

AUSTIN POLICE
RETIREMENT SYSTEM

ACTUARIAL VALUATION
AS OF DECEMBER 31, 2016



July 26, 2017

Ms. Pattie Featherston, Executive Director
Austin Police Retirement System
2520 South IH 35, Suite 100
Austin, TX 78704

Re: Austin Police Retirement System

Dear Ms. Featherston:

We are pleased to present to the Board this report of the annual actuarial valuation of the Austin Police Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year(s). Please note that this valuation may not be applicable for any other purposes.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects applicable laws and regulations issued to date at the state and federal level. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations.

In conducting the valuation, we have relied on personnel, plan design, financial reports, and asset information supplied by the System, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

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

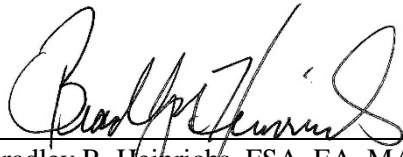
To our knowledge, no associate of Foster & Foster Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Austin, nor does anyone at Foster & Foster Inc. act as a member of the Board of Trustees of the Austin Police Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact me at 239-433-5500.

Respectfully submitted,

Foster & Foster Inc.

By:



Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #17-6901

BRH/lke

Enclosures

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SUMMARY OF REPORT

The annual actuarial valuation of the Austin Police Retirement System, performed as of December 31, 2016, has been completed and the results are presented in this Report. The pension costs, compared with those developed in the December 31, 2015 actuarial valuation report, are as follows:

<u>Valuation Date</u>	<u>New Assumptions</u> <u>12/31/2016</u>	<u>Old Assumptions</u> <u>12/31/2016</u>	<u>Old Assumptions</u> <u>12/31/2015</u>
Current Normal Cost Rate	21.724%	22.411%	22.430%
% of Payroll Under Assumed Ret. Age			
<i>Includes 0.017% of payroll for assumed additional administrative expenses for participation in the Proportionate Retirement Program</i>			
<hr/>			
Actuarial Accrued Liability (AAL)	\$1,106,505,413	\$1,099,742,044	\$1,036,118,138
Actuarial Value of Assets (AVA)	\$732,020,913	\$732,020,913	\$689,767,838
Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	\$374,484,500	\$367,721,131	\$346,350,300
Funded Ratio (AVA / AAL)	66.2%	66.6%	66.6%
Amortization Period	27.3 years	32.7 years	31.3 years
<hr/>			
Expected City Contribution Rate	21.313%	21.313%	21.313%
Expected Member Contribution Rate	13%	13%	13%
Total Expected Contribution Rate	34.313%	34.313%	34.313%
<hr/>			
City 20-Year Funding Cost ¹	24.407%		
City 30-Year Funding Cost ²	20.566%		
City 40-Year Funding Cost ¹	18.765%		

¹ The Texas Pension Review Board Guidelines for Actuarial Soundness state that funding should be adequate to amortize the UAAL over a period not to exceed 40 years, with 15-25 years being a more preferable target.

² Per Section 802.101(a) of the Texas Government Code, the actuarial valuation must include a recommended contribution rate needed for the system to achieve and maintain an amortization period that does not exceed 30 years.


During the past year, the plan has realized net unfavorable actuarial experience. The primary component of actuarial loss was attributable to a 5.33% investment return (Actuarial Asset basis) which fell short of the 7.80% assumption.

Additionally, the Board of Trustees approved a number of actuarial assumption changes, as discussed on the following page. As shown, this resulted in a 5.4 year reduction in the required amortization period. The specific details of the impact associated with implementing these changes are displayed in the comparative summary section of this report.

The balance of this Report presents additional details of the actuarial valuation and the general operation of the Fund. The undersigned would be pleased to meet with the Board of Trustees in order to discuss the Report and answer any pending questions concerning its contents.

Respectfully submitted,

FOSTER & FOSTER INC.

By: 
Bradley R. Heinrichs, FSA, EA, MAAA

By: 
Drew D. Ballard, EA, MAAA

CHANGES SINCE PRIOR VALUATION

1. Benefit Provisions

There have been no changes in benefits since the prior valuation.

