Austin Police Retirement System

Annual Actuarial Valuation - Funding

As of December 31, 2017

GRS Retirement Consulting

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August 9, 2018

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, 2017

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, 2017. 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 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.

Plan Provisions

There were no changes to the plan provisions during the past year. The current plan provisions are outlined in Section D 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, 2016 actuarial valuation. In order to assess the reasonableness of the assumptions in our first actuarial valuation for APRS, we have relied on the analysis prepared by the prior actuary. We have also recommended that the Board conduct a five-year experience study to review the assumptions prior to the next actuarial valuation. The current actuarial assumptions and methods are outlined in Section E of this report.

Data

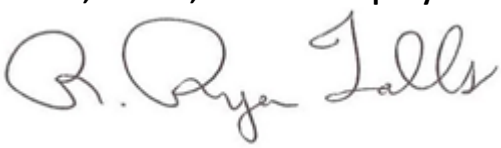
The valuation was based upon information as of December 31, 2017 furnished by APRS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by APRS staff.

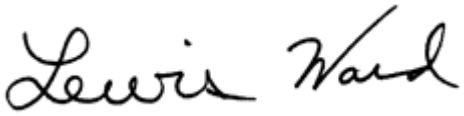
Certification

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 are independent of the plan sponsor. Ryan Falls is an Enrolled Actuary, a Fellow of the Society of 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 are experienced in performing valuations for public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company





R. Ryan Falls, FSA, EA, MAAA
Senior Consultant & Actuary

Lewis Ward
Consultant

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

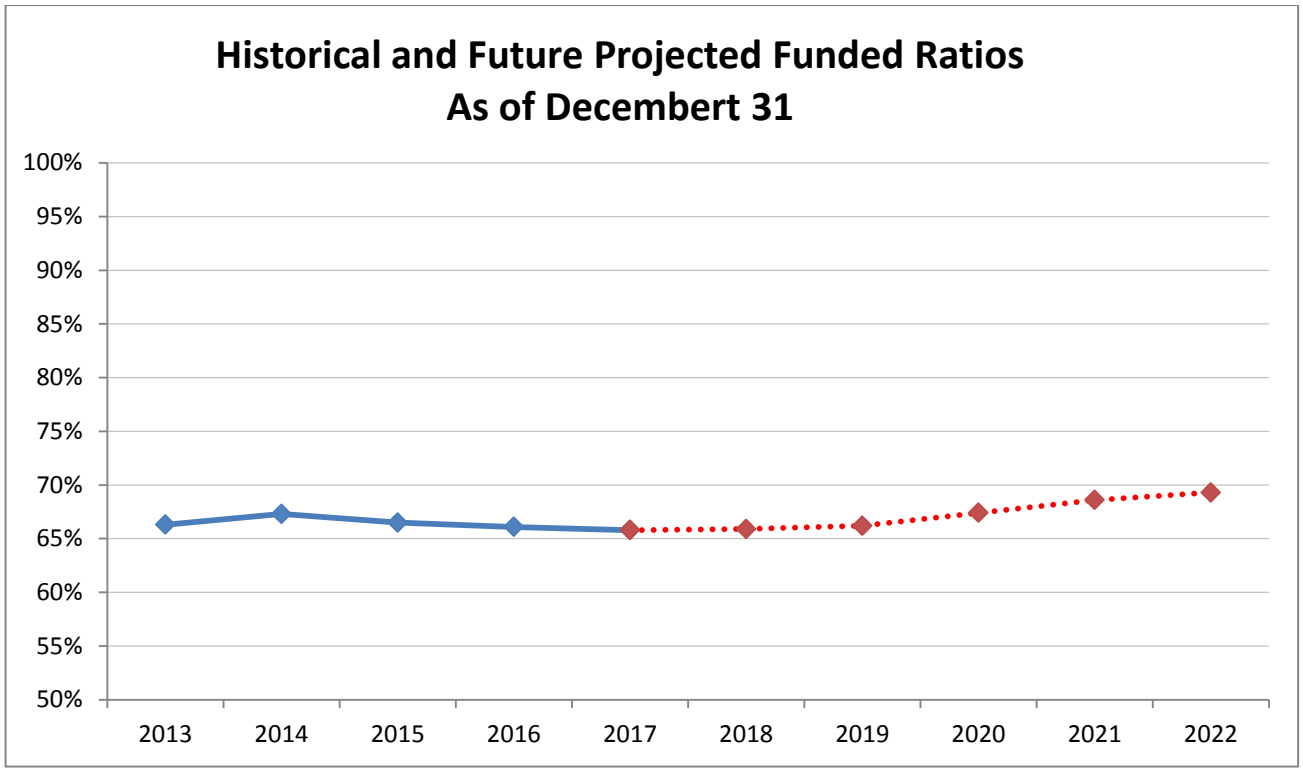
Item	December 31, 2017	December 31, 2016[1]
Membership		
• Number of		
- Active members	1,866	1,883
- Inactive, vested	45	30
- Inactive, nonvested	53	6
- Annuitants	867	803
- Total	2,831	2,722
• Annualized Payroll on Valuation Date	$ 162,490,560	$ 163,894,324
Statutory contribution rates		
• Members	13.000%	13.000%
• City	21.313%	21.313%
Contribution to be Allocated to Retiree Death Benefit Fund	0.121%	0.145%
Actuarially Determined Contribution Rates		
Estimated Years until UAAL is Eliminated:		
• 20 Years	26.052%	24.407%
• 30 Years	22.269%	20.566%
• 40 Years	20.488%	18.765%
Assets		
• Market value (MVA)	$ 769,474,743	$ 686,020,262
• Actuarial value (AVA)	$ 779,484,342	$ 733,105,429
• Return on market value	11.7%	5.7%
• Return on actuarial value	5.9%	5.4%
Actuarial Information on AVA (smoothed)		
• Normal cost %[2]	22.291%	21.767%
• Total normal cost	$ 38,228,170	$ 35,674,878
• Actuarial accrued liability	$ 1,185,017,294	$ 1,109,862,137
• Unfunded actuarial accrued liability (UAAL)	$ 405,532,952	$ 376,756,708
• Funded ratio	65.8%	66.1%
• Funding period (years)	35	28
Actuarial Information on MVA		
• Unfunded actuarial accrued liability (UAAL)	$ 415,542,551	$ 423,841,875
• Funded ratio	64.9%	61.8%
• Funding period (years)	37	Not Available

