FIRE AND POLICE PENSION ASSOCIATION

COLORADO SPRINGS NEW HIRE PENSION PLAN-POLICE COMPONENT
ACTUARIAL VALUATION REPORT

FOR THE YEAR BEGINNING JANUARY 1, 2016

GRS

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To:	Board of Directors for the Fire and Police Pension Association
CC:	Administrative Heads and Finance Officers of the City of Colorado Springs
Date:	June 2016
Subject:	**Actuarial Valuation Results as of January 1, 2016**

This report contains the actuarial valuation results as of January 1, 2016 for the Colorado Springs New Hire Pension Plan – Police Component as determined by Gabriel, Roeder, Smith & Company (GRS), actuary for the Fire and Police Pension Association (FPPA). Questions about this report should be directed to FPPA, rather than to Gabriel, Roeder, Smith & Company.

Financing Objectives

This valuation was prepared to determine the annual required contribution (ARC) for fiscal year 2017. The ARC for FY2017 is $10,368,391 and is shown in Table 1, Item 9.

The calculated employer contribution consists of the sum of two pieces: the normal cost and the amortization of the unfunded actuarial accrued liability (UAAL). The calculated contribution is shown in Table 1, Item 9. The normal cost (shown in Table 1, Item 2) can be viewed as the regular, ongoing cost of the Plan.

The UAAL is the amount by which the actuarial value of assets falls short of, or exceeds, the actuarial accrued liability for this Plan. Under the current funding policy, the UAAL must be amortized under a level dollar method over a period of 22 years. The required payment to amortize the UAAL is shown in Table 1, Item 8.

The Annual Required Contribution may be considered as a minimum contribution rate that complies with state statute. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the Plan in excess of those presented in this report be considered.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section Table 13 of this report. Page 3 of this letter includes short term projections assuming alternate investment returns. With the exception of these short term funding projections, this report does not include an assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

Benefit Provisions

This actuarial valuation reflects the provisions that were applicable to the Colorado Springs New Hire Pension Plan – Police Component as of the valuation date. The details of the actuarial calculations, based on the current benefit provisions, are described in this report.

SRA Contributions

As of January 1, 2016, the combined member/employer contribution rate is over 16.00% and therefore we recommend the SRA contribution rate be set to 0.00% as of January 1, 2017.

Actuarial Assumptions and Methods

Since the prior valuation, new actuarial methods and assumptions have been selected by the Board of Directors of FPPA based upon the actuary's analysis and recommendations from the 2015 Experience Study.

The main actuarial factor changes effective January 1, 2016 were:

- Reduce the inflation assumption from 3.0% to 2.5%. It was determined that the current 3.0% assumption is higher than the long term historical average, the recent historical average, and most sources of future expectations. The decision to lower the assumption to 2.5% places the assumption closer to recent inflation levels and closer to the levels expected in the bond market.
- The real return on investments was increased to 5.0% for an overall nominal investment return of 7.50%. The productivity component of the salary increases was increased from 1.0% to 1.5%. The aggregate effect of these changes (inflation, real return, and the productivity component of the salary increase) on the actuarial results was minimal.
- Add an explicit charge for administrative expenses in the actuarial contribution calculation. Although the nominal investment return was not changed from 7.50%, adding an explicit administrative expense effectively reduces the return that must be earned by the plans in order to meet the actuarial assumption since the investment return is no longer net of administrative expenses. This does not alter the accrued liability, but it does increase the actuarially calculated contribution.
- Revise the base mortality tables and the explicit assumption for increasing longevity in the future to reflect current mortality studies. This had the effect of increasing longevity expectations, and in turn, increasing expected costs and liabilities.

- Increase the expected incidence of Total Disability for members of FPPA's defined benefit plans. Disability incidence is an important assumption for FPPA plans because a disability occurrence shifts all liability from the Defined Benefit System plans (Statewide Defined Benefit Plan, Statewide Hybrid – DB Component Plan, Colorado Springs New Hire Plan) to the Statewide Death & Disability Plan. Increasing the expected incidence of Total Disability creates a large increase in projected benefits from the Statewide Death & Disability Plan and reduces projected benefits from the Defined Benefit System retirement plans.

The actuarial assumptions implemented in January 1, 2016 are more reflective of future expectations as the Plan proceeds forward. As always, the assumptions will be reviewed against actual experience each year and gains or losses recognized in accordance with Governmental Accounting Standards Board standards and our actuarial methods and policies.