2. Actuarial Assumptions/Methods

As approved by the Board of Trustees, there have been multiple changes to the actuarial assumptions since the prior valuation, as detailed below.

- The investment return assumption has been decreased from 7.80% to 7.70% per year compounded annually, net of all expenses.
- The core inflation rate assumption has been decreased from 3.25% to 3.00% per year
- The general wage inflation rate assumption has been decreased from 3.50% to 3.25% per year
- The assumed rates of salary increase have been amended at most service points
- The payroll growth assumption has been increased from 3.50% to 4.00% per year

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS
(Exclusive of Retiree Death Benefit Fund)

Valuation Date	New Assums <u>12/31/2016</u>	Old Assums <u>12/31/2016</u>	Old Assums <u>12/31/2015</u>
A. Participant Data			
Actives	1,837	1,837	1,761
Service Retirees + DROP	757	757	711
Beneficiaries	53	53	49
QDRO	37	37	38
Disability Retirees	2	2	3
Terminated Vested	36	36	41
 Total	 <u>2,722</u>	 <u>2,722</u>	 <u>2,603</u>
 Total Annual Payroll	 163,894,324	 163,894,324	 155,832,755
Payroll Under Assumed Ret. Age	158,538,425	158,538,425	151,566,341
 Annual Rate of Payments to:			
Service Retirees + DROP	50,142,738	50,142,738	46,036,724
Beneficiaries	2,271,558	2,271,558	2,109,280
QDRO	534,344	534,344	548,246
Disability Retirees	63,581	63,581	103,149
Terminated Vested	868,486	868,486	808,433
 B. Assets			
Actuarial Value	732,020,913	732,020,913	689,767,838
Market Value	686,020,262	686,020,262	644,174,137
 C. Liabilities			
Present Value of Benefits			
Active Members			
Retirement Benefits	829,471,098	847,314,962	812,353,446
Termination Benefits	12,568,306	12,619,581	12,215,439
Death Benefits	14,455,022	14,683,541	14,006,808
Disability Benefits	8,615,341	8,723,494	8,544,443
Service Retirees + DROP	558,941,001	554,644,179	508,374,160
Beneficiaries	19,051,612	18,922,651	17,580,394
QDRO	5,630,547	5,584,309	5,782,283
Disability Retirees	740,654	733,958	1,223,245
Terminated Vested	3,288,212	3,229,703	3,502,746
 Total	 <u>1,452,761,793</u>	 <u>1,466,456,378</u>	 <u>1,383,582,964</u>

Valuation Date	New Assums <u>12/31/2016</u>	Old Assums <u>12/31/2016</u>	Old Assums <u>12/31/2015</u>
C. Liabilities - (Continued)			
Present Value of Future Salaries	1,638,289,042	1,682,596,405	1,596,134,543
Normal Cost (Entry Age Normal)			
Retirement Benefits	30,882,157	31,889,987	30,493,633
Termination Benefits	982,924	987,914	955,257
Death Benefits	705,391	719,085	688,393
Disability Benefits	567,048	573,182	557,899
Total Normal Cost	<u>33,137,520</u>	<u>34,170,168</u>	<u>32,695,182</u>
Present Value of Future Normal Costs	346,256,380	366,714,334	347,464,826
Actuarial Accrued Liability			
Retirement Benefits	503,058,934	501,117,031	484,457,250
Vested Benefits	4,927,801	4,789,472	4,763,100
Death Benefits	7,436,512	7,359,681	7,052,252
Disability Benefits	3,430,140	3,361,060	3,382,708
Inactives	587,652,026	583,114,800	536,462,828
Total Actuarial Accrued Liability	<u>1,106,505,413</u>	<u>1,099,742,044</u>	<u>1,036,118,138</u>
Unfunded Actuarial Accrued Liability (UAAL)	374,484,500	367,721,131	346,350,300
Funded Ratio (AVA/AL)	66.2%	66.6%	66.6%
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	587,652,026	583,114,800	536,462,828
Actives	165,703,677	160,915,923	148,820,963
Member Contributions	<u>165,422,045</u>	<u>165,422,045</u>	<u>157,316,626</u>
Total	918,777,748	909,452,768	842,600,417
Non-vested Accrued Benefits	27,970,004	27,422,054	36,191,343
Total Present Value Accrued Benefits	<u>946,747,752</u>	<u>936,874,822</u>	<u>878,791,760</u>
Funded Ratio (MVA/PVAB)	72.5%	73.2%	73.3%