Notes:

[1] December 31, 2016 results are based on the information provided in the prior actuary's actuarial valuation reports (a reasonable approach was taken to estimate certain results that were not included in prior reports)

[2] Includes load for assumed PRP administrative expenses and normal cost associated with the Retiree Death Benefit Fund

The following chart illustrates the recent history and outlook of the funded status of APRS over the next five years:



12/31/	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Funded Ratio	66.3%	67.3%	66.5%	66.1%	65.8%	65.9%	66.2%	67.4%	68.6%	69.3%
UAAL (millions)	$308	$317	$349	$377	$406	$427	$445	$453	$457	$468

The projections beyond 2017 are based on the same assumptions, methods and provisions used for the December 31, 2017 valuation. Additionally, the market value of assets is expected to earn 7.70% per year.

Based on current expectations and assumptions, APRS's UAAL is projected to continue to increase for more than a decade. However, the funded ratio is expected to start improving over time assuming all assumptions are met.

SECTION B

DISCUSSION

Discussion

Introduction

The results of the December 31, 2017 actuarial valuation of the Austin Police Retirement System (APRS) are presented in this report.

The primary purposes of this actuarial valuation report are to determine the adequacy of the current City contribution rate, describe the current financial condition of APRS, analyze the changes in the condition of APRS, and provide various summaries of the data.

The total contribution rate for the current fiscal year exceeds the normal cost by 12.022% of payroll, which, on an actuarial value of assets basis, is expected to amortize the unfunded liability in approximately 35 years. In the prior valuation, the total contribution rate was expected to amortize the unfunded liability in approximately 28 years. This increase in the funding period was due to increases in the normal cost rate determined by GRS versus the prior actuary and increases in the unfunded liabilities of the system since the prior year. APRS experienced losses on both the actuarial liabilities and the actuarial value of assets.

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 12 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 18 years following December 31, 2017. With the exception of Table 12, the amounts outlined in this report represent the total assets and liabilities of APRS, inclusive of the Retiree Death Benefit Plan.

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

Plan Provisions

There were no changes to the plan provisions during the past year. The current plan provisions are outlined in Section D 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, 2016 actuarial valuation. The current actuarial assumptions and methods are outlined in Section E of this report. In order to assess the reasonableness of the assumptions in our first actuarial valuation for APRS, we have relied on the analysis prepared by the prior actuary. We have also recommended that the Board conduct a five-year experience study to review the actuarial assumptions prior to the next actuarial valuation.

