

Austin Police Retirement System

Annual Actuarial Valuation - Funding

As of December 31, 2023





June 21, 2024

Board of Trustees
Austin Police Retirement System
2520 South IH 35, Suite 100
Austin, TX 78704

Re: Actuarial Valuation for Funding Purposes as of December 31, 2023

Members of the Board:

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Austin Police Retirement System (APRS) as of December 31, 2023. This report was prepared at the request of the Board and is intended for use by APRS staff and those designated or approved by the Board. This report may be provided to parties other than APRS only in its entirety and only with the permission of the Board.

Actuarial Valuation

The primary purposes of the actuarial valuation report are to determine the actuarially determined contribution (ADC) rates for the City and members, describe the current financial condition of APRS, analyze changes in the condition of APRS, and provide various summaries of the data.

Plan Provisions

There were no changes to the plan provisions during the past year. The current plan provisions are outlined in Section E of this report.

Risk Sharing Valuation

This valuation includes special calculations referred to as the "Risk Sharing Valuation" in statute. There is a section in the report (Section RSV) that contains information which is required as part of this valuation. Page RSV-1 contains a discussion of the RSV exhibits. Page RSV-2 contains the contribution corridor for the City's ADC. The corridor mid-point is the minimum City Contribution Rate until APRS is 90% funded. Page RSV-3 shows the calculation of the ADC for the current valuation. This calculated rate will be the City Contribution Rate if it exceeds the corridor mid-point and is less than the corridor maximum. The rate will be contributed in the calendar year that begins one year after the valuation date. Page RSV-4 shows the remaining liability layers and the corresponding amortization payment for the liability layers created after the establishment of the Legacy Liability. Page RSV-5 shows a projection of the Legacy Liability and the schedule of payments to pay-off the Legacy Liability over a 30-year period beginning in 2022.

Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees effective with the December 31, 2023 actuarial valuation. The actuarial assumptions used for the December 31, 2023 actuarial valuation are based on an experience review for the five-year period from January 1, 2018 through December 31, 2022. All actuarial assumptions used in this report are reasonable for the purposes of this actuarial valuation. Furthermore, the assumptions and methods used in this valuation follow the guidance in the applicable Actuarial Standards of Practice and are expected to have no significant bias. The current actuarial assumptions and methods are outlined in Section F of this report.

Data

The valuation was based upon information as of December 31, 2023 furnished by APRS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by APRS staff.

Certification

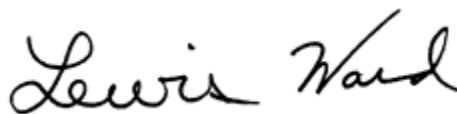
All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuaries and consultants are independent of the plan sponsor. Mr. Wood is an Associate of the Society of Actuaries, a Fellow of the Conference of Consulting Actuaries, and a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned is experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Paul Wood ASA, FCA, MAAA
Senior Consultant



Lewis Ward
Consultant



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SECTION RSV

RISK SHARING VALUATION

RSVS Discussion

The purpose of the Risk Sharing Valuation Study (RSVS) is to determine the City Contribution Rate for the APRS fiscal year beginning one year after the valuation date.

The exhibit on page RSV-2 shows the RSVS Corridor which was created from the Initial RSVS. Column 3 shows the Corridor Midpoint for each fiscal year. Columns 2 and 4 show the Corridor Minimum and Corridor Maximum, respectively. Column 5 shows the actual City Contribution Rate for the applicable fiscal year. As shown in the table, the actual City Contribution Rate for FY 2025 is 10.78% of pay.

The exhibit on page RSV-3 shows the individual pieces and total calculated City Contribution Rate. As shown in the table, the calculated City Contribution Rate from this valuation is 10.78% of pay. Because the System is less than 90% funded, the actual City Contribution Rate will be set equal to the greater of the calculated City Contribution Rate and the Corridor Midpoint of 9.33% of pay.

The exhibit on page RSV-4 shows the Liability (Gain)/Loss Layers established each year. Columns 2 and 3 show the original liability layer and any remaining liability layer, respectively. Column 4 is the payment on that particular layer for the fiscal year beginning one year after the valuation date. The payment is determined using a level percentage of payroll and the remaining amortization period as shown in column 5. The payments reflect the one-year delay between the determination of the payment and the beginning of the fiscal year in which the payment is made. The dollar amounts of the payments are summed and then converted to a percentage of payroll based on the projected payroll for the fiscal year beginning one year after the valuation date. As shown in the table, the sum of the current year's payments is positive (after being negative for the prior two years), which means it is an addition to the contribution rate. The sum of the amortization payments is determined to be 1.19% of projected payroll.

The exhibit on page RSV-5 is the Legacy Liability schedule. This table shows the amortization schedule of the Legacy Liability for each of the 30 years over which it is scheduled to be paid. Column 2 shows the remaining Legacy Liability as of that measurement date while Column 3 shows the payment on the Legacy Liability for the fiscal year in which it is contributed.

The unfunded actuarial accrued liability is equal to the sum of the Remaining Layer column on the Liability Gain/Loss Layers exhibit and the Remaining Legacy Liability column as of the valuation date. This illustrates that there is a schedule to pay off every dollar of the current unfunded actuarial accrued liability. Thus, the calculated ADC under the Board's funding policy can be considered a "Reasonable Actuarially Determined Contribution" as required by the Actuarial Standards of Practice.



Actuarially Determined Contribution Corridor

Fiscal Year Ending	Corridor Minimum	Corridor Midpoint	Corridor Maximum	Actual City Contribution Rate
(1)	(2)	(3)	(4)	(5)
December 31, 2022	5.10%	10.10%	15.10%	10.10%
December 31, 2023	4.85%	9.85%	14.85%	9.85%
December 31, 2024	4.59%	9.59%	14.59%	9.59%
December 31, 2025	4.33%	9.33%	14.33%	10.78%
December 31, 2026	4.08%	9.08%	14.08%	
December 31, 2027	3.83%	8.83%	13.83%	
December 31, 2028	3.58%	8.58%	13.58%	
December 31, 2029	3.32%	8.32%	13.32%	
December 31, 2030	3.05%	8.05%	13.05%	
December 31, 2031	2.79%	7.79%	12.79%	
December 31, 2032	2.53%	7.53%	12.53%	
December 31, 2033	2.27%	7.27%	12.27%	
December 31, 2034	2.02%	7.02%	12.02%	
December 31, 2035	1.75%	6.75%	11.75%	
December 31, 2036	1.47%	6.47%	11.47%	
December 31, 2037	1.21%	6.21%	11.21%	
December 31, 2038	0.94%	5.94%	10.94%	
December 31, 2039	0.67%	5.67%	10.67%	
December 31, 2040	0.39%	5.39%	10.39%	
December 31, 2041	0.12%	5.12%	10.12%	
December 31, 2042	-0.13%*	4.87%	9.87%	
December 31, 2043	-0.36%*	4.64%	9.64%	
December 31, 2044	-0.57%*	4.43%	9.43%	
December 31, 2045	-0.77%*	4.23%	9.23%	
December 31, 2046	-0.92%*	4.08%	9.08%	
December 31, 2047	-1.03%*	3.97%	8.97%	
December 31, 2048	-1.13%*	3.87%	8.87%	
December 31, 2049	-1.20%*	3.80%	8.80%	
December 31, 2050	-1.25%*	3.75%	8.75%	
December 31, 2051	-1.29%*	3.71%	8.71%	

* The City Contribution Rate cannot go below zero. In other words, a negative City Contribution Rate will not result in a reduction in the Legacy Liability Payment.



Calculated Actuarially Determined City Contribution Rate

Fiscal Year Ending	Employer Normal Cost ¹	Amortization Payment	Calculated City Contribution Rate
(1)	(2)	(3)	(4)
December 31, 2022	10.10%	0.00%	10.10%
December 31, 2023	9.89%	-0.81%	9.08%
December 31, 2024	9.59%	-0.48%	9.11%
December 31, 2025	9.59%	1.19%	10.78%

¹ Normal Cost for Actuarially Determined City Contribution Rate is projected from valuation date one year prior to the applicable fiscal year.

Risk Sharing Valuation - Liability (Gain)/Loss Layers

Valuation Date Base Established (1)	Original Layer (2)	Remaining Layer (3)	Payment for 2025 Fiscal Year ¹ (4)	Remaining Payments (5)
December 31, 2023	\$ 42,605,808	\$ 42,605,808	\$ 2,820,494	30
December 31, 2022	9,412,866	10,095,299	640,887	29
December 31, 2021	(21,593,325)	(23,437,184)	(1,512,063)	28
Total		\$ 29,263,923	\$ 1,949,319	
Projected Payroll for Fiscal Year +1			\$ 163,193,818	
Amortization Payments as % of Projected Pay			1.19%	
Single Equivalent Amortization Period from the Valuation Date ²			28.2	

¹ The first payment for each new layer will be made during the fiscal year beginning one year after the valuation date.