For a complete list of assumption changes as well as the detailed rationale for the changes, please see the experience study report dated June 1, 2015.

The assumptions and methods are detailed in Table 13 of our Report. The Board of Directors has sole authority to determine the actuarial assumptions used for the Plan. The assumptions that are based upon the actuary's recommendations are internally consistent and are reasonably based on the actual past experience of the Plan.

Because the plan is closed to new members, the amortization period was closed at 30 years effective January 1, 2008.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution and funding periods. The actuarial calculations are intended to provide information for rational decision making.

Assets

Table 4 shows the market value of assets for this department and Table 5 shows the development of the actuarial value. The actuarial value of assets is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual earnings and expected earnings each year, and recognizes the cumulative excess return (or shortfall) over at a minimum rate of 20% per year. This smoothed average approach is intended to ensure the smoothed value of assets will converge towards the market value in a reasonable amount of time.

Member Data

Member data as of January 1, 2016 was supplied by FPPA, as supplied by the department throughout the normal course of business. GRS reviewed the data and tested it for reasonableness and consistency. The member count is shown in Table 3.

Experience

The plan experienced an increase in the calculated contribution between the 2015 actuarial valuation and this valuation. This increase was primarily due to the change in assumptions, compounded with a than expected asset return.

Deferred Losses and Projected Actuarial Results

To allow the City to anticipate future contribution requirements for the Fund, we have projected the actuarial status of the Fund as of January 1, 2016. The table below provides the ARC for Fiscal Years 2016 - 2020 based on the January 1, 2016 actuarial valuation.

	Annual Required Contribution (ARC)		
Fiscal Year (FY)	Assuming 3.5% return in FY	Assuming 7.5% return in FY	Assuming 11.5% return in FY
2017	$10,368,391	$10,368,391	$10,368,391
2018	10,564,248	10,350,110	10,101,483
2019	11,122,593	10,451,754	9,694,111
2020	11,948,778	10,549,758	8,972,009
2021	13,031,661	10,603,270	7,837,666

The projected liabilities are calculated by rolling forward the liabilities as of January 1, 2016, taking into account interest and benefit payments for the year, including mortality incidence and anticipated cost of living increases. The 7.5% scenario above coincides with the actuarial investment return assumption of 7.5%. The 3.5% and 11.5% scenarios were selected because there is statistically a high probability of the return for a two year period being inside the expected return +/- 4%.

The scenarios above are for illustration purposes only and are in no way to be used as expected investment performance. There are no other deviations from the expected taken into consideration besides the asset performance. Careful consideration of this projected contribution should be taken into account before any benefit enhancement is adopted.

Trends

Effective for the January 1, 2016 valuation, the FPPA Board adopted a new assumption set based on recommendations from the 2015 experience study. These new assumptions increased the Annual Required Contribution. As of January 1, 2016, there remains $6.8 million of deferred asset loss that is expected to continue to put upward pressure on required contributions to the plan. However, it is anticipated that the dollar normal cost will continue to decrease over time, somewhat offsetting the pressure from deferred asset losses.

Tables

This report includes the following sections:

- The executive summary includes a condensed summary of the demographic, financial, and actuarial data.
- Table 1 provides the details of the development of the required contribution.
- Table 2 shows the sources of change in the calculated contribution since the prior valuation.
- Table 3 shows historical actuarial and demographic data for the department.
- Tables 4, 5, and 6 show the development of the financial information.
- Table 7 provides historical funding information.
- Table 8 provides the solvency test.
- Table 9 shows historical cash flow information.
- Tables 10, 11, and 12 show demographic data for the department.
- Table 13 shows the actuarial assumptions and methods used to calculate the liabilities.
- Table 14 is a summary of the benefit provisions for the department.
- Table 15 provides definitions of several terms used throughout the report.
- Table 16 provides a 5 year deterministic projection

GASB Accounting

The Governmental Accounting Standards Board (GASB) Statement No. 67, Financial Reporting for Pension Plans (Issued 6/2012), has replaced the requirements under GASB Statement No. 25, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans (Issued 11/1994), effective for financial statements for fiscal years beginning after June 15, 2013. GASB Statement No. 68, Accounting and Financial Reporting for Pensions (Issued 6/2012), has replaced GASB Statement No. 27, Accounting for Pensions by State and

Local Governmental Employers (Issued 11/1994), effective for fiscal years beginning after June 15, 2014. Plan reporting information for GASB Statement No. 67 can be found in the FPPA Comprehensive Annual Financial Report at FPPA's website - FPPAco.org. Colorado Springs receives a separate accounting report in order to meet their financial reporting requirements under GASB 68.

