be 1 percent of the average of the Member's highest three years Base Salary for each year of credited service up to ten years plus 1.25 percent for each year thereafter.

Benefits are paid as a monthly life annuity. Other forms of payment are available.

Early Retirement Benefit

A Member shall be eligible for an Early Retirement Benefit after completion of 30 years of service or attainment of age 50 with at least five years of credited service. The Early Retirement Benefit shall be the Normal Retirement Benefit reduced on an actuarially equivalent basis.

Benefits are paid as a monthly life annuity. Other forms of payment are available.

Terminated Vested Benefit

A Member who terminates with at least five years of service is vested. A vested Member who does not withdraw their contributions from the Plan is eligible for a vested benefit, payable at age 55, equivalent to the Normal Retirement Benefit.

Deferred Retirement Benefit

Members who qualify for a Normal or Vested Retirement may defer the receipt of their defined benefit pension to as late as age 65 and receive the actuarial equivalent of the benefit.

Severance Benefit

All Members leaving covered employment with less than five years of service credit are eligible. Optionally, vested Members (those with five or more years of service credit) may withdraw their accumulated contributions in lieu of the future vested benefits otherwise due.

The Member receives a lump-sum payment equal to the sum of their Member contributions, plus 5 percent, credited as interest.

Death Benefit of Active Members

Death must have occurred while an active or an inactive, non-retired Member.

Upon the death of a non-vested active, unmarried Member with no spouse, no dependent children, and no beneficiary, a refund of the Member's contributions is paid to the Member's estate. If the Member was vested, single and had no dependent children and was not eligible for a Normal or Early retirement, a joint and survivor annuity may be paid to the beneficiary if greater than the refund. The benefit for Members of affiliated social security employers earned prior to January 1, 2007 will be reduced by the amount of social security income the Member receives annually.

Survivors (spouse or dependent children) of active Members who die prior to retirement eligibility may be covered by the benefits provided by the Statewide Death & Disability Plan. For purposes of the Statewide Death & Disability Plan benefits, a spouse includes a partner in a civil union.

Survivors of an active or inactive Member who is eligible for a Normal or Early retirement and who dies after leaving active service but before electing a payment option or receiving the first pension payment is eligible to receive a benefit according to payment Option 1 (Joint and 100% Survivor benefits).

Forms of Payment

The Plan provides six choices for receipt of the retirement benefit.

Normal Option – The retiree receives a monthly pension benefit for their life. No monthly benefits are paid to a beneficiary following the retiree's death. However, if at the time of the Member's death, they have not recouped in pension payments the amount of the Member contributions (including all funds paid in to purchase service credit), the remaining funds plus 5% as interest would be paid to the Member's beneficiary or estate as a lump sum.

Option 1 (Joint and 100% Survivor) - Under Option 1, an actuarially equivalent Normal, Deferred, Early or Vested Retirement pension will be paid from the effective date of the retiree's retirement or later in the case of a deferred retirement. The actuarially equivalent monthly pension will continue for the life of the retiree. Upon the death of the retiree, the same monthly pension will be paid to the retiree's designated beneficiary for life.

Option 2 (Joint and 50% Survivor) - Under Option 2, an actuarially equivalent Normal, Deferred, Early or Vested Retirement pension will be paid from the effective date of the retiree's retirement or later in the case of a deferred retirement. The actuarially equivalent monthly pension will continue for the life of the retiree. Upon the death of the retiree, 50% of the same monthly pension will be paid to the retiree's designated beneficiary for life.

Option 3 (Joint and 50% Last Survivor) - Under Option 3, an actuarially equivalent Normal, Deferred, Early or Vested Retirement monthly pension will be shared by the retiree and their named beneficiary. Upon the death of either the retiree or the designated beneficiary, 50% of the same monthly pension will be paid to the survivor for life.

Option 4 (Joint and 100% Survivor with "Pop Up") – Under Option 4, an actuarially equivalent Normal, Deferred, Early or Vested Retirement pension will be paid from the effective date of the retiree's retirement or later in the case of a deferred retirement. The actuarially equivalent monthly pension will continue for the life of the retiree. Upon the death of the retiree, the same monthly pension will be paid to the retiree's designated beneficiary for life. However, if the designated beneficiary dies before the retiree, the monthly pension benefit "pops-up" or reverts to the Normal Option effective with the first day of the month following the date of the death of the beneficiary.