² The single equivalent amortization period includes all liability layers including the Legacy Liability.

Projection of Remaining Legacy Liability and Legacy Liability Payments

Fiscal Year Ending (1)	Remaining Legacy Liability (2)	Fiscal Year Payment (3)
December 31, 2020	\$ 637,738,287	\$ -
December 31, 2021	667,018,611	-
December 31, 2022	687,421,056	26,994,958
December 31, 2023	701,289,811	34,732,256
December 31, 2024	708,151,183	42,469,554
December 31, 2025	714,190,541	43,743,640
December 31, 2026	719,308,704	45,055,949
December 31, 2027	723,398,115	46,407,627
December 31, 2028	726,342,194	47,799,856
December 31, 2029	728,014,650	49,233,852
December 31, 2030	728,278,738	50,710,868
December 31, 2031	726,986,463	52,232,194
December 31, 2032	723,977,724	53,799,160
December 31, 2033	719,079,393	55,413,135
December 31, 2034	712,104,332	57,075,529
December 31, 2035	702,850,329	58,787,795
December 31, 2036	691,098,964	60,551,429
December 31, 2037	676,614,384	62,367,972
December 31, 2038	659,141,995	64,239,011
December 31, 2039	638,407,050	66,166,181
December 31, 2040	614,113,140	68,151,166
December 31, 2041	585,940,568	70,195,701
December 31, 2042	553,544,612	72,301,572
December 31, 2043	516,553,650	74,470,619
December 31, 2044	474,567,154	76,704,738
December 31, 2045	427,153,538	79,005,880
December 31, 2046	373,847,844	81,376,056
December 31, 2047	314,149,257	83,817,338
December 31, 2048	247,518,445	86,331,858
December 31, 2049	173,374,700	88,921,814
December 31, 2050	91,092,869	91,589,468
December 31, 2051	-	94,337,152



SECTION A

EXECUTIVE SUMMARY

Executive Summary

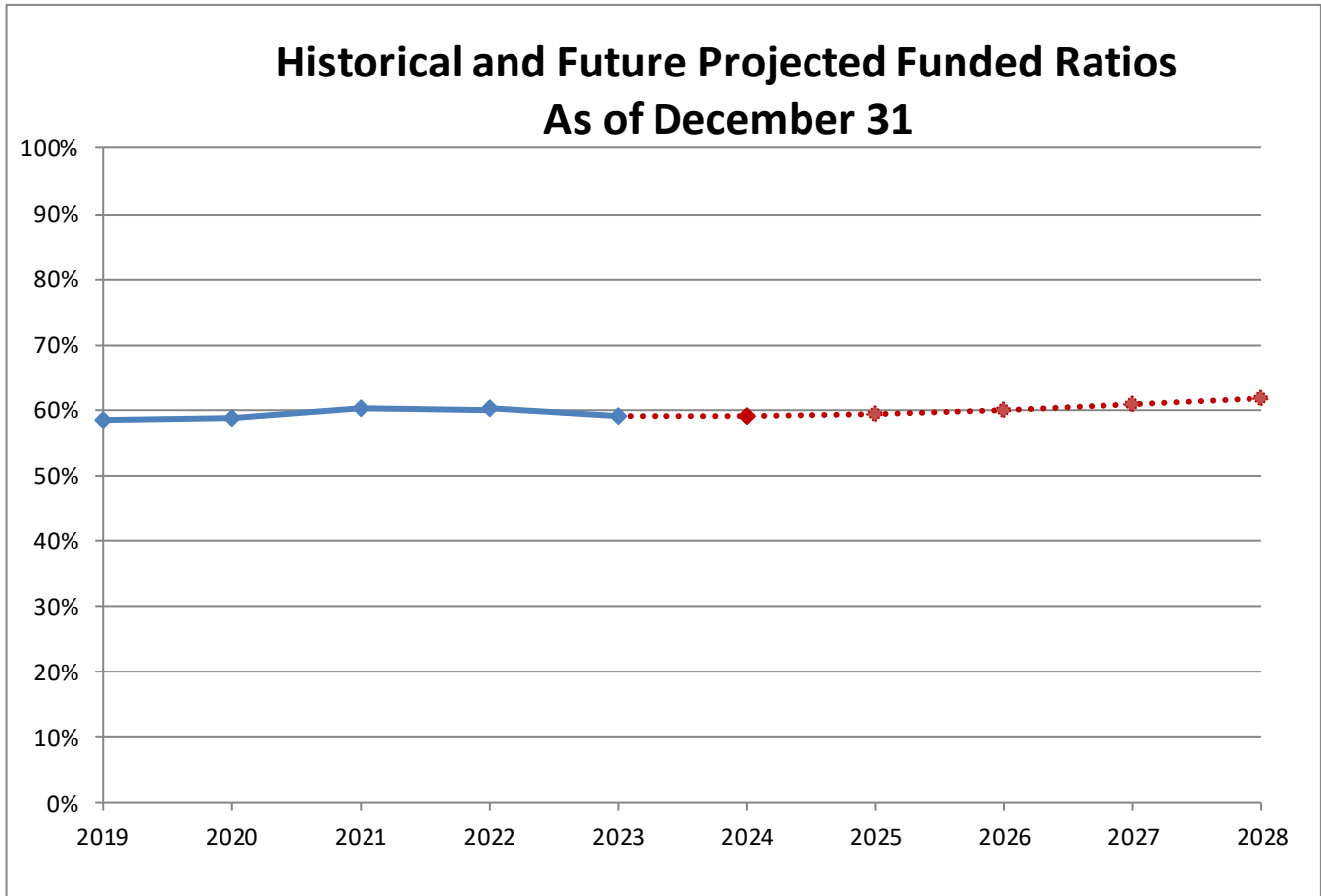
Item	December 31, 2023	December 31, 2022
Membership <ul style="list-style-type: none"> • Number of <ul style="list-style-type: none"> - Active members - Inactive, vested - Inactive, nonvested - Annuitants - Total • Annualized Payroll on Valuation Date 	1,551 72 84 1,371 3,078 \$ 155,330,225	1,633 61 96 1,258 3,048 \$ 157,279,666
Statutory member contribution rate for fiscal year following the valuation date	15.000%	15.000%
Estimated RSV Total City Contribution for Fiscal Year	<u>2025</u>	<u>2024</u>
<ul style="list-style-type: none"> • Estimated City Contribution Rate Payment • Legacy Liability Payment (City Contribution Amount) • Total • Contribution as % of Projected Payroll¹ 	\$ 17,592,294 43,743,640 \$ 61,335,934 37.58%	\$ 16,001,682 42,469,554 \$ 58,471,236 35.04%
Assets <ul style="list-style-type: none"> • Market value (MVA) • Actuarial value (AVA) • Return on market value • Return on actuarial value 	\$ 1,014,902,702 \$ 1,047,377,832 11.5% 5.6%	\$ 933,084,477 \$ 1,015,080,603 -11.9% 5.9%
Actuarial Information on AVA (smoothed) <ul style="list-style-type: none"> • Normal cost %² • Total normal cost • Actuarial accrued liability • Unfunded actuarial accrued liability (UAAL) • Funded ratio 	24.782% \$ 39,456,285 \$ 1,777,931,566 \$ 730,553,734 58.9%	24.846% \$ 40,250,037 \$ 1,688,755,684 \$ 673,675,081 60.1%
Actuarial Information on MVA <ul style="list-style-type: none"> • Unfunded actuarial accrued liability (UAAL) • Funded ratio 	\$ 763,028,864 57.1%	\$ 755,671,207 55.3%

Notes:

¹ Based on projected payroll determined as of the valuation date but beginning one year after valuation date.

² Includes normal cost associated with the Retiree Death Benefit Fund and a load for assumed administrative expenses of the System.

The following chart illustrates the recent history and outlook of the funded status of APRS:



December 31,	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Funded Ratio	58.4%	58.6%	60.2%	60.1%	58.9%	59.1%	59.4%	59.8%	60.8%	61.8%
UAAL (millions)	\$607	\$638	\$645	\$674	\$731	\$750	\$769	\$785	\$789	\$790

The projections beyond 2023 are based on the same assumptions, methods and provisions used for the December 31, 2023 valuation. Additionally, the market value of assets is assumed to earn 7.25% per year.

Based on the new statutory contribution patterns, the new benefit provisions and the actuarial assumptions, APRS’s UAAL is projected to continue to increase the next several years due to negative amortization and the recognition of deferred investment losses. In consistent financial markets, the funded ratio is expected to improve once the deferred investment losses are recognized (or offset by future gains), until APRS is 100% funded.