Certification

We certify that the information included herein and contained in the 2016 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Colorado Springs New Hire Police Pension Fund as of January 1, 2016.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the results presented comply with the requirements of the State of Colorado statutes and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

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

Respectfully submitted,
Gabriel Roeder Smith & Company

Joe Newton

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Item	January 1, 2016	January 1, 2015
Membership		
• Number of:		
- Active members	350	384
- Terminated vested members	14	13
- Inactive members	7	5
- Members in DROP	37	36
- Retired members	207	183
- Beneficiaries	6	6
- Total	621	627
• Annualized payroll supplied by FPPA	$ 27,575,061	$ 29,432,993
• Annualized monthly benefits paid	$ 10,653,386	$ 9,419,013
Assets		
• Market value	$ 264,726,596	$ 260,252,124
• Actuarial value	$ 271,515,321	$ 253,937,185
• Return on market value	1.6 %	6.7 %
• Return on actuarial value	6.8 %	8.4 %
• Contribution	$ 10,409,669	$ 10,559,461
• Ratio of actuarial value to market value	102.6 %	97.6 %
Actuarial Information		
• Actuarial accrued liability	$ 319,975,168	$ 297,810,707
• Unfunded actuarial accrued liability/(surplus)	$ 48,459,847	$ 43,873,522
• Amortization period (years)	22	23
• Funded ratio	84.9 %	85.3 %
Annual Required Contribution (ARC)		
• For year ending December 31,	2017	2016
• Estimated contribution amount	$ 10,368,391	$ 9,645,675

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Development of Annual Required Contribution

	January 1, 2016	After Assumption Changes January 1, 2015	Prior to Assumption Change January 1, 2015
1. Valuation payroll	$ 27,575,061	$ 29,432,993	$ 29,432,993
2. Normal cost	$ 5,463,111	$ 5,998,838	$ 5,767,089
3. Administrative Expenses*	$ 412,381	$ 408,342	$ N/A
4. Actuarial accrued liability for active members			
a. Present value of future benefits for active members	$ 197,111,685	$ 205,626,597	$ 201,394,393
b. Less: present value of future normal costs	(38,977,296)	(43,997,419)	(43,004,069)
c. Actuarial accrued liability (a. + b.)	$ 158,134,389	$ 161,629,178	$ 158,390,324
5. Total actuarial accrued liability for:			
a. Retirees and beneficiaries	$ 125,327,230	$ 109,567,078	$ 105,733,685
b. Terminated vested members	2,453,006	2,719,578	2,668,813
c. Inactive members	843,327	518,089	518,089
d. Members in DROP	33,217,216	31,316,259	30,499,796
e. Active members (3c.)	158,134,389	161,629,178	158,390,324
f. Total	$ 319,975,168	$ 305,750,182	$ 297,810,707
6. Actuarial value of assets	$ 271,515,321	$ 253,937,185	$ 253,937,185
7. Unfunded actuarial accrued liability (UAAL)/(surplus) (5f. - 6.)	$ 48,459,847	$ 51,812,997	$ 43,873,522
8. Funded ratio	84.86 %	83.05 %	85.27 %
9. Required payment to amortize the UAAL/(surplus) over 22 years from January 1, 2016	$ 4,492,898	$ 4,681,156	$ 3,878,586
10. Total calculated annual contribution for Fiscal Year:	2017	2016	2016
Annual Required Contribution (2. + 3. + 9.)	$ 10,368,391	$ 11,088,336	$ 9,645,675
11. Total present value of benefits (5f. - 4b.)	$ 358,952,464	$ 349,747,601	$ 340,814,776

* As of January 1, 2016, this is a method change to explicitly include administrative expenses in the calculated annual contribution.