Option 5 (Joint and 50% Survivor with "Pop Up") – Under Option 5, an actuarially equivalent Normal, Deferred, Early or Vested Retirement pension will be paid from the effective date of the retiree's retirement or later in the case of a deferred retirement. The actuarially equivalent monthly pension will continue for the life of the retiree. Upon the death of the retiree, 50 percent of the same monthly pension benefit will be paid to the retiree's beneficiary for life. However, if the beneficiary dies before the retiree, the monthly pension benefit "pops-up" or reverts to the Normal Option effective with the first day of the month following the date of the death of the beneficiary.

Survivor benefits are paid according to the payment option elected by the Member at the time of retirement or entry into DROP.

Actuarial equivalence is based on tables adopted by the Board of Directors.

Cost-of-Living Adjustments (COLAs) for Benefits in Pay Status

Benefits to Members and beneficiaries may be increased annually on October 1. The amount is based on the Fire & Police Pension Association Board of Directors discretion and can range from 0 percent to the greater of 3 percent or the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). COLAs may begin once the retired Member has been receiving retirement benefits for at least 12 calendar months prior to October 1.

Deferred Retirement Option Plan (DROP)

A Member may elect to participate in the DROP after reaching eligibility for Normal Retirement, Early Retirement, or Vested Retirement and age 50. A Member can continue to work while participating in the DROP, but must terminate employment within five years of entry into the DROP. The Member's retirement benefit is determined at the time of entry into the DROP. The monthly payments that begin at entry into the DROP are accumulated in a DROP account until the Member terminates service, at which time the DROP accumulated benefits can be paid as periodic installments, a lump sum, or if desired a Member may elect to convert all, or a portion, of the DROP to a lifetime monthly benefit with survivor benefits. While participating in DROP, the Member continues to make pension contributions, which are credited to the DROP.

Investment Pool

The Statewide Retirement Plan is invested in the Long-Term Pool is designed primarily for open plans with a longer time horizon, higher risk tolerance, and lower liquidity needs. The investment return assumption is 7.00%.

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that results from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution rates shown in this report may be considered as a minimum contribution rate that complies with the Board's funding policy and state statute. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

With each valuation there is a presentation of the summary of findings to the Board. Included are various discussions and scenarios of potential risks.

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	2024	2023	2022	2021
Ratio of the market value of assets to total payroll	4.2	4.1	4.9	4.5
Ratio of actuarial accrued liability to payroll	4.1	4.1	4.0	4.0
Ratio of actives to retirees and beneficiaries	3.8	4.0	4.2	4.8
Net cash flow as a percentage of market value of assets[1]	1.7%	2.3%	-1.3%	1.9%
Duration of the actuarial accrued liability	13.8	13.9	13.9	13.5

[1]Negative net cash flows during 2021 are reflective of the transfer of assets to the Members' Self-Directed Investment Fund. Absent this transfer, net cash flow as a percentage of market value of assets would have been 1.8%.

*Amounts for 2022 and 2021 reflect the results of the former Statewide Defined Benefit Plan.

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 4.0 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 5.0 times the payroll, a change in liability 2% other than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

The relationship between the actuarial accrued liability and payroll is a useful indicator of the potential longer-term asset-related volatility once the current UAAL is fully amortized. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Net Cash Flow as a Percentage of Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Duration of Liabilities

The duration of the present value of future benefits may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the present value of future benefits would increase approximately 10% if the assumed rate of return were lowered 1%. This is also an approximation of the discount-weighted average time horizon of the liability.

RISKS MEASURES – LOW DEFAULT RISK OBLIGATION MEASURE

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> "The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan.** The calculation and disclosure of this additional measure is **not intended to suggest that this is the "right" liability measure** for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.**"

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the Statewide Retirement Plan (SRP) is to finance each member's retirement benefits over the period from the member's date of hire until the member's projected date of retirement (entry age actuarial cost method) as a level percentage of payroll. To fulfill this objective, the discount rate that is used to value the accrued liabilities of the SRP is set equal to the expected return on the Fund's diversified portfolio of assets (referred to sometimes as the investment return assumption). For the SRP, the investment return assumption is 7.00%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the entry age actuarial cost method and discount rates based upon the intermediate rate from the FTSE Pension Discount Curve and Liability Index published by the Society of Actuaries. This rate is 4.80% as of December 31, 2023. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the cost to mitigate investment risk in the Plan's portfolio.

Valuation Accrued Liabilities	LDROM
$4,192,497,188	$5,635,464,692