SECTION B

DISCUSSION

Discussion

Introduction

The results of the December 31, 2023 actuarial valuation of the Austin Police Retirement System (APRS) are presented in this report.

The primary purposes of the actuarial valuation report are to determine the actuarially determined contribution rates for the City and members, describe the current financial condition of APRS, analyze changes in the condition of APRS, and provide various summaries of the data.

The City Contribution Rate determined by this valuation will begin one year after the valuation date. In addition to this actuarially determined rate, the City contributes a Legacy Liability payment as shown on page RSV - 5.

There was an unexpected increase in the unfunded actuarial liabilities due to plan experience of approximately \$28.7 million. The net unexpected increase in the unfunded actuarial accrued liability includes an asset experience loss of \$16.8 million and a liability experience loss of \$11.9 million. In addition, the actuarial assumptions were updated which increased the unfunded liabilities by an additional \$14.8 million.

The Retiree Death Benefit Fund was established in 2003 as a separate account within the system to advance fund and to pay the \$10,000 post-retirement lump sum death benefits for retirees. Table 11 outlines the portion of the City contribution rate that should be allocated to the Retiree Death Benefit Fund such that the Retiree Death Benefit Plan will be fully funded 12 years following December 31, 2023. With the exception of Table 11, the amounts outlined in this report represent the total assets and liabilities of APRS, inclusive of the Retiree Death Benefit Plan.

Assessment of Risk

Section D of this report, titled "Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions," outlines a series of risk measures that 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.

Actuarial Standards of Practice ASOP No. 4 was revised and requires a funding valuation to now disclose the liabilities of the plan using a Low Default Risk Obligation Measure (LDRM). A brief description of the measurement and the numerical values are located in this section.

Plan Provisions

There were no changes to the plan provisions since the prior valuation. The current plan provisions are outlined in Section E of this report.



Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees effective with the December 31, 2023 actuarial valuation. The current actuarial assumptions and methods are outlined in Section F of this report. The actuarial assumptions used are based on an experience review for the five-year period from January 1, 2018 through December 31, 2022, dated March 20, 2024. The actuarial assumptions used in this report are reasonable for the purposes of this valuation.

Funding Adequacy

The City contribution in calendar year 2024 is comprised of two pieces: 1) a Legacy Liability payment of \$42.5 million, and 2) and the City Contribution Rate of 9.59% of payroll (since the system is less than 90% funded, the City Contribution Rate is equal to the greater of the corridor midpoint of 9.59% and the actuarially determined contribution (ADC) rate of 9.11%). Members contribute 15.000% of payroll. This actuarial valuation determines the ADC for fiscal year 2025. As shown on page RSV-3, the calculated ADC is 10.78%. However, because the System is less than 90% funded, the rate is set to the greater of the calculated ADC and the corridor midpoint (see page RSV-2). The greater of these two numbers at this valuation is the calculated ADC of 10.78% of payroll. In addition, to this contribution, the City will make a Legacy Liability payment for calendar year 2025 of \$43.7 million.

The unfunded actuarial accrued liability (UAAL) of APRS increased from \$674 million as of December 31, 2022 to \$731 million as of December 31, 2023. The increase was more than expected due to the loss on the actuarial value of assets and a liability experience loss due to higher than expected salary increases. In addition, the adoption of new actuarial assumptions also increased the UAAL. The funded ratio of APRS—actuarial value of assets divided by the actuarial accrued liability—decreased from 60.1% to 58.9% as of December 31, 2023. The funded status is one of many metrics used to show trends and develop future expectations about the health of a retirement system. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.

System Assets

This report contains several tables that summarize key information with respect to the APRS assets.

The total market value of assets increased from \$933 million as of December 31, 2022 to \$1,015 million as of December 31, 2023. Table 5 reconciles the changes in the fund during the year. Total contributions increased from \$70.8 million to \$77.0 million.

Table 6 shows the development of the actuarial value of assets. The actuarial value of asset method generally recognizes the difference between the actual and expected market value of assets over a five-year period. The total actuarial value of assets is \$1,047 million, which is greater than the market value of assets of \$1,015 million. This indicates that there are currently deferred losses to be recognized in the future.

When measured on a market value, the approximate investment return net of investment-related expenses for the fiscal year ending December 31, 2023 was 11.5%. When measured on an actuarial value, the net



investment return was 5.6%, which is lower than the assumed return of 7.25%. APRS experienced a \$16.8 million actuarial asset loss over the past year. Table 7 shows a history of investment return rates. The APRS five-year average market return is 9.3% and the five-year average actuarial return is 7.4%.

Table 8 provides a history of the contributions paid into APRS and the administrative expenses and benefit payments that have been paid out of APRS. This table shows that APRS received less contributions than it paid out in administrative expenses and benefit payments, or -\$23.7 million (or -2.3% of assets) for the year ending December 31, 2023. Negative cashflow is expected for a pre-funded pension program. The entire reason for setting aside assets is to have the ability to use investment earnings to pay for benefits. If the cashflow was always going to be positive, there would be no reason to pre-fund the system.

All of the tables referenced in this discussion appear in Section C of this report.

Data

The valuation was based upon information as of December 31, 2023 furnished by APRS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by APRS staff. The tables in Section G show key census statistics for the various groups included in the valuation.

Sustainability

The passage of HB 4368 during the 2021 legislative session put in place a new lower tier of benefits which will slow the growth of APRS liabilities over the long-term, but more importantly the legislation changed the financing structure of APRS to a methodology that is intended to insure the long-term sustainability of APRS.

SECTION C

TABLES

Table 1
Comparison of Valuation Liabilities
(Inclusive of the Retiree Death Benefit Fund)

	<u>December 31, 2023</u>	<u>December 31, 2022</u>
1. Payroll		
a. Annualized Payroll on Valuation Date	\$ 155,330,225	\$ 157,279,666
b. Projected Contributory Payroll	159,213,481	161,998,056
2. Total Normal Cost Rate		
a. Gross normal cost rate	23.532%	23.946%
b. Administrative expenses	<u>1.250%</u>	<u>0.900%</u>
c. Total (Item 2a + Item 2b)	24.782%	24.846%
3. Actuarial Accrued Liability for Active and Active DROP Members		
a. Present value of future benefits for active members	\$ 987,307,534	\$ 1,019,802,335
b. Less: present value of future normal costs	<u>(317,086,565)</u>	<u>(339,471,408)</u>
c. Actuarial accrued liability	\$ 670,220,969	\$ 680,330,927
4. Total Actuarial Accrued Liability for:		
a. Retirees and beneficiaries	\$ 1,096,399,784	\$ 997,116,702
b. Inactive members	11,310,813	11,308,055
c. Active and Active DROP members (Item 3c)	<u>670,220,969</u>	<u>680,330,927</u>
d. Total	\$ 1,777,931,566	\$ 1,688,755,684
5. Actuarial Value of Assets	\$ 1,047,377,832	\$ 1,015,080,603
6. Unfunded Actuarial Accrued Liability (UAAL) (Item 4d - Item 5)	\$ 730,553,734	\$ 673,675,081
7. Funded Ratio	58.9%	60.1%

Table 2
Actuarial Present Value of Future Benefits
(Inclusive of the Retiree Death Benefit Fund)

	<u>December 31, 2023</u>	<u>December 31, 2022</u>
1. Active Members (not in DROP at the valuation date)		
a. Service Retirement	\$ 939,147,654	\$ 954,659,344
b. Disability Benefits	5,298,436	5,520,736
c. Death Before Retirement	5,264,640	6,174,029
d. Termination	<u>24,940,365</u>	<u>17,795,352</u>
e. Total	\$ 974,651,095	\$ 984,149,461
2. Active DROP Members	\$ 12,656,439	\$ 35,652,874
3. Inactive Members		
a. Vested Terminated	\$ 10,249,857	\$ 10,074,840
b. Non-Vested Terminated	<u>1,060,956</u>	<u>1,233,215</u>
c. Total	\$ 11,310,813	\$ 11,308,055
4. Annuitants		
a. Service Retirement	\$ 1,039,080,236	\$ 942,559,988
b. Disability Retirement	2,260,552	2,684,896
c. Beneficiaries and QDROs	<u>55,058,996</u>	<u>51,871,818</u>
d. Total	\$ 1,096,399,784	\$ 997,116,702
5. Total Actuarial Present Value of Future Benefits	\$ 2,095,018,131	\$ 2,028,227,092

Table 3
Analysis of Normal Cost
(Inclusive of the Retiree Death Benefit Fund)

	<u>December 31, 2023</u>	<u>December 31, 2022</u>
1. Gross Normal Cost Rate ¹		
a. Service Retirement	21.201%	22.249%
b. Disability Benefits	0.279%	0.290%
c. Death Before Retirement	0.183%	0.213%
d. Termination	1.869%	1.194%
e. Total	<u>23.532%</u>	<u>23.946%</u>
2. Administrative Expenses ²	1.250%	0.900%
3. Total Normal Cost	24.782%	24.846%
4. Less: Member Rate	15.000%	15.000%
5. Employer Normal Cost Rate	9.782%	9.846%

¹ Normal cost based on the census data as of the stated valuation date.