Funding Adequacy

The City currently contributes 21.313% of payroll and members contribute 13.00% of payroll.

The unfunded actuarial accrued liability (UAAL) of APRS increased from $377 million as of December 31, 2016 to $406 million as of December 31, 2017. Additionally, the funded ratio of APRS—actuarial value of assets divided by the actuarial accrued liability—decreased from 66.1% to 65.8% as of

December 31, 2017. 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.

The valuation shows that the total normal cost for funding purposes is 22.291% of payroll. The total contribution rate is currently 34.313% of payroll. Thus, the total contribution rate for the current fiscal year exceeds the normal cost by 12.022% of payroll which will be available to amortize the unfunded liability. On an actuarial value of assets basis, the current contribution rate is expected to amortize the unfunded liability in approximately 35 years.

The Texas Pension Review Board adopted their Pension Funding Guidelines on January 26, 2017. These Guidelines state that "actual contributions made to the plan should be sufficient to cover the normal cost and to amortize the unfunded actuarial accrued liability over as brief a period as possible, but not to exceed 30 years, with 10-25 years being a more the preferable target range." The City's current contribution rate of 21.313% is expected to amortize the unfunded liability in approximately 35 years. For informational purposes, this report provides an actuarially determined City contribution rate required to amortize the unfunded actuarial accrued liability over a 20-year, 30-year, and a 40-year period, which are 26.052%, 22.269%, 20.488%, respectively.

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 $686 million as of December 31, 2016 to $769 million as of December 31, 2017. Table 5 reconciles the changes in the fund during the year. Total contributions increased from $56.1 million to $59.5 million.

Table 6 shows the development of the actuarial value of assets. The actuarial value of asset method recognizes the difference between the actual and expected market value of assets over a five-year period. The total actuarial value of assets is $779 million, which is greater than the market value of assets of $769 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 administrative expenses for the fiscal year ending December 31, 2017 was 11.7%. When measured on an actuarial value, the net investment return was 5.9%, which is lower than the assumed return of 7.70%. APRS experienced a $13 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 6.3% and the five-year average actuarial return is 5.8%.

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 continues to receive more contributions than it pays out in administrative expenses and benefit payments, or $1.4 million (or 0.2% of assets) for the year ending December 31, 2017 and $3.9 million (or 0.6% of assets) for the year ending December 31, 2016. While APRS is still in a positive cashflow position, the ratio of outflows to inflows has continued to increase. If this trend continues APRS will soon be in a negative cashflow position. 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. Table 11 provides a history of contribution rates, as a percent of payroll, paid into the trust by the City and members.

Data

The valuation was based upon information as of December 31, 2017 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 F show key census statistics for the various groups included in the valuation.

SECTION C

TABLES

Table 1
Development of Employer Cost
(Inclusive of the Retiree Death Benefit Fund)

	December 31, 2017	December 31, 2016[1]
1. Payroll		
a. Annualized Payroll on Valuation Date	$ 162,490,560	$ 163,894,324
b. Projected Contributory Payroll	171,495,984	163,894,324
2. Total Normal Cost Rate		
a. Gross normal cost rate	22.274%	21.750%
b. PRP Administrative expenses	0.017%	0.017%
c. Total (Item 2a + Item 2b)	22.291%	21.767%
3. Actuarial Accrued Liability for Active Members		
a. Present value of future benefits for active members	$ 915,492,433	
b. Less: present value of future normal costs	(327,352,075)	
c. Actuarial accrued liability	$ 588,140,358	
4. Total Actuarial Accrued Liability for:		
a. Retirees and beneficiaries	$ 578,971,295	
b. Inactive members	17,905,641	
c. Active members (Item 3c)	588,140,358	
d. Total	$ 1,185,017,294	$ 1,109,862,137
5. Actuarial Value of Assets	$ 779,484,342	$ 733,105,429
6. Unfunded Actuarial Accrued Liability (UAAL) (Item 4d - Item 5)	$ 405,532,952	$ 376,756,708
7. City Contribution Rate Needed to Fund Normal Cost and Amortize the UAAL:		
a. Over 20 Years	26.052%	24.407%
b. Over 30 Years	22.269%	20.566%
c. Over 40 Years	20.488%	18.765%
8. Allocation of Contribution Rate		
a. City contribution rate	21.313%	21.313%
b. Member rate	13.000%	13.000%
c. Total contribution rate	34.313%	34.313%
d. Total normal cost rate	22.291%	21.767%
e. Available contribution rate to amortize UAAL	12.022%	12.546%
f. Total contribution rate	34.313%	34.313%
9. Funding period based on statutory contribution rates and Actuarial Value of Assets (years)	35	28