Actuarial Gain/(Loss) on UAAL

1.	a) Unfunded actuarial accrued liability (UAAL)	$	43,873,522
	b) UAAL after the assumption change		51,812,997
2.	Total normal cost for FY2015		6,291,613
3.	Non Service Contributions during FY2015		(10,203,704)
4.	a) Interest on Item 1 for one year		3,885,975
	b) Interest on Item 2 and Item 3 for one-half year *		(146,703)
5.	Change in UAAL due to:		
	a. Benefit Improvements		0
	b. Assumption Changes (already included in 1b.)		7,939,475
6.	Expected UAAL as of this valuation (1b.+2.+3.+4.)		51,640,178
7.	Actual UAAL at end of period		48,459,847
8.	Actuarial gain/(loss) for the period (7. – 6.)		3,180,330
	SOURCE OF GAINS/(LOSSES)		
9.	Asset gain/(loss) (See Table 6)	$	(1,697,181)
10.	Salary/rank liability gain/(loss) for the period		1,607,569
11.	Net liability gain/(loss) for the period (8. - 9. - 10.) #		3,269,942

Change in Calculated Contribution

1.	Calculated contribution in 2015 valuation		$	9,645,675
2.	Benefit changes	0		
3.	Assumption/method changes	1,261,348		
4.	Change in Normal Cost^	(303,978)		
5.	Investment experience	168,818		
6.	Salary/rank experience	(159,904)		
7.	Other liability experience #	(243,568)		
8.	Total change	722,716		
9.	Calculated contribution in 2016 valuation		$	10,368,391

**Assume Normal Cost and contributions occurred in the mid-year.*

^ The normal cost is a measure of the rate at which active member benefits are accruing and directly relates to the active member payroll. The reduction in normal cost is due to the reduction in active member payroll through terminations.

 # Includes gains from salary increases less than expected and more retiree deaths than expected.

Actuarial Experience

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
1. Number of members										
a. Active	350	384	409	426	443	470	501	525	562	631
b. Retired	207	183	167	151	138	124	110	90	73	61
c. DROP	37	36	30	38	45	41	34	40	40	31
d. Beneficiaries	6	6	5	6	5	1	1	0	0	0
e. Terminated vested	14	13	17	16	14	18	18	16	20	21
f. Inactive	7	5	7	6	5	11	10	NA	NA	NA
g. Total	621	627	635	643	650	665	674	671	695	744
2. Covered payroll	$ 27,575,061	$ 29,432,993	$ 30,441,800	$ 30,420,085	$ 31,381,480	$ 33,357,427	$ 35,550,304	$ 36,735,114	$ 39,048,754	$ 40,438,034
3. Average compensation	$ 78,786	$ 76,648	$ 74,430	$ 71,409	$ 70,839	$ 70,973	$ 70,959	$ 69,972	$ 69,482	$ 64,086
4. Valuation results										
a. Normal cost	$ 5,463,111	$ 5,767,089	$ 5,959,768	$ 5,976,371	$ 6,319,141	$ 6,218,536	$ 6,661,663	$ 6,892,733	$ 7,337,461	$ 6,810,814
b. Accrued liability	319,975,168	297,810,707	281,166,840	258,960,907	246,518,300	226,088,133	213,764,095	198,695,916	188,263,199	161,530,980
c. Actuarial value of assets	271,515,321	253,937,185	233,009,247	212,428,394	197,710,046	187,249,190	170,960,335	156,099,012	178,548,095	159,508,243
d. Unfunded liability	48,459,847	43,873,522	48,157,593	46,532,513	48,808,254	38,838,943	42,803,760	42,596,904	9,715,104	2,022,737
e. Remaining amortization	22	23	24	25	26	27	28	29	30	30
f. Funded ratio	84.9%	85.3%	82.9%	82.0%	80.2%	82.8%	80.0%	78.6%	94.8%	98.7%
5. Annual required contribution										
Estimated dollar contribution	$ 10,368,391	$ 9,645,675	$ 10,203,704	$ 9,986,634	$ 10,605,836	$ 9,619,134	$ 10,256,567	$ 10,663,733	$ 8,142,483	$ 6,794,010

Item 5 above is the calculated contribution as it is described throughout the report: normal cost plus the amortization of the UAAL under the policy as described in the current statutes.

There is a one-year lag. As an example, the contribution shown in valuation year 2015 is payable in fiscal year 2016.