² Includes normal cost associated with the Retiree Death Benefit Fund and a load for assumed administrative expenses of the System.

Table 4
Historical Summary of Active Member Data

Valuation as of December 31 ¹ ,	Active Members		Covered Payroll		Average Salary		Average Age	Average Service
	Number ²	Percent Increase	\$ Amount (thousands)	Percent Increase	\$ Amount	Percent Increase		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2011	1,679		133,709		79,636		39.7	11.7
2012	1,709	1.8%	140,273	4.9%	82,079	3.1%	39.6	11.5
2013	1,732	1.3%	145,871	4.0%	84,221	2.6%	39.9	11.6
2014	1,777	2.6%	150,860	3.4%	84,896	0.8%	40.0	11.7
2015	1,761	-0.9%	151,855	0.7%	86,232	1.6%	40.1	11.1
2016	1,837	4.3%	158,761	4.5%	86,424	0.2%	39.8	10.8
2017	1,866	1.6%	162,491	2.3%	87,080	0.8%	40.3	11.7
2018	1,892	1.4%	166,565	2.5%	88,036	1.1%	40.5	12.0
2019	1,872	-1.1%	168,732	1.3%	90,135	2.4%	40.9	12.5
2020	1,775	-5.2%	164,962	-2.2%	92,936	3.1%	41.1	12.7
2021	1,673	-5.7%	157,820	-4.3%	94,334	1.5%	41.0	12.6
2022	1,633	-2.4%	157,280	-0.3%	96,313	2.1%	40.7	12.4
2023	1,551	-5.0%	155,330	-1.2%	100,148	4.0%	40.3	12.1

Notes:

¹ Information prior to December 31, 2017 is based on the information provided in the prior actuary's actuarial valuation reports

² Information for December 31, 2017 and later includes all active and active DROP members

Information prior to December 31, 2017 includes only active members not in DROP at the valuation date

Table 5

Reconciliation of Plan Net Assets

	Total	Pension	RDBF
1. Market value of assets at beginning of year	\$ 933,084,477	\$ 931,469,108	\$ 1,615,369
2. Revenue for the year			
a. Contributions for the year			
i. Member Contributions - Payroll	\$ 23,317,511	\$ 23,317,511	\$ 0
ii. Member Contributions - Service Credit Purchases	3,100,346	3,100,346	0
iii. City Contributions - Pension (Contribution Rate Payment)	15,198,624	15,198,624	0
iv. City Contributions - Pension (Legacy Liability Payment)	35,146,519	35,146,519	0
v. City Contributions - Retiree Death Benefit	198,574	0	198,574
vi. City Contributions - Proportionate Retirement	0	0	0
vii. Total	\$ 76,961,574	\$ 76,763,000	\$ 198,574
b. Net Investment income for the year	\$ 105,486,598	\$ 105,296,545	\$ 190,053
c. Total revenue	\$ 182,448,172	\$ 182,059,545	\$ 388,627
3. Disbursements for the year			
a. Retirement and disability benefits	\$ 86,600,696	\$ 86,600,696	\$ 0
b. Lump Sum DROP Distributions	1,924,504	1,924,504	0
c. Lump Sum PROP Distributions	7,326,259	7,326,259	0
d. Retiree Death Benefits	109,710	0	109,710
e. Refund of Member Contributions	2,215,272	2,215,272	0
f. Administrative expenses	2,453,506	2,453,506	0
g. Total disbursements	\$ 100,629,947	\$ 100,520,237	\$ 109,710
4. Increase in net assets (Item 2c - Item 3g)	\$ 81,818,225	\$ 81,539,308	\$ 278,917
5. Market value of assets at end of year (Item 1 + Item 4)	\$ 1,014,902,702	\$ 1,013,008,416	\$ 1,894,286
6. Actual net investment income (Item 2b)	\$ 105,486,598	\$ 105,296,545	\$ 190,053
7. Expected net income at 7.25%			
a. Market value of assets at beginning of year	\$ 67,648,625		
b. Contributions for the year	2,789,857		
c. Disbursements	(3,647,836)		
d. Total	\$ 66,790,646		
8. Excess investment income (Item 6 - Item 7d)	\$ 38,695,952		
9. Estimated dollar weighted market yield	11.5%		
10. Actuarial Value of Assets			
a. Actuarial value of assets at the beginning of year	\$ 1,015,080,603	\$ 1,013,465,234	\$ 1,615,369
b. Actuarial value of assets at the end of year	\$ 1,047,377,832	\$ 1,045,483,546	\$ 1,894,286
c. Investment income for the year	\$ 55,965,602	\$ 55,775,549	\$ 190,053
d. Estimated dollar weighted actuarial yield	5.6%		
e. Expected return on the actuarial value of assets	\$ 72,735,365		
f. Asset gain/(loss) (Item 10c - Item 10e)	\$ (16,769,763)		

Table 6 Development of Actuarial Value of Assets

		<u>Year Ending</u> <u>December 31, 2023</u>				
1. Excess/(Shortfall) of investment income for 2023 (Table 5, Item 8)		\$	38,695,952			
2. Development of amounts to be recognized as of December 31, 2023:						
Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income (1)	Offsetting of Gains/(Losses) (2)	Net Deferrals Remaining (3) = (1) + (2)	Years Remaining (4)	Recognized for This Valuation (5) = (3) / (4)	Remaining after This Valuation (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	(81,996,126)	38,695,952	(43,300,174)	4	(10,825,044)	(32,475,130)
2023	<u>38,695,952</u>	<u>(38,695,952)</u>	<u>0</u>	5	<u>0</u>	<u>0</u>
Total	\$ (43,300,174)	\$ 0	\$ (43,300,174)		\$ (10,825,044)	\$ (32,475,130)
3. Market value of assets including RDFB assets						
a. Including RDFB assets					\$	1,014,902,702
b. Excluding RDFB assets					\$	1,013,008,416
4. Actuarial value of assets						
a. Including RDFB assets (Item 3.a. - Item 2, Column 6)					\$	1,047,377,832
b. Excluding RDFB assets					\$	1,045,483,546
5. Ratio of actuarial value to market value						103.2%

Notes: Remaining deferrals in Column (1) for prior years are from Table 6 of the prior year's report. Column (2) is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type (offset against oldest base first).

Table 7 History of Investment Return Rates

Year Ending December 31, ¹	Market Returns ²	Actuarial
(1)	(2)	(3)
2008	-26.3%	
2009	8.8%	
2010	11.8%	
2011	-3.5%	
2012	9.7%	-0.4%
2013	8.9%	6.9%
2014	5.7%	6.5%
2015	-0.3%	4.4%
2016	5.7%	5.4%
2017	11.7%	5.9%
2018	-5.8%	4.5%
2019	20.7%	6.6%
2020	11.6%	8.3%
2021	17.7%	10.7%
2022	-11.9%	5.9%
2023	11.5%	5.6%
Average Returns		
Last Five Years:	9.3%	7.4%
Last Ten Years:	6.2%	6.4%
Last Fifteen Years:	6.5%	N/A

Notes:

¹ Results prior to December 31, 2017 are based on the information provided in the prior actuary's actuarial valuation reports

² Net of Administrative Expenses through December 31, 2018

Table 8
History of Cash Flow
(thousands \$)

Year Ending December 31 ¹ ,	Distributions and Expenditures				External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
	Contributions	Benefit Payments and Refunds	Administrative Expenses ²	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2008	\$ 34,943	\$ (26,118)		\$ (26,118)	\$ 8,825	\$ 387,120	2.3%
2009	38,448	(28,173)		(28,173)	10,275	432,028	2.4%
2010	40,081	(30,876)		(30,876)	9,205	492,545	1.9%
2011	43,641	(34,863)		(34,863)	8,778	484,089	1.8%
2012	47,302	(40,009)	(1,163)	(41,172)	6,130	538,898	1.1%
2013	50,629	(42,825)	(1,115)	(43,940)	6,689	595,110	1.1%
2014	54,065	(45,403)	(1,327)	(46,730)	7,335	638,019	1.1%
2015	57,948	(50,005)	(1,466)	(51,471)	6,477	644,174	1.0%
2016	56,105	(50,828)	(1,397)	(52,225)	3,880	686,020	0.6%
2017	59,493	(56,548)	(1,563)	(58,111)	1,382	769,475	0.2%
2018	57,848	(63,983)	(1,421)	(65,404)	(7,556)	718,520	-1.1%
2019	59,196	(66,319)	(1,721)	(68,040)	(8,844)	857,839	-1.0%
2020	60,699	(76,956)	(1,929)	(78,885)	(18,186)	938,226	-1.9%
2021	60,609	(80,207)	(2,404)	(82,611)	(22,002)	1,080,734	-2.0%
2022	70,784	(87,734)	(3,010)	(90,744)	(19,960)	933,084	-2.1%
2023	76,962	(98,176)	(2,454)	(100,630)	(23,668)	1,014,903	-2.3%