Notes:

[1] December 31, 2016 results are based on the information provided in the prior actuary's actuarial valuation reports (a reasonable approach was taken to estimate certain results that were not included in prior reports)

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

		December 31, 2017
1.	Active Members (not in DROP at the valuation date)	
	a. Service Retirement	$ 818,329,780
	b. Disability Benefits	7,760,465
	c. Death Before Retirement	13,250,042
	d. Termination	12,424,558
	e. Total	$ 851,764,845
2.	Active DROP Members	$ 63,727,588
3.	Inactive Members	
	a. Vested Terminated	$ 17,560,422
	b. Non-Vested Terminated	345,219
	c. Total	$ 17,905,641
4.	Annuitants	
	a. Service Retirement	$ 549,747,093
	b. Disability Retirement	737,229
	c. Beneficiaries and QDROs	28,486,973
	d. Total	$ 578,971,295
5.	Total Actuarial Present Value of Future Benefits	$ 1,512,369,369

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

		December 31, 2017	December 31, 2016[1]
1.	Gross Normal Cost Rate		
	a. Service Retirement	20.792%	
	b. Disability Benefits	0.350%	
	c. Death Before Retirement	0.435%	
	d. Termination	0.697%	
	e. Total	22.274%	21.750%
2.	PRP Administrative Expenses	0.017%	0.017%
3.	Total Normal Cost	22.291%	21.767%
4.	Less: Member Rate	13.000%	13.000%
5.	Employer Normal Cost Rate	9.291%	8.767%

Notes:

[1] December 31, 2016 results are based on the information provided in the prior actuary's actuarial valuation reports

Table 4
Historical Summary of Active Member Data

	Active Members		Covered Payroll		Average Salary			
Valuation as of December 31[1],	Number[2]	Percent Increase	$ Amount (thousands)	Percent Increase	$ Amount	Percent Increase	Average Age	Average Service
(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

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 includes all active 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	$ 686,020,262	$ 684,935,746	$ 1,084,516
2.	Revenue for the year			
	a. Contributions for the year			
	i. Member Contributions - Payroll	$ 21,436,998	$ 21,436,998	$ 0
	ii. Member Contributions - Service Credit Purchases	2,914,966	2,914,966	0
	iii. City Contributions - Pension	34,382,346	34,382,346	0
	iv. City Contributions - Retiree Death Benefit	244,003	0	244,003
	v. City Contributions - Proportionate Retirement	514,855	514,855	0
	vi. Total	$ 59,493,168	$ 59,249,165	$ 244,003
	b. Net Investment income for the year	$ 82,072,002	$ 82,063,938	$ 8,064
	c. Total revenue	$ 141,565,170	$ 141,313,103	$ 252,067
3.	Disbursements for the year			
	a. Retirement and disability benefits	$ 49,064,793	$ 49,064,793	$ 0
	b. Lump Sum DROP Distributions	1,088,485	1,088,485	0
	c. Lump Sum PROP Distributions	4,756,155	4,756,155	0
	d. Retiree Death Benefits	109,203	0	109,203
	e. Refund of Member Contributions	1,529,368	1,529,368	0
	f. Administrative expenses	1,562,685	1,561,861	824
	g. Total disbursements	$ 58,110,689	$ 58,000,662	$ 110,027
4.	Increase in net assets (Item 2c - Item 3g)	$ 83,454,481	$ 83,312,441	$ 142,040
5.	Market value of assets at end of year (Item 1 + Item 4)	$ 769,474,743	$ 768,248,187	$ 1,226,556
6.	Actual net investment income (Item 2b - Item 3f)	$ 80,509,317	$ 80,502,077	$ 7,240
7.	Expected net income at 7.70%			
	a. Market value of assets at beginning of year	$ 52,823,560		
	b. Contributions for the year	2,290,487		
	c. Disbursements (excluding admin)	(2,177,098)		
	d. Total	$ 52,936,949		
8.	Excess investment income (Item 6 - Item 7d)	$ 27,572,368		
9.	Estimated dollar weighted market yield	11.7%	11.7%	0.6%
10.	Actuarial Value of Assets			
	a. Actuarial value of assets at the beginning of year	$ 733,105,429	$ 732,020,913	$ 1,084,516
	b. Actuarial value of assets at the end of year	$ 779,484,342	$ 778,257,786	$ 1,226,556
	c. Investment income for the year	$ 43,433,749	$ 43,426,509	$ 7,240
	d. Estimated dollar weighted actuarial yield	5.9%	5.9%	0.6%
	e. Expected return on the actuarial value of assets	$ 56,562,507		
	f. Asset gain/(loss) (Item 10c - Item 10e)	$ (13,128,758)		