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS
(Retiree Death Benefit Fund)

Valuation Date	New Assums <u>12/31/2016</u>	Old Assums <u>12/31/2016</u>	Old Assums <u>12/31/2015</u>
Present Value of Benefits			
Active Members	1,356,044	1,320,442	1,285,118
Retired and Terminated Vested Members	2,509,543	2,479,340	2,311,107
Total	<u>3,865,587</u>	<u>3,799,782</u>	<u>3,596,225</u>
Present Value of Future Normal Costs	508,863	505,050	485,114
Normal Cost	67,612	66,741	65,040
Actuarial Accrued Liability	3,356,724	3,294,732	3,111,111
Asset Value of Fund	1,084,516	1,084,516	929,148
Unfunded Actuarial Accrued Liability (UAAL)	2,272,208	2,210,216	2,181,963
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 19 years (as of 12/31/2016)			
% of Total Annual Payroll	0.102	0.104	0.104
Normal Cost (with interest)			
% of Total Annual Payroll	0.043	0.042	0.043
Total Required City Contribution Rate Allocated to the Retiree Death Benefit Fund			
% of Total Annual Payroll	0.145	0.146	0.147

* 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.

GAIN/LOSS ANALYSIS
(Exclusive of Retiree Death Benefit Fund)

a. Total Gain/(Loss)

1. UAAL, Beginning of Year	346,350,300
2. Normal Cost Applicable for Year	32,695,182
3. Interest on (1) and (2)	29,565,548
4. Contributions During Year	55,879,173
5. Interest on (4)	2,138,372
6. Expected UAAL, End of Year: (1)+(2)+(3)-(4)-(5)	350,593,485
7. Actual UAAL, End of Year (Before Changes)	367,721,131
 Total Actuarial Gain/(Loss)	 (17,127,646)

b. Gain/(Loss) on Assets

1. Actuarial Value of Assets (AVA), Beginning of Year	689,767,838
2. Contributions Less Benefit Payments	5,121,672
3. Expected Investment Earnings	53,997,886
4. Expected AVA, End of Year: (1)+(2)+(3)	748,887,396
5. Actual Actuarial Value of Assets, End of Year	732,020,913
 Gain/(Loss) on Assets	 (16,866,483)

c. Gain/(Loss) on Liabilities

1. Expected Actuarial Accrued Liability: a(6)+b(4)	1,099,480,881
2. Actual Actuarial Accrued Liability (Before Changes)	1,099,742,044
 Gain/(Loss) on Liabilities	 (261,163)

ACTUARIAL ASSUMPTIONS AND METHODS
(Effective December 31, 2016)

<u>Mortality Rates – All Lives</u>	RP-2000 Combined Healthy without projection – Sex Distinct. We believe this sufficiently accommodates expected mortality improvements.
<u>Interest Rate</u>	7.70% per year, compounded annually, net of all expenses. This is supported by the asset allocation of the trust and the long-term expected return by asset class.
<u>Core Inflation</u>	3.00% per year. This is reasonable based upon long-term expectations.
<u>Payroll Growth</u>	4.00% per year for amortization of the Unfunded Actuarial Accrued Liability. This was approved in conjunction with the 2017 review of actuarial assumptions and methods.
<u>Administrative Expenses (PRP)</u>	0.017% of payroll for assumed additional administrative expenses for participation in the Proportionate Retirement Program.
<u>DROP Election</u>	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). See following tables for allocation between RETRO and FORWARD. This is reasonable based upon long-term expectations.
<u>DROP Period Election</u>	Members elect the maximum period eligible. This is reasonable based upon long-term expectations.
<u>PROP Investment Accounts</u>	75% retiring in DROP will elect to leave their lump sum in the System until age 60. Average annual rate credited to the PROP accounts will be 2.25%. This is reasonable based upon long-term expectations.
<u>Marital Status</u>	85% of actives are assumed to be married at time of benefit commencement. Females are assumed to be 3 years younger than Males. This is reasonable based upon long-term expectations.
<u>Funding Method</u>	Entry Age Normal Actuarial Cost Method

Actuarial Asset Method

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. The asset value of the Retiree Death Benefit Fund is then subtracted to determine the Actuarial Value of Assets.