Notes:

¹ Results prior to December 31, 2017 are based on the information provided in the prior actuary's actuarial valuation reports

² Information was not provided in the prior actuary's valuation reports

Table 9
Total Experience Gain or Loss
(Inclusive of the Retiree Death Benefit Fund)

Item (1)	Year Ending December 31, 2023 (2)
A. Calculation of total actuarial gain or loss	
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 673,675,081
2. Normal cost for the year, including service purchases	40,324,421
3. Administrative expenses for the year	2,453,506
4. Contributions for the year	(76,961,574)
5. Interest at 7.25%	
a. On UAAL	\$ 48,841,443
b. On normal cost	1,461,760
c. On administrative expenses	88,940
d. On contributions	(2,789,857)
e. Total	\$ 47,602,286
6. Changes due to assumptions	14,789,497
7. Expected UAAL, end of year (Sum of Items 1 through 6)	701,883,217
8. Actual UAAL, end of year	730,553,734
9. Total (gain)/loss for the year (Item 8 - Item 7)	\$ 28,670,517
B. Source of gains and losses	
	% of AAL ¹
1. Asset (Gain)/Loss	0.95% \$ 16,769,763
2. Demographic (Gains)/Losses	0.67% 11,900,754
3. Total	1.62% \$ 28,670,517

¹Percent of expected Actuarial Accrued Liability

Table 10
Funding History
(Inclusive of the Retiree Death Benefit Fund)

Valuation Date December 31 ¹ ,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2009	\$ 518,433,065	\$ 735,334,345	\$ 216,901,280	70.5%	\$ 122,928,285	176.4%
2010	547,364,486	778,005,374	230,640,888	70.4%	127,731,696	180.6%
2011	554,190,027	826,366,581	272,176,554	67.1%	135,264,530	201.2%
2012	559,077,407	858,949,998	299,872,591	65.1%	141,561,047	211.8%
2013	605,530,903	913,591,470	308,060,567	66.3%	147,138,718	209.4%
2014	653,980,764	971,213,766	317,233,002	67.3%	152,544,227	208.0%
2015	690,696,986	1,039,229,249	348,532,263	66.5%	155,832,755	223.7%
2016	733,105,429	1,109,862,137	376,756,708	66.1%	163,894,324	229.9%
2017	779,484,342	1,185,017,294	405,532,952	65.8%	162,490,560	249.6%
2018	807,978,988	1,389,660,616	581,681,628	58.1%	166,564,996	349.2%
2019	852,294,229	1,459,529,788	607,235,559	58.4%	168,732,391	359.9%
2020	904,436,131	1,542,174,418	637,738,287	58.6%	164,961,691	386.6%
2021	977,909,434	1,623,334,720	645,425,286	60.2%	157,820,000	409.0%
2022	1,015,080,603	1,688,755,684	673,675,081	60.1%	157,279,666	428.3%
2023	1,047,377,832	1,777,931,566	730,553,734	58.9%	155,330,225	470.3%

Notes:

¹ Results prior to December 31, 2017 are based on the information provided in the prior actuary's actuarial valuation reports



Table 11 Retiree Death Benefit Fund

The Retiree Death Benefit Fund was established effective September 1, 2003. The Fund operates as a separate account within the system that is used to advance fund and to pay the \$10,000 post-retirement lump sum death benefits for retirees. The following table illustrates the allocation of the total plan assets and liabilities between the primary pension fund and the Retiree Death Benefit Fund.

	<u>Pension Fund</u>	<u>Retiree Death Benefit Fund</u>	<u>Total</u>
1. Total Actuarial Present Value of Future Benefits			
a. Active Members	\$ 986,448,174	\$ 859,360	\$ 987,307,534
b. Inactive Members	11,239,179	71,634	11,310,813
c. Annuitants	<u>1,092,847,114</u>	<u>3,552,670</u>	<u>1,096,399,784</u>
d. Total	\$2,090,534,467	\$ 4,483,664	\$2,095,018,131
2. Present Value of Future Normal Costs	\$ 316,824,101	\$ 262,464	\$ 317,086,565
3. Actuarial Accrued Liability (item 1 - item 2)	\$1,773,710,366	\$ 4,221,200	\$1,777,931,566
4. Valuation Assets	\$1,045,483,546	\$ 1,894,286	\$1,047,377,832
5. Unfunded Actuarial Accrued Liability (UAAL) (item 3 - item 4)	\$ 728,226,820	\$ 2,326,914	\$ 730,553,734
6. City Contribution Rate to be Allocated to the Retiree Death Benefit Fund			
a. Normal Cost Rate		0.020%	
b. Payment Required to Amortize UAAL over 12 years (as of 12/31/2023)		0.160%	
c. Total Allocated Rate		0.180%	

SECTION D

ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

The determination of the accrued liability and an actuarially determined contribution (or funding period) 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 an actuarially determined contribution (or funding period) that result 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 actuarially determined employer contribution rates shown on the Executive Summary provide a guide for the adequacy of the current statutory contribution rates received from the membership and the City. As shown on the exhibit, the current contribution rates are not sufficient to ensure the sustainability of the System. The timely receipt of the actuarially determined contributions is critical to support the financial health of the System. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

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 (please see a description of the measures following the table):

Valuation as of December 31 st	2023	2022	2021	2020	2019	2018	2017
Ratio of market value of assets to payroll	6.5	5.9	6.8	5.7	5.1	4.3	4.7
Ratio of actuarial accrued liability to payroll	11.4	10.7	10.3	9.3	8.6	8.3	7.3
Ratio of actives to retirees and beneficiaries	1.1	1.3	1.4	1.7	2.0	2.1	2.2
Ratio of net cash flows to market value of assets	-2.3%	-2.1%	-2.0%	-1.9%	-1.0%	-1.1%	0.2%
Duration of actuarial accrued liability	13.7	14.1	14.3	14.6	14.8	15.1	Not available

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 2.0 times the payroll, a return on assets 5% different 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 plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. 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.

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 2.5 times the payroll (5 to 2 ratio), a change in liability 2% other than assumed would equal 5% 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.

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.

RATIO OF NET CASH FLOW TO 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 percentage of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF ACTUARIAL ACCRUED LIABILITY

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, a duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. A robust measurement of additional risk assessment is outside the scope of the annual actuarial valuation. However, we recommend that some scenario testing and sensitivity testing be included in any sustainability study conducted in the future.

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 Austin Police Retirement System (APRS) 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 dollar amount. To fulfill this objective, the discount rate that is used to value the accrued liabilities of the Plan 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 Plan, the investment return assumption is 7.25 %.

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 de-risk the diversified portfolio.

Valuation Accrued Liabilities	LDROM
\$1,777,931,566	\$2,390,435,939

SECTION E

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions for Austin Police Retirement System

Creditable Service (APRS Service)

Total years and completed months (excluding a month in which service amount to fewer than 15 days) during which a Member makes contributions to the System.

Earnings

Base pay plus longevity pay. Overtime or special pay is not included.

Average Final Compensation

Average Earnings for the highest 36 months (60 months for new members beginning January 1, 2022) over the last 120 months of service.

Member Contributions

15.000% of Earnings beginning January 1, 2022. Subject to a possible increase of up to 2% of pay (17% of pay total) if the ADC exceeds the corridor maximum.

City Contributions

Beginning January 1, 2022, City contribution will consist of two components:

- City Contribution Amount – Fixed City payment plan established to eliminate the legacy unfunded liability existing as of December 31, 2020 over a 30-year period (see page RSV-5), plus
- City Contribution Rate – An actuarially determined contribution (ADC) based on plan costs (reduced by the member rate) in addition to the fixed payment plan for the legacy unfunded liability, subject to certain constraints. A contribution rate corridor (see page RSV-2) for the ADEC was established (beginning with contributions being paid in fiscal year 2022) to keep the rate within a certain range to ensure long-term funding but moderating volatility. The City Contribution Rate is the ADC except:
 - If the ADC is less than the corridor midpoint but APRS is less than 90% funded then the City Contribution Rate is the corridor midpoint,
 - If the ADC exceeds the corridor maximum the City Contribution Rate is the corridor maximum.