Table 6
Development of Actuarial Value of Assets

			Total Assets
1.	Excess (shortfall) on assets for last five years:		
	a. Current year		$ 27,572,368
	b. Current year - 1		(13,879,414)
	c. Current year - 2		(52,498,923)
	d. Current year - 3		(13,701,378)
	e. Current year - 4		4,991,349
2.	Deferral of excess (shortfall) on assets:		
	a. Current year	(80% deferral)	22,057,894
	b. Current year - 1	(60% deferral)	(8,327,648)
	c. Current year - 2	(40% deferral)	(20,999,569)
	d. Current year - 3	(20% deferral)	(2,740,276)
	e. Total deferred		$ (10,009,599)
3.	Market value of assets		
	a. Including RDBF assets		$ 769,474,743
	b. Excluding RDBF assets		$ 768,248,187
4.	Actuarial value of assets		
	a. Including RDBF assets (Item 3a - Item 2e)		$ 779,484,342
	b. Excluding RDBF assets		$ 778,257,786

Table 7
History of Investment Return Rates

Year Ending December 31,[1]	Market Returns[2]	Actuarial
(1)	(3)	(4)
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%
Average Returns		
Last Five Years:	6.3%	5.8%
Last Ten Years:	2.6%	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

Table 8
History of Cash Flow
(thousands $)

Year Ending December 31[1],	Contributions	Distributions and Expenditures: Benefit Payments and Refunds	Distributions and Expenditures: Administrative Expenses[2]	Distributions and Expenditures: Total	External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)
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%

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		Year Ending December 31, 2017
(1)		(2)
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year		$ 376,756,708
2. Normal cost for the year		35,893,780
3. Contributions for the year (excluding service purchases)		(56,578,202)
4. Interest at 7.70%		
a. On UAAL		$ 29,010,267
b. On normal cost		1,381,911
c. On contributions		(2,178,261)
d. Total		$ 28,213,917
5. Expected UAAL, end of year (Sum of Items 1 through 4)		384,286,203
6. Actual UAAL, end of year		405,532,952
7. Total (gain)/loss for the year (Item 6 - Item 5)		$ 21,246,749
B. Source of gains and losses	% of AAL	
1. Asset (Gain)/Loss	1.12%	$ 13,128,758
2. Demographic (Gains)/Losses	0.69%	8,117,991
3. Total	1.81%	$ 21,246,749

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

Valuation Date December 31[1], (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(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%

Notes:

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

Table 11
Historical Contribution Rates

Valuation as of December 31[1],	Contributions from: City[2]	Members	Total	Total Normal Cost Rate[3]	20-Year Actuarially Determined Contribution[4]	30-Year Actuarially Determined Contribution[5]
2009	18.630%	13.000%	31.630%	22.372%		
2010	19.630%	13.000%	32.630%	22.472%		
2011	20.630%	13.000%	33.630%	23.277%		
2012	21.630%	13.000%	34.630%	21.774%		
2013	21.630%	13.000%	34.630%	21.806%		
2014	21.630%	13.000%	34.630%	21.647%		
2015	21.313%	13.000%	34.313%	22.473%		
2016	21.313%	13.000%	34.313%	21.767%	24.407%	20.566%
2017	21.313%	13.000%	34.313%	22.291%	26.052%	22.269%

Notes:

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

[2] City contribution rates were 18.000% prior to 1/1/2009; 18.250% effective 1/1/2009; 18.630% effective 10/1/2009; 19.630% effective 10/1/2010; 20.630% effective 10/1/2011; 21.630% effective 10/1/2012; 21.313% effective 10/1/2015

[3] Includes load for assumed PRP administrative expenses and normal cost associated with the death benefit fund

[4] Employer contribution rate needed to fund normal cost plus amortize the unfunded accrued liability over 20 years

[5] Employer contribution rate needed to fund normal cost plus amortize the unfunded accrued liability over 30 years

Table 12
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.