Retirement Rates

See following tables. The assumed rates of retirement were approved in conjunction with the 2015 review of the actuarial assumptions and methods.

Termination Rates

See following tables. The assumed rates of termination were approved in conjunction with the 2016 review of the actuarial assumptions and methods.

Disability Rates

See following tables. 55% of disablements are assumed to be service related. The assumed rates of disablement were approved in conjunction with the 2015 review of the actuarial assumptions and methods.

Salary Increases

See following tables. The assumed rates of salary increase were approved in conjunction with the 2017 review of actuarial assumptions and methods.

Pre-Retirement Death Payment Form

Married: Joint and 100% to Survivor
Single: 15-Year Certain and Life Annuity

Retirement Rates

APRS Service	For Entry Ages Under 32 ¹			For Entry Ages 33 and Above ³			
	22 & Under	23-27	28-32	AGE	33-37	38-42	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	0.125	0.125	0.1875	43-47	0.05	0.10	0.10
25	0.125	0.125	0.1875	48	0.05	0.10	0.10
26	0.1875	0.1875	0.3125	49	0.05	0.10	0.10
27	0.1875	0.1875	0.3125	50	0.05	0.10	0.10
28	0.3125	0.3125	0.3125	51	0.05	0.10	0.10
29	0.3125	0.3125	0.375	52	0.20	0.10	0.10
30	0.375	0.375	0.50	53	0.35	0.10	0.10
31	0.375	0.375	0.625	54	0.75	0.10	0.10
32	0.375	0.375	1.00 ²	55	0.20	0.10	0.10
33	0.375	0.375		56	0.25	0.10	0.10
34	0.50	0.50		57	0.30	0.10	0.10
35	0.50	0.625		58	0.35	0.10	0.10
36	0.50	0.625		59	0.50	0.10	0.10
37	0.625	1.00 ²		60	1.00	0.50	0.10
38	0.625			61		0.35	0.10
39	0.625			62		0.35	0.80
40	0.625			63		0.35	0.40
41	0.625			64		0.35	0.40
42	1.00 ²			65		1.00	1.00

¹ 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.

² 100% retirement rate will be effective at age 60, if earlier.

³ 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.

Termination Rates

<u>Combined Years of Service¹</u>	<u>Probability of Termination During Year</u>
0	0.075
1	0.030
2	0.030
3	0.015
4	0.015
5	0.010
6	0.010
7	0.005
8	0.005
9	0.005
10	0.010
11	0.010
12	0.010
13	0.010
14	0.005
15 & Above	0.005

¹ APRS service combined with Proportionate Retirement Program service.

Disability Rates

<u>Age</u>	<u>Probability of Disablement During Year</u>
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

Salary Increases

<u>Years of Service</u>	<u>Increase in Salary¹</u>
0	22.5%
1	9.5
2	4.5
3	0.5
4	0.5
5	5.0
6	2.0
7	0.3
8	0.3
9	6.0
10	0.2
11	0.2
12	0.2
13	6.5
14	0.7
15	6.5
16+	0.0

¹ Expected increases in salary as shown above are in addition to 3.25% increase per year due to general wage increases.