Normal Retirement

Date:

Earlier of age 62, age 55 and 20 years of Creditable Service, or 23 years of Creditable Service, regardless of age. For new members beginning January 1, 2022, age 62, or age 50 and 25 years of Creditable Service. Creditable Service for retirement eligibility includes Proportionate Service Credit and excludes pre-membership military service.

Benefit:

3.20% of Average Final Compensation (2.50% for new member beginning January 1, 2022) times Creditable Service (including pre-membership military service).



Form of Benefit:

Life Annuity. At the death of the member, the excess, if any, of the member's accumulated contributions over the amount of payments made to the member will be paid in a lump sum to the member's beneficiary. (Other benefit options available).

Vesting

Schedule:

100% after 10 years of Creditable Service, including Proportionate Service Credit.

Benefit Amount:

Members will receive his (her) accrued benefit payable at the Normal Retirement Date based upon actual Creditable Service prior to termination.

Non-vested members receive a refund of accumulated contributions.

Disability

Eligibility:

10 years of Creditable Service (service requirement is waived if the disability is a direct or proximate result of the performance of the member's employment). Members who are eligible for normal retirement may not apply for disability benefits.

Benefit:

Monthly benefit is calculated in the same manner as the member's normal retirement benefit. Benefit will be calculated with a minimum of 20 years of Creditable Service if the disability is a direct or proximate result of the performance of the member's employment.

Death Benefits

Before Retirement Eligibility:

Lump sum payment equal to twice the amount of the member's accumulated contributions, subject to a minimum of \$10,000.

After Retirement Eligibility (member is married at the time of death):

In lieu of the lump sum benefit described above, the surviving spouse may select a retirement option in the same manner as if the member had retired immediately prior to his death. When monthly benefits are payable in lieu of the lump sum, a \$10,000 death benefit will be paid to the surviving spouse.

After Retirement Eligibility (member is not married at the time of death):

In lieu of the lump sum benefit described above, the member's beneficiary may select a Fifteen Year Certain benefit calculated in the same manner as if the member had retired immediately prior to his death. When monthly benefits are payable in lieu of the lump sum, a \$10,000 death benefit will be paid to the beneficiary.

Retiree Death Benefit Fund

Effective September 1, 2003, a separate fund (funded as a portion of the City's contribution rate) was established to pay post-retirement lump sum death benefits. Effective September 1, 2007, the amount of these benefits was increased to \$10,000.



Proportionate Retirement Program

Effective September 1, 2009, the System and the City began participating in the statewide Proportionate Retirement Program (PRP). Service in other participating public employee retirement systems can be combined with service in the System to satisfy the System's requirements for service retirement eligibility and for eligibility for vested benefits of a terminated Member. The participating systems, in addition to the System, are the six statewide systems, the City of Austin Employees' Retirement System, and the systems for the City of El Paso employees.

The cost of the PRP is included as part of the Legacy Liability and the actuarially determined City Contribution Rate.

Forward DROP

Eligibility:

Completion of 23 years of Creditable Service (including Proportionate Service Credit and excluding pre-membership military service). For members hired on or after January 1, 2022 eligibility is age 50 and 25 years of service.

Participation Period:

Not to exceed 60 months. For members with less than 23 years of APRS Service as of February 17, 2016, the maximum participation period was extended to 84 months.

Rate of Return:

Effective August 1, 2015, equal to the PROP interest rate (currently 2.25%). Members with 23 years of APRS service as of July 31, 2015 will receive 5.00% interest credit per year. Additionally, members with less than 23 years of APRS Service as of February 17, 2016 will not receive interest crediting while in DROP.

DROP Fee/Charge:

For members with less than 23 years of APRS Service as of February 17, 2016, a charge for DROP participation will be applied as shown below. The charge will only apply during the period of DROP participation.

<u>Year of DROP Participation</u>	<u>Fee/Charge</u>
1	25%
2	20
3	15
4	10
5	5
6	5
7	5

Form of Distribution:

Cash lump sum (or rollover to PROP account) at termination of employment.

Miscellaneous:

For members with less than 23 years of APRS Service as of February 17, 2016, member contributions will continue to be required during the DROP participation period, but these contributions will be retained by the System.



Retro DROP

Eligibility:

Completion of 23 years of Creditable Service (included Proportionate Service Credit and excluding pre-membership military service). Members with less than 23 years on April 1, 2015 will not be eligible to participate in Retro DROP.

Participation Period:

Not to exceed 36 months.

Rate of Return:

5.0%.

Form of Distribution:

Cash lump sum (or rollover to PROP account) at termination of employment.

Post-Retirement Option Plan (PROP)

Retiring members who have participated in DROP may transfer all or a portion of their DROP lump sum into their PROP account for later disbursement.

Retired members may defer receipt of a minimum of \$250 of their monthly annuity. These deferred benefits will be accumulated and available for later disbursement. Participants may change their deferral amount twice per calendar year. The interest crediting rate on a member's PROP deferrals is set by the Board. The current crediting rate is 3.87%.

Cost of Living Adjustment

None.

SECTION F

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees effective with the December 31, 2022 actuarial valuation. The actuarial assumptions used for the December 31, 2023 actuarial valuation are based on an experience review for the five-year period from January 1, 2018 through December 31, 2022, dated March 20, 2024. Please see this report for a discussion of the analysis and rationale for the recommended assumptions.

I. Valuation Date

The valuation date is December 31 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 is used to determine the adequacy of the current City contribution rate, describe the current financial condition of APRS, analyze changes in the condition of APRS, and provide various summaries of the data.

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method. Under this method, the first step is to determine the contribution rate (level as a percentage of pay) required to provide the benefits to each member, or the normal cost rate. The normal cost rate consists of two pieces: (i) the member's contribution rate, and (ii) the remaining portion of the normal cost rate which is the employer's normal cost rate. The total normal cost rate is based on the benefits payable to each individual active member.

The Unfunded Actuarial Accrued Liability (UAAL) is the liability for future benefits which is in excess of (i) the actuarial value of assets, and (ii) the present value of future normal costs. The employer contribution is equal to the employer normal cost and two payments towards any unfunded actuarial liabilities.

The Individual Entry Age actuarial cost method is an "immediate gain" method (i.e., experience gains and losses are separately identified as part of the UAAL). However, they are amortized over the same period applied to all other components of the UAAL.

Two payments towards the unfunded liabilities are made by the employer. The first is a payment towards the Legacy Liability. This is payment is part of a schedule of known dollar amounts which amortize the Legacy Liability over 30 payments. The second payment towards the UAAL is for anticipated changes in the UAAL that have occurred since the Legacy Liability was created. Each year a new closed 30-year amortization base is created for these unanticipated changes. The net sum of these layers layer is the additional payment towards the UAAL. The funding period is the weighted average of the remaining length of time on these amortization layers (including the Legacy Liability).

III. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment returns in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continuing to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year).

IV. Actuarial Assumptions

Investment Return: 7.25% per year, net of investment-related expenses (composed of an assumed 2.50% inflation rate and a 4.75% real rate of return)

Mortality Decrements:

Pre-Retirement

PubS-2010 Employee Mortality Table for males and females. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates in the MP-2021 tables.

Healthy Annuitants

PubS-2010 Healthy Retiree Mortality Table for males and females. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates in the MP-2021 tables.

Disabled Annuitants

PubS-2010 Disability Mortality Table for males and females. Generational mortality improvements projected from the year 2010 using the ultimate mortality improvement rates in the MP-2021 tables.

Service Retirement Decrements:

Members Who Have 23 Years of Service by Age 55

The following rates reflect the members expected departure from active service and are applied based on years of service:

Years of Service	Probability of Retirement
23	40%
24	20
25	20
26	20
27	20
28	20
29	30
30+	30

100% probability of retirement at age 62.

Members Who Do Not Have 23 Years of Service by Age 55

The following rates reflect the members expected departure from active service and are applied based on the member's age:

Age	Probability of Retirement
55	30%
56	30
57	30
58	30
59	30
60	30
61	30
62+	100

Deferred Retirement Option Program (DROP)

Members eligible for either the Back DROP or 5-year Forward DROP (or both) are assumed to select the most valuable option based on their individual situation at each possible retirement age. Members eligible for only the 7-year Forward DROP are assumed to not participate in DROP.