	Pension Fund	Retiree Death Benefit Fund
1. Total Actuarial Present Value of Future Benefits		
a. Active Members	$ 914,177,181	$ 1,315,252
b. Inactive Members	17,844,703	60,938
c. Annuitants	576,705,918	2,265,377
d. Total	$ 1,508,727,802	3,641,567
2. Present Value of Future Normal Costs	$ 326,911,098	$ 440,977
3. Actuarial Accrued Liability (item 1 - item 2)	$ 1,181,816,704	$ 3,200,590
4. Valuation Assets	$ 778,257,786	$ 1,226,556
5. Unfunded Actuarial Accrued Liability (UAAL) (item 3 - item 4)	$ 403,558,918	$ 1,974,034
6. City Contribution Rate to be Allocated to the Retiree Death Benefit Fund		
a. Normal Cost Rate		0.033%
b. Payment Required to Amortize UAAL over 18 years (as of 12/31/2017)		0.088%
c. Total Allocated Rate		0.121%

SECTION D

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions for Austin Police Retirement System

Creditable 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 over the last 120 months of service.

Member Contributions

13.0% of Earnings.

City Contributions

21.313% effective October 1, 2015.

Normal Retirement

Date:

Earlier of age 62, age 55 and 20 years of Creditable Service, or 23 years of Creditable Service, regardless of age (including Proportionate Service Credit and excluding pre-membership military service).

Benefit:

3.20% of Average Final Compensation times Creditable 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.

Forward DROP

Eligibility:

Completion of 23 years of Creditable Service (including Proportionate Service Credit and excluding military 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.

Year of DROP Participation	Fee/Charge
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 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 2.25%.

Cost of Living Adjustment

Eligibility:

Normal Retirement.

Amount:

Determined by the actuary if providing a COLA (not to exceed 6.0% per year) will not impair financial stability of the System. Post-Retirement benefit increases will automatically be provided when the System's benefit accrual rate is increased.

SECTION E

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, 2016 actuarial valuation. In order to assess the reasonableness of the assumptions in our first actuarial valuation for APRS, we have relied on the analysis prepared by the prior actuary. We have also recommended that the Board conduct a five-year experience study to review the assumptions prior to the next actuarial valuation.

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 City contribution rate (established by statute) and to describe the current financial condition of APRS.

The actuarial valuation uses the Entry Age Normal 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 provided in excess of the employer normal cost is applied to amortize the UAAL.

The funding period is calculated as the number of years required to fully amortize the UAAL, and is calculated assuming: (a) future earnings on actuarial value of assets, net of administrative and investment-related expenses, will equal 7.70% per year, (b) there will be no changes in assumptions, (c) the number of active members will remain unchanged, (d) payroll for covered employees will grow at 4.00% each year, and (e) City contributions will remain the same percentage of payroll as described in Section D of the valuation report.

The 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.

III. Actuarial Value of Assets

All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

IV. Actuarial Assumptions

Investment Return: 7.70% per year, net of all expenses, except as noted below

Administrative Expenses: 0.017% of valuation payroll per year for assumed additional administrative expenses for participation in the Proportionate Retirement Program.

Salary Increases: Salary increases are comprised of a service based component on (determined on service with APRS) shown below and a general wage increase of 3.25%.

Years of APRS Service	Increases in Salary
0	22.5%
1	9.5%
2	4.5%
3-4	0.5%
5	5.0%
6	2.0%
7-8	0.3%
9	6.0%
10-12	0.2%
13	6.5%
14	0.7%
15	6.5%
16 & Above	0.0%

Payroll Growth: 4.00% per year for amortization of the Unfunded Actuarial Accrued Liability.

Decrement and Pay Increase 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 beginning of the valuation year. Pay increases are assumed to occur in the middle of the year.

Marriage Assumptions: 85% of active members are married and female spouses are assumed to be 3 years younger than male spouses

Mortality Decrements:

Mortality Rates – All Lives

RP-2000 Combined Healthy without projection – Sex Distinct. No mortality improvement is assumed before or after the measurement date.

Service Retirement Decrements (Age or service at which member leaves active service):

Active Employees

Service based rates are based on APRS service only and apply after a Member is eligible for retirement with combined APRS and Proportionate Retirement Program (PRP) service. Entry ages are determined based on APRS service only.

Age based rates are based on age and apply after a Member is eligible for retirement with combined APRS and PRP service. Entry ages are determined based on APRS service only.