Retirement Option Election

(Members with 23+ years of APRS service on April 1, 2015)

<u>Service at Termination of Employment</u>	<u>No DROP Elected</u> ¹	<u>RETRO DROP Elected</u>	<u>FORWARD DROP Elected</u>
23 or less	100%	0%	0%
24	25	75	0
25	25	65	10
26	25	60	15
27	25	55	20
28	25	55	20
29	25	55	20
30	25	55	20
31	25	55	20
32	25	55	20
33	25	60	15
34	25	65	10
35	25	75	0
36	25	75	0
37	25	75	0
38	25	75	0
39	25	75	0
40	25	75	0
41	25	75	0
42	25	75	0

¹ Police officers elect a type of service retirement benefit that does not include payment of a lump sum distribution.

Retirement Option Election

(Members with less than 23 years of APRS service on April 1, 2015)

<u>Service at Termination of Employment</u>	<u>No DROP Elected</u> ¹	<u>FORWARD DROP Elected</u>
23 or less	100%	0%
24	25	75
25	25	75
26	25	75
27	25	75
28	25	75
29	25	75
30	25	75
31	25	75
32	25	75
33	25	75
34	25	75
35	25	75
36	25	75
37	25	75
38	25	75
39	25	75
40	25	75
41	25	75
42	25	75

¹ Police officers elect a type of service retirement benefit that does not include payment of a lump sum distribution.

VALUATION NOTES

Total Annual Payroll is the annual rate of pay as of the valuation date of all active and Forward-DROP participants.

Payroll under Assumed Retirement Age is the annual rate of pay as of the valuation date of all active participants who are not subject to a 100% probability of retirement on the valuation date.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation. The funding span utilized in determination of the normal cost rate for each benefit is to the last age at which that benefit is payable.

(a) The normal cost accrual rate equals:

(i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by

(ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age .

(b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

(c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.

(d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2016

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	23,014,505.90
Checking Account	2,233,501.25
Prepaid Expenses	7,664.67
Total Cash and Equivalents	25,255,671.82
Receivables:	
Member Contributions in Transit	408,847.22
Member Buy-Back Contributions	9,701.60
City Contributions	670,289.30
Investment Income	190,489.09
Total Receivable	1,279,327.21
Investments:	
Partnership Interests	46,928,956.00
Corporate Bonds	73,842,265.53
Corporate Stocks	379,721,794.22
International Government Securities	35,905,897.02
Real Estate Interests	91,458,472.98
Alternatives	33,282,424.13
Retiree Death Benefit Fund	1,084,516.46
Total Investments	662,224,326.34
Net Fixed Assets	740,036.59
Total Assets	689,499,361.96
<u>LIABILITIES</u>	
Payables:	
Refunds of Member Contributions	768,812.89
Other	2,710,287.07
Total Liabilities	3,479,099.96
NET POSITION RESTRICTED FOR PENSIONS	686,020,262.00

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED DECEMBER 31, 2016
Market Value Basis

ADDITIONS

Contributions:

Member	20,623,125.40
Buy-Back	1,668,173.71
City	33,092,668.17
City for Proportionate Retirement Program	495,205.45
City for Retiree Death Benefit	226,308.30

Total Contributions 56,105,481.03

Investment Income:

Miscellaneous Income	4,067,810.47	
Net Realized Gain (Loss)	23,682,775.64	
Unrealized Gain (Loss)	8,082,022.81	
Net Increase in Fair Value of Investments		35,832,608.92
Interest & Dividends		3,888,744.03
Less Investment Expense ¹		(1,756,472.26)

Net Investment Income 37,964,880.69

Total Additions 94,070,361.72

DEDUCTIONS

Distributions to Members:

Benefit Payments	45,590,933.78
Lump Sum DROP Distributions	730,506.62
Lump Sum PROP Distributions	3,439,890.58
Retiree Death Benefits	70,000.00
Refunds of Member Contributions	996,170.22