Post-Retirement Option Plan (PROP) Investment Accounts

75% of members with a PROP account at the valuation date will elect to leave their lump sum in APRS until age 60 and 25% of members will elect to receive their PROP balance at the valuation date. No future PROP deferrals are assumed and current active members are not assumed to enter PROP. Average annual rate credited to the PROP accounts is the average yield of the 10-year treasuries for the 12-month period ending October 31st of the prior calendar year. For valuation purposes we will assume the rate that applies to the calendar



year following the valuation date will apply to all future years.

Withdrawal of Employee Contributions

Members that terminate with a vested benefit are assumed to choose the most valuable option available to them at the time of termination: withdrawal of contributions or deferred annuity. Non-vested members are assumed to receive an immediate refund of accumulated contributions.

Members who elect to defer their annuity are assumed to retire on the date they are first eligible.

Disability Retirement Decrements:

Disability Rates

Rates for males and females at selected ages are shown below:

Age	Rate
20	0.0004%
25	0.0025
30	0.0099
35	0.0259
40	0.0494
45	0.0804
50	0.1188
55	0.1647
60	0.2180

Disability rates are set to zero when members become eligible for retirement

In Line of Duty Disability

55% of disability retirements assumed to be in the line of duty.

Termination Decrements for Reasons Other Than Death or Retirement:

Withdrawal Rates

The following service-based rates apply:

Years of Service	Probability of Termination
0	13.00%
1	6.00
2-5	3.50
6-9	2.00
10-22	1.00
23+	0.00

Termination rates are set to zero when members become eligible for retirement.



Salary Increases: Increases are assumed to vary based on years since academy graduation. Salary increases include an underlying price inflation component of 2.50% and a 0.5% promotional increase is included in all steps. The table below shows the total percentage increase for the year the indicated anniversary of the officer's academy graduation occurs.

Anniversary of Academy Graduation	Percentage Increase
1	15.20%
2	13.40
3	3.00
4	3.00
5	3.00
6	10.00
7	3.00
8	3.00
9	3.00
10	10.00
11	3.00
12	3.00
13	3.00
14	10.00
15	3.00
16	10.00
17-22	3.00
23	6.00
24+	3.00

If a member is a cadet on the valuation date their pay for the following year is assume to be the starting pay of a graduated officer. The 1st increase in the able above would apply to the following year.

Cost-of-Living Adjustments (COLA): Cost of living adjustments are granted on an ad hoc basis. No future COLAs are assumed.

Administrative Expenses: 1.25% of payroll. Included in this assumption would be any administrative expenses associated with the proportionate retirement program, which is currently assumed to be 0.017% of payroll.

Payroll Growth: Member Payroll is assumed to grow at 2.50% per year.

Marital Assumptions: 75% of active members are assumed to be married. Male spouses are assumed to be three years older than female spouses.

Decrement Timing: All decrements – mortality, service retirement, disability retirement, and termination of employment for reasons other than death or retirement – are assumed to occur at the middle of the valuation year.

Census Data and Assets

- The valuation was based on members of APRS as of the valuation date and does not take into account future members.
- All census data was supplied by APRS and was subject to reasonable consistency checks.
- There were data elements that were modified for some members as part of the valuation in order to make the data complete. However, the number of missing data items was immaterial.
- Asset data was supplied by APRS.

Other Actuarial Valuation Procedures

- No provision was made in this actuarial valuation for the limitations of Internal Revenue Code Sections 415 or 401(a)17.
- Annualized Payroll on Valuation Date is the annualized payroll of active members on the valuation date. Projected Contributory Payroll for the upcoming fiscal year (used in determining the amortization period) is the estimated pensionable earnings received by all plan members for the just completed calendar year (including earnings for members who are no longer active employees on the valuation date) increased by the assumed payroll growth rate.

Actuarial Model: This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

SECTION G

DETAILED SUMMARIES OF MEMBERSHIP DATA

Detailed Summaries of Membership Data

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Table A

Summary of Active Membership Data

December 31, 2023

Active members

a. Number		1,541
b. Total payroll at the valuation date	\$	154,106,035
c. Average salary	\$	100,004
d. Average age		40.2
e. Average benefit service		12.0

Active members currently in DROP

a. Number		10
b. Total payroll at the valuation date	\$	1,224,190
c. Average salary	\$	122,419
d. Average age		53.9
e. Average benefit service		27.4
f. Total annual benefits	\$	901,010
g. Average annual benefit	\$	90,101
h. Total DROP Balance	\$	1,639,881

Vested inactive members

a. Number		72
b. Total annual deferred benefits	\$	2,198,817
c. Average annual deferred benefit	\$	30,539
d. Average age		47.6

Nonvested inactive members

a. Number		84
b. Member contributions due	\$	1,060,956
c. Average refund due	\$	12,630

Table B

Summary of Annuitant Membership Data

December 31, 2023

Service Retirees

a. Number		1,191
b. Total annual benefits	\$	87,149,350
c. Average annual benefit	\$	73,173
d. Average age		62.5
e. Total PROP Balance	\$	31,216,770

Disability Retirees

a. Number		5
b. Total annual benefits	\$	176,160
c. Average annual benefit	\$	35,232
d. Average age		53.0
e. Total PROP Balance	\$	0

Beneficiaries

a. Number		95
b. Total annual benefits	\$	4,101,400
c. Average annual benefit	\$	44,101
d. Average age		73.1
e. Total PROP Balance	\$	447,291

QDROs

a. Number		80
b. Total annual benefits	\$	1,492,230
c. Average annual benefit	\$	18,653
d. Average age		58.8
e. Total PROP Balance	\$	0

Total Members in Payment

a. Number		1,371
b. Total annual benefits	\$	92,919,140
c. Average annual benefit	\$	67,775
d. Average age		63.0
e. Total PROP Balance	\$	31,664,061



Table C
Status Reconciliation

	Active	Active DROP	Vested Terminated	Non-vested Terminated	Retiree	Disability Retiree	Beneficiary	QDRO
Beginning of Year	1,607	26	61	96	1,093	6	89	70
Re-hired	-	-	-	1	-	-	-	-
Termination, non-vested	13	-	-	-	-	-	-	-
Termination, vested	17	-	-	1	-	-	-	-
Entered DROP	1	-	-	-	-	-	-	-
Retirement	86	17	7	-	-	1	-	1
Disability retirement	-	-	-	-	-	-	-	-
Contribution refund	33	-	-	34	-	-	-	-
Death	3	-	-	-	13	-	3	-
Total Out	153	17	7	36	13	1	3	1
Continuing	1,454	9	54	60	1,080	5	86	69
Total In	87	1	18	24	111	0	9	11
End of Year	1,541	10	72	84	1,191	5	95	80

Table D-1

Group A Active Members – Distribution by Age and Service

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	6									6
	\$ 73,794									\$ 73,794
25 - 29	64	36	1							101
	\$ 78,648	\$ 87,037	*							\$ 81,807
30 - 34	48	129	14							191
	\$ 80,008	\$ 87,664	\$ 96,315							\$ 86,374
35 - 39	13	102	115	34	1					265
	\$ 78,611	\$ 88,814	\$ 99,022	\$ 110,903	*					\$ 95,574
40 - 44	4	35	100	153	29	1				322
	\$ 79,253	\$ 89,471	\$ 99,376	\$ 116,700	\$ 123,726	*				\$ 108,481
45 - 49		18	41	59	121	16				255
		\$ 90,253	\$ 100,524	\$ 113,292	\$ 125,778	\$ 126,475				\$ 116,365
50 - 54		7	15	36	62	43	7			170
		\$ 87,835	\$ 100,410	\$ 115,877	\$ 122,407	\$ 135,724	\$ 143,374			\$ 121,891
55 - 59			1	14	22	11	8			56
			* \$ 111,418	\$ 122,292	\$ 134,179	\$ 138,764				\$ 124,076
60 - 64				2	1	1	2			6
				*	*	*	*			\$ 116,849
Over 64		1			1					2
		*			*					*
Total	135	328	287	298	237	72	17	-		1,374
	\$ 78,930	\$ 264,403	\$ -	\$ -	\$ 147,910	\$ -	\$ -	*		\$ 104,743

*For privacy reasons, average salary is not shown for cells with two or fewer employees. Service includes proportionate service.



Table D-2

Group B Active Members – Distribution by Age and Service

Age	Years of Service								Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39		40+
Under 25	40									40
	\$ 58,741									\$ 58,741
25 - 29	79									79
	\$ 66,117									\$ 66,117
30 - 34	41									41
	\$ 66,422									\$ 66,422
35 - 39	10									10
	\$ 64,207									\$ 64,207
40 - 44	4									4
	\$ 65,516									\$ 65,516
45 - 49	2					1				3
	*					*				\$ 71,021
50 - 54										
55 - 59										
60 - 64										
Over 64										
Total	176					1				177
	\$ 64,386					*				\$ 64,482

*For privacy reasons, average salary is not shown for cells with two or fewer employees. Service includes proportionate service.