Base rates for eligible members:

APRS Service	Entry Ages 22 & Under	Entry Ages 23-27	Entry Ages 28-32	**Age**	Entry Ages 33-37	Entry Ages 38-42	Entry Ages 43 & Over
0-22	0.0625	0.125	0.125	**33-37**	0.05		
23	0.1875	0.1875	0.28125	**38-42**	0.05	0.10	
24-25	0.125	0.125	0.1875	**43-51**	0.05	0.10	0.10
26-27	0.1875	0.1875	0.3125	**52**	0.20	0.10	0.10
28	0.3125	0.3125	0.3125	**53**	0.35	0.10	0.10
29	0.3125	0.3125	0.375	**54**	0.75	0.10	0.10
30	0.375	0.375	0.50	**55**	0.20	0.10	0.10
31	0.375	0.375	0.625	**56**	0.25	0.10	0.10
32	0.375	0.375	1.00[1]	**57**	0.30	0.10	0.10
33	0.375	0.375		**58**	0.35	0.10	0.10
34	0.50	0.50		**59**	0.50	0.10	0.10
35-36	0.50	0.625		**60**	1.00	0.50	0.10
37	0.625	1.00[1]		**61**		0.35	0.10
38-41	0.625			**62**		0.35	0.80
42	1.00[1]			**63-64**		0.35	0.40
				65		1.00	1.00

[1]100% retirement rate will be effective at age 60, if earlier.

Disability Retirement Decrements:

Active Employees

- 55% of disablements are assumed to be service related.
- No disablements are assumed after a member reaches retirement eligibility

Age	Probability of Disablement During Year
20	0.000070
22	0.000080
24	0.000090
26	0.000105
28	0.000125
30	0.000155
32	0.000200
34	0.000245
36	0.000270
38	0.000310
40	0.000460
42	0.000660
44	0.000865
46	0.001275
48	0.001670
50	0.001895
52	0.002020
54	0.002280
56	0.002660
58	0.003300
60	0.004555
62 & Above	0

Termination Decrements for Reasons Other Than Death or Retirement:

The below rates are for members not eligible for service retirement. Service includes APRS service (i.e. excludes pre-membership military service) and Proportionate Retirement Program service.

Active Employees

Combined Years of Service	Probability of Termination During Year
0	0.075
1-2	0.030
3-4	0.015
5-6	0.010
7-9	0.005
10-13	0.010
14 & Above	0.005

Withdrawal of Employee Contributions: Members that terminate with a vested benefit will receive his or 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.

DROP Election: For members who had attained 23 years of service before April 1, 2015, 75% of those assumed to retire who are eligible for at least a 12-month DROP lump sum will make such an election (RETRO) or will have made such an election (FORWARD). The following table shows the allocation between RETRO and FORWARD.

Retirement Eligibility Service at Termination of Employment	No DROP Elected	RETRO DROP Elected	FORWARD DROP Elected
23 or less	100%	0%	0%
24	25%	75%	0%
25	25%	65%	10%
26	25%	60%	15%
27-32	25%	55%	20%
33	25%	60%	15%
34	25%	65%	10%
35 or more	25%	75%	0%

For members with less than 23 years of service at April 1, 2015 but with at least 23 years of service at February 17, 2016, 75% of those assumed to retire who are eligible for at least a 12-month DROP lump sum will have made an election to enter the forward DROP plan.

For members with less than 23 years of service as of February 17, 2016, the normal benefit accrual formula was utilized for purposes of determining plan liabilities. This procedure was a result of the prior actuary's determination that the DROP provisions were cost-neutral.

DROP Period Election: Members are assumed to elect the maximum DROP period for which they are eligible.

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 will be 2.25%.

Census Data and Assets

- The valuation was based on members of APRS as of December 31, 2017 and does not take into account future members, with the exception of determining the funding period.
- 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.

SECTION F

DETAILED SUMMARIES OF MEMBERSHIP DATA

Detailed Summaries of Membership Data

Table A

Summary of Active Membership Data

		December 31, 2017	
Active members			
a.	Number		1,811
b.	Total payroll at the valuation date	$	156,342,997
c.	Average salary	$	86,330
d.	Average age		39.9
e.	Average benefit service		11.2
Active members currently in DROP			
a.	Number		55
b.	Total payroll at the valuation date	$	6,147,563
c.	Average salary	$	111,774
d.	Average age		54.3
e.	Average benefit service		27.6
f.	Total annual benefits	$	4,684,698
g.	Average annual benefit	$	85,176
h.	Total DROP Balance	$	10,032,229
Vested inactive members			
a.	Number		45
b.	Total annual deferred benefits	$	2,080,565
c.	Average annual deferred benefit	$	46,235
d.	Average age		49.2
Nonvested inactive members			
a.	Number		53
b.	Member contributions due	$	345,219
c.	Average refund due	$	6,514