Total Distributions 50,827,501.20

Administrative Expense 1,396,735.61

Total Deductions 52,224,236.81

Net Increase in Net Position 41,846,124.91

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 644,174,137.09

End of the Year 686,020,262.00

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION

December 31, 2016

Actuarial Assets for funding purposes are developed by recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Plan Year Ending	Gain/(Loss)	<u>Gains/(Losses) Not Yet Recognized</u>				
		Amounts Not Yet Recognized by Valuation Year				
		2017	2018	2019	2020	2021
12/31/2012	8,502,880	0	0	0	0	0
12/31/2013	4,991,349	998,269	0	0	0	0
12/31/2014	(13,701,378)	(5,480,551)	(2,740,274)	0	0	0
12/31/2015	(52,498,923)	(31,499,354)	(20,999,569)	(10,499,783)	0	0
12/31/2016	(13,879,414)	(11,103,531)	(8,327,648)	(5,551,766)	(2,775,882)	0
Total		(47,085,167)	(32,067,491)	(16,051,549)	(2,775,882)	0

Development of Investment Gain/Loss

Market Value of Assets, including Retiree Death Benefit Fund, 12/31/2015	644,174,137
Contributions Less Benefit Payments	5,277,980
Expected Investment Earnings*	50,447,559
Actual Net Investment Earnings	36,568,145
2017 Actuarial Investment Gain/(Loss)	<u>(13,879,414)</u>

*Expected Investment Earnings = $0.078 * 644,174,137 + [(1 + 0.078)^{0.5} - 1] * 5,277,980$

Development of Actuarial Value of Assets

(1) Market Value of Assets, including Retiree Death Benefit Fund, 12/31/2016	686,020,262
(2) Gains/(Losses) Not Yet Recognized	<u>(47,085,167)</u>
(3) Actuarial Value of Assets, 12/31/2016, (1) - (2)	733,105,429

(A) 12/31/2015 Actuarial Assets, including Retiree Death Benefit Fund: 690,696,986

(I) Net Investment Income:

1. Interest, Dividends and Misc Income	7,956,555
2. Realized Gains (Losses)	23,682,776
3. Change in Actuarial Value	8,488,972
4. Investment and Administrative Expenses	<u>(3,153,208)</u>
Total	36,975,094

(B) 12/31/2016 Actuarial Assets, including Retiree Death Benefit Fund: 733,105,429

Actuarial Assets Rate of Return = $2I/(A+B-I)$: 5.33%

Market Value of Assets Rate of Return: 5.65%

12/31/2016 Limited Actuarial Assets, including Retiree Death Benefit Fund: 733,105,429

12/31/2016 Limited Net Actuarial Assets, excluding Retiree Death Benefit Fund: 732,020,913

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
 DECEMBER 31, 2016
 Actuarial Asset Basis

REVENUES

Contributions:		
Member	20,623,125.40	
Buy-Back	1,668,173.71	
City	33,092,668.17	
City for Proportionate Retirement Program	495,205.45	
City for Retiree Death Benefit	226,308.30	
 Total Contributions		 56,105,481.03
Earnings from Investments:		
Interest & Dividends	3,888,744.03	
Miscellaneous Income	4,067,810.47	
Net Realized Gain (Loss)	23,682,775.64	
Change in Actuarial Value	8,488,972.18	
 Total Earnings and Investment Gains		 40,128,302.32

EXPENDITURES

Distributions to Members:		
Benefit Payments	45,590,933.78	
Lump Sum DROP Distributions	730,506.62	
Lump Sum PROP Distributions	3,439,890.58	
Retiree Death Benefits	70,000.00	
Refunds of Member Contributions	996,170.22	
 Total Distributions		 50,827,501.20
Expenses:		
Investment related ¹	1,756,472.26	
Administrative	1,396,735.61	
 Total Expenses		 3,153,207.87
 Change in Net Assets for the Year		 42,253,074.28
 Net Assets Beginning of the Year		 689,767,838.26
 Net Assets End of the Year ²		 732,020,912.54

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

²Net Assets may be limited for actuarial consideration.