Table E
Annuitants – Distribution by Age

Age	Number	Annual Benefit	Average Annual Benefit
Under 60	572	44,004,706	76,931
60 - 64	258	17,953,779	69,588
65 - 69	211	13,260,838	62,848
70 - 74	172	9,810,363	57,037
75 - 80	71	3,813,514	53,711
Over 80	85	4,075,940	47,952
Total	1,369	92,919,140	67,874

Table F
Schedule of Average Benefit Payments

Retirement Effective Dates January 1, 2018 to December 31, 2023	Years Creditable Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
Period 01/01/2018 to 12/31/2018							
Average Monthly Benefit	\$0	\$0	\$0	\$4,671	\$6,339	\$7,691	\$6,111
Average Final Salary	\$0	\$0	\$0	\$92,165	\$109,940	\$110,726	\$99,460
Number of Active Retirees	0	0	0	1	12	9	19
Period 01/01/2019 to 12/31/2019							
Average Monthly Benefit	\$0	\$0	\$2,174	\$4,623	\$6,568	\$6,772	\$7,109
Average Final Salary	\$0	\$0	\$83,574	\$106,427	\$111,655	\$101,112	\$90,557
Number of Active Retirees	0	0	1	1	24	15	6
Period 01/01/2020 to 12/31/2020							
Average Monthly Benefit	\$0	\$0	\$2,569	\$4,523	\$6,926	\$6,851	\$7,077
Average Final Salary	\$0	\$0	\$88,626	\$88,114	\$114,938	\$100,276	\$96,764
Number of Active Retirees	0	0	2	5	39	38	14
Period 01/01/2021 to 12/31/2021							
Average Monthly Benefit	\$0	\$0	\$2,690	\$4,790	\$6,756	\$7,378	\$8,954
Average Final Salary	\$0	\$0	\$84,610	\$103,537	\$116,678	\$112,937	\$127,144
Number of Active Retirees	0	0	2	3	70	34	6
Period 01/01/2022 to 12/31/2022							
Average Monthly Benefit	\$0	\$0	\$0	\$5,738	\$6,562	\$7,400	\$6,848
Average Final Salary	\$0	\$0	\$0	\$113,367	\$114,397	\$114,792	\$95,359
Number of Active Retirees	0	0	0	2	63	22	10
Period 01/01/2023 to 12/31/2023							
Average Monthly Benefit	\$0	\$0	\$2,108	\$4,846	\$6,914	\$7,889	\$7,279
Average Final Salary	\$0	\$0	\$5,124	\$86,498	\$111,507	\$108,814	\$98,717
Number of Active Retirees	0	0	2	8	51	38	11

Table G

Retired Members by Type of Benefit

Monthly Benefit Amount	Number of Retired Members	Type of Retirement ^a				Option Selected ^b						
		1	2	3	4	Unmod.	2	3	4	5	6	
Deferred						72						
\$1-1,000	42	10	0	0	32	39	3					
1,001-2,000	51	18	7	1	25	40	7		4			
2,001-3,000	62	27	23	2	10	45	10	2	3			2
3,001-4,000	159	114	34	1	10	96	42	4	16			1
4,001-5,000	185	167	15	1	2	102	48	14	19	1		1
5,001-6,000	226	217	8	0	1	109	75	23	14	2		3
6,001-7,000	275	270	5	0	0	139	83	25	21	3		4
7,001-8,000	189	188	1	0	0	78	70	22	14	4		1
Over \$8,000	180	180	0	0	0	88	53	15	19	3		2
Total	1,369	1,191	93	5	80	808	391	105	110	13		14

Notes:

^a Type of Retirement:

1. Normal retirement for age and service
2. Beneficiary payment, normal retirement or death in service
3. Disability retirement
4. QDRO - alternate payee

^b Option Selected:

Unmodified Plan: life annuity (includes Type 2 receiving survivor benefit for life)

The following options reduce the retired member's monthly benefit:

Option 2 - Beneficiary receives 100 percent of member's reduced monthly benefit

Option 3 - Beneficiary receives 50 percent of member's reduced monthly benefit

Option 4 - Beneficiary receives 66-2/3 percent of member's reduced monthly benefit

Option 5 - Survivor receives 66-2/3 percent of member's reduced monthly benefit upon first death

Option 6 - Life annuity with 15 years guaranteed

Note: The number of Retired Members and number of options selected are not equal due to the inclusion of 72 deferred vested members in the Unmodified option selection.



Table H

Schedule of Participating Employers

The City of Austin and the Austin Police Retirement System are the only participating employers in the plan.

Table I

Change in Net Position, Last Ten Fiscal Years

	Fiscal Year									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Additions										
Member Contributions	\$21,665	\$24,709	\$22,291	\$24,352	\$22,603	\$23,203	\$24,122	\$25,180	\$26,365	\$26,418
Employer Contributions	32,400	33,239	33,814	35,141	35,244	35,993	36,577	35,429	44,419	\$50,544
Investment Income (net of expenses)	35,574	(322)	37,965	82,072	(43,399)	148,163	98,573	164,509	(127,690)	\$105,486
Total additions to plan net position	\$89,639	\$57,626	\$94,070	\$141,565	\$14,449	\$207,359	\$159,272	\$225,118	(\$56,906)	\$182,448
Deductions										
Benefit Payments	\$39,209	\$42,414	\$45,661	\$49,174	\$53,476	\$56,414	\$62,027	\$70,280	\$78,129	\$86,710
Refunds	499	994	996	1,529	3,015	1,048	1,463	2,164	3,045	\$2,215
Administrative Expenses	1,327	1,466	1,397	1,563	1,421	1,721	1,929	2,404	3,010	\$2,454
Lump-sum Payments	5,695	6,597	4,170	5,845	7,491	8,858	13,466	7,763	6,560	\$9,251
Total deductions from plan net position	\$46,730	\$51,471	\$52,224	\$58,111	\$65,404	\$68,040	\$78,885	\$82,611	\$90,744	\$100,630
Change in net position	\$42,909	\$6,155	\$41,846	\$83,454	(\$50,955)	\$139,319	\$80,387	\$142,507	(\$147,650)	\$81,818

Notes: Dollar amounts in thousands
Columns may not add due to rounding



Table J

Benefit and Refund Deductions from Net Position by Type, Last Ten Fiscal Years

	Fiscal Year									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Type of Benefit										
Age and service benefits:										
Retirees ^a	\$39,129	\$42,364	\$45,591	\$49,065	\$53,394	\$56,298	\$61,937	\$70,135	\$77,954	\$86,601
Beneficiaries ^a										
Lump-sum payments	\$5,695	\$6,597	\$4,170	\$5,845	\$7,491	\$8,858	\$13,466	\$7,763	\$6,560	\$9,251
In service death benefits: ^b	\$80	\$50	\$70	\$109	\$83	\$116	\$90	\$145	\$175	\$110
Disability benefits: ^c										
Total benefits	<u>\$44,904</u>	<u>\$49,011</u>	<u>\$49,831</u>	<u>\$55,019</u>	<u>\$60,968</u>	<u>\$65,272</u>	<u>\$75,493</u>	<u>\$78,043</u>	<u>\$84,689</u>	<u>\$95,962</u>
Type of Refund										
Death ^b										
Separation	\$499	\$994	\$996	\$1,529	\$3,015	\$1,048	\$1,463	\$2,164	\$3,045	\$2,215
Total refunds	<u>\$499</u>	<u>\$994</u>	<u>\$996</u>	<u>\$1,529</u>	<u>\$3,015</u>	<u>\$1,048</u>	<u>\$1,463</u>	<u>\$2,164</u>	<u>\$3,045</u>	<u>\$2,215</u>

Notes: Dollar amounts in thousands

^a Segregation of age benefits for beneficiaries not currently available

^b Segregation of death benefits between refunds and in service death benefits not currently available

^c Segregation of disability benefits from age and service benefits not currently available

Columns may not add due to rounding

Excludes administrative expenses

SECTION H

GLOSSARY

Glossary

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or Funding Method: A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or Actuarial Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

- a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.),
- b. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
- c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB.

Actuarial Value of Assets or Valuation Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC): A calculated contribution for a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the calculated contribution has a normal cost payment and an amortization payment.

Closed Amortization Period: A specific number of years that is counted down by one each year and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.



Defined Benefit Plan: An employer-sponsored retirement benefit that provides workers, upon attainment of designated age and service thresholds, with a monthly benefit based on the employee's salary and length of service. The value of a benefit from a defined benefit plan is generally not affected by the return on the assets that are invested to fund the benefit.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or Amortization Period: The term "Funding Period" is used in two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.



Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.