Table B

Summary of Annuitant Membership Data

		December 31, 2017
Service Retirees		
a.	Number	758
b.	Total annual benefits	$ 50,210,187
c.	Average annual benefit	$ 66,240
d.	Average age	62.6
e.	Total PROP Balance	$ 29,962,326
Disability Retirees		
a.	Number	2
b.	Total annual benefits	$ 63,581
c.	Average annual benefit	$ 31,791
d.	Average age	52.9
e.	Total PROP Balance	$ 0
Beneficiaries		
a.	Number	60
b.	Total annual benefits	$ 2,688,642
c.	Average annual benefit	$ 44,811
d.	Average age	72.2
e.	Total PROP Balance	$ 202,290
QDROs		
a.	Number	47
b.	Total annual benefits	$ 653,309
c.	Average annual benefit	$ 13,900
d.	Average age	58.2
e.	Total PROP Balance	$ 0
Total Members in Payment		
a.	Number	867
b.	Total annual benefits	$ 53,615,719
c.	Average annual benefit	$ 61,841
d.	Average age	63.0
e.	Total PROP Balance	$ 30,164,616

Table C

Status Reconciliation

	Active	Active DROP	Vested Terminated	Non-vested Terminated	Retiree	Disability Retiree	Beneficiary	QDRO
Beginning of Year	**1,837**	**46**	**30**	**6**	**711**	**2**	**53**	**37**
Re-hired	-	-	-	-	-	-	-	-
Termination, non-vested	9	-	1	-	-	-	-	-
Termination, vested	17	-	-	-	-	-	-	-
Entered DROP	18	-	-	-	-	-	-	-
Retirement	45	9	-	-	-	-	-	-
Disability retirement	-	-	-	-	-	-	-	-
Contribution refund	30	-	2	2	-	-	-	-
Death	3	-	-	-	7	-	-	-
Total Out	**122**	**9**	**3**	**2**	**7**	**0**	**0**	**0**
Continuing	**1,715**	**37**	**27**	**4**	**704**	**2**	**53**	**37**
Total In	**96**	**18**	**18**	**49**	**54**	**0**	**7**	**10**
End of Year	**1,811**	**55**	**45**	**53**	**758**	**2**	**60**	**47**

Table D

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	46									46
	$ 52,718									$ 52,718
25 - 29	149	23								172
	$ 59,434	$ 73,669								$ 61,337
30 - 34	144	151	51							346
	$ 66,138	$ 75,814	$ 83,482							$ 72,917
35 - 39	51	110	139	34	1					335
	$ 66,766	$ 77,557	$ 85,898	$ 97,353	$ 107,691					$ 81,474
40 - 44	29	58	83	178	41					389
	$ 68,379	$ 77,606	$ 85,715	$ 103,990	$ 113,459					$ 94,500
45 - 49	9	34	51	118	120	20				352
	$ 73,152	$ 81,924	$ 87,221	$ 103,676	$ 116,201	$ 114,540				$ 103,298
50 - 54		17	19	45	44	31	4			160
		$ 91,492	$ 84,560	$ 108,125	$ 109,455	$ 121,321	$ 110,816			$ 106,549
55 - 59	1	7	5	13	8	13	8			55
	$ 78,300	$ 95,176	$ 88,916	$ 99,871	$ 105,432	$ 110,619	$ 110,428			$ 102,770
60 - 64	1	2		1	4	3				11
	$ 142,297	$ 91,249		$ 107,799	$ 101,631	$ 110,509				$ 106,423
Over 64										
Total	430	402	348	389	218	67	12			1,866
	$ 62,957	$ 78,021	$ 85,665	$ 103,665	$ 113,622	$ 116,736	$ 110,558			$ 87,080

Table E

Annuitants – Distribution by Age and Category

Age	Number	Annual Benefit	Average Annual Benefit
Under 60	333	23,179,455	69,608
60 - 64	213	13,371,394	62,776
65 - 69	160	9,007,117	56,294
70 - 74	78	4,089,741	52,433
75 - 79	39	1,887,972	48,410
Over 79	44	2,080,040	47,274
Total	867	53,615,719	61,841

SECTION G

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 it 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.