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 12/31/2015	1761
b. Terminations	
i. Vested (partial or full) with deferred benefits	5
ii. Non-vested or full lump sum distribution received	17
c. Deaths	2
d. Disabled	0
e. Retired	41
f. DROP	15
g. Continuing participants	1681
h. New entrants	156
i. Total active life participants in valuation	1837

2. Non-Active lives (including beneficiaries receiving benefits)

	<u>Service Retirees, DROP Participants</u>	<u>Receiving Death Benefits</u>	<u>Receiving Disability Benefits</u>	<u>Receiving QDRO Benefits</u>	<u>Vested Deferred</u>	<u>Total</u>
a. Number prior valuation	711	49	3	38	41	842
b. In	57	4	0	0	7	68
c. Out	11	0	1	1	12	25
d. Number current valuation	757	53	2	37	36	885

STATISTICAL DATA

	<u>12/31/2014</u>	<u>12/31/2015</u>	<u>12/31/2016</u>
Actives	1,777	1,761	1,837
Average Current Age	40.0	40.1	39.8
Average Age at Employment	28.3	29.0	29.0
Average Past Service	11.7	11.1	10.8
Average Annual Salary	\$84,896	\$86,232	\$86,424

AGE AND SERVICE DISTRIBUTION

PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	36	7	4	0	0	0	0	0	0	0	0	47
25 - 29	52	30	20	13	21	11	0	0	0	0	0	147
30 - 34	39	22	29	30	44	153	25	0	0	0	0	342
35 - 39	13	9	11	14	14	119	123	35	1	0	0	339
40 - 44	13	8	7	7	12	62	101	168	20	0	0	398
45 - 49	2	1	4	1	4	35	67	126	108	14	0	362
50 - 54	0	0	0	0	0	17	24	44	50	22	0	157
55 - 59	0	0	0	0	0	8	4	11	7	4	2	36
60 - 64	1	0	0	0	0	3	0	1	2	2	0	9
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	156	77	75	65	95	408	344	385	188	42	2	1,837

AUSTIN POLICE RETIREMENT SYSTEM
SUMMARY OF BENEFIT PROVISIONS

<u>Creditable Service</u>	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.
<u>Earnings</u>	Base pay, plus longevity pay.
<u>Average Final Compensation</u>	Average Earnings for the highest 36 months over the last 120 months of service.
<u>Member Contributions</u>	13.0% of Earnings.
<u>City Contributions</u>	21.313%, effective October 1, 2015.
<u>Normal Retirement</u>	
Date	Earlier of age 62, age 55 and 20 years of Creditable Service, or 23 years of Creditable Service, regardless of age (excluding military service).
Benefit	3.20% of Average Final Compensation <u>times</u> Creditable Service.
Form of Benefit	Modified Cash Refund (options available).
<u>Vesting</u>	
Schedule	100% after 10 years of Creditable Service.
Benefit Amount	Member 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.
<u>Disability</u>	
Eligibility	Total and permanent as determined by the Board. Members must have 10 years of Creditable Service if the disability was non-service related.
Benefit	Accrued benefit at date of disability, but not less than 64% of Average Final Compensation for service related disablements.
Form of Benefit	Modified Cash Refund (options available).

Death Benefits

Before Retirement Eligibility

Twice the amount of the Member's accumulated contributions, subject to a minimum of \$10,000.

After Retirement Eligibility

Member's accrued benefit as of the date of death, payable based on optional annuity selected either by Member or beneficiary. Additionally, a lump sum death benefit is payable in the amount of \$10,000.

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.

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.

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, 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.

<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, excluding military service, as of April 1, 2015. Members with less than 23 years as of this date will not be eligible to participate in Retro DROP.

Participation Period

Upon election to retroactively enter DROP, the Retro DROP period will not exceed 36 months.

Rate of Return

5.0%, compounded annually.

Form of Distribution

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

AMORTIZATION SCHEDULE - EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Plan Year Ending	Differences Between Expected and Actual Experience	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2015	\$ (6,318,435)	10	\$ (631,843)	\$ (631,843)	\$ (631,843)	\$ (631,843)	\$ (631,844)	\$ (631,844)	\$ (631,844)	\$ (631,844)	\$ (631,844)	\$ -
2016	\$ 7,454,959	10	\$ 745,495	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496	\$ 745,496
Net Increase (Decrease) in Pension Expense			\$ 113,652	\$ 113,653	\$ 113,653	\$ 113,653	\$ 113,652	\$ 113,652	\$ 113,652	\$ 113,652	\$ 113,652	\$ 745,496