Reconciliation of Net Plan Assets

	Year Ending December 31, 2015	Year Ending December 31, 2014
1. Market value of assets at beginning of year	$ 260,252,124	$ 242,667,157
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 2,493,427	$ 2,830,620
ii. Employer contributions	7,916,242	7,728,841
iii. State contributions	0	0
iv. Transfer to FPPA Statewide DB Plan	0	0
v. Total	$ 10,409,669	$ 10,559,461
b. Net investment income		
i. Interest	$ 652,173	$ 559,345
ii. Dividends	2,254,897	2,522,210
iii. Net change in accrued income	56,141	(43,734)
iv. Unrealized gain/(loss)	(6,620,655)	3,933,356
v. Realized gain/(loss)	8,293,008	9,497,424
vi. Defined contribution earnings (net)	(35,377)	(64,964)
vii. Investment expense	(2,065,894)	(1,739,339)
viii Direct allocated plan expense/(income)	(14,619)	(9,711)
ix. Allocated fees and expenses	(397,762)	(398,631)
x. Other Income	2,130,847	2,030,444
c. Total revenue	$ 14,662,428	$ 26,845,861
3. Expenditures for the year		
a. Benefit payments	$ (10,088,222)	$ (8,817,186)
b. Refunds	(99,734)	(443,708)
c. Plan directed expenses	0	0
d. Total expenditures	(10,187,956)	(9,260,894)
4. Increase in net assets (2c. + 3d.)	$ 4,474,472	$ 17,584,967
5. Market value of assets at end of year (1. + 4.)	$ 264,726,596	$ 260,252,124

Development of Actuarial Value of Assets

1.	Actuarial value of assets at beginning of year	$ 253,937,185
2.	Net new investments	
	a. Contributions	10,409,669
	b. Benefits paid	(10,088,222)
	c. Refunds	(99,734)
	e. Subtotal	221,713
3.	Assumed investment return rate for fiscal year	7.5%
4.	Assumed investment return for fiscal year	$ 19,053,604
5.	Expected Actuarial Value at end of year	$ 273,212,502
6.	Market value of assets at end of year	$ 264,726,596
7.	Excess return (6-5)	$ (8,485,906)
8.	Development of amounts to be recognized as of December 31, 2015:	

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remaining	Recognized for this valuation	Remaining after this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2011	$ 0	$ 0	$ 0	1	$ 0	$ 0
2012	0	0	0	2	0	0
2013	6,314,939	(6,314,939)	0	3	0	0
2014	0	0	0	4	0	0
2015	(14,800,845)	6,314,939	(8,485,906)	5	(1,697,181)	(6,788,725)
Total	$ (8,485,906)	$ 0	$ (8,485,906)		$ (1,697,181)	$ (6,788,725)

9.	Actuarial value of assets as of December 31, 2015 (Item 6 - Item 8)	$ 271,515,321
10.	Ratio of actuarial value to market value	102.6%

Amounts in column (1) for fiscal years ending 2011 through 2014 are from the prior valuation. The column (1) amount for fiscal year 2015 is developed using item 7 less the total of column (1) for fiscal years ending 2011 through 2014. To the extent possible, the 2015 excess or shortfall is used to reduce prior bases. In this case, the 2015 base shortfall completely eliminates any prior bases and the net 2015 shortfall is spread over five years. The first base was established in fiscal year 2013, and prior bases for fiscal years 2011 and 2012 were not established. The fiscal year 2014 base is $0 because the entire base was used to offset the 2013 loss in a prior valuation.

Gain/(Loss) on Assets

		Year Ending		
		December 31, 2015		December 31, 2014
1. Actuarial assets as of January 1	$	253,937,185	$	233,009,247
2. Total contributions since prior valuation	$	10,409,669	$	10,559,461
3. Benefits and refunds since prior valuation	$	(10,187,956)	$	(9,260,894)
4. Assumed net investment income at 7.5%				
a. Beginning assets	$	19,045,289	$	17,475,694
b. Contributions		390,363		395,980
c. Benefits and refunds paid		(382,048)		(347,283)
d. Total	$	19,053,604	$	17,524,391
5. Expected actuarial assets (1. + 2. + 3. + 4.)	$	273,212,502	$	251,832,205
6. Actual actuarial assets as of December 31	$	271,515,321	$	253,937,185
7. Net asset gain/(loss) since prior valuation (6. - 5.)	$	(1,697,181)	$	2,104,980
		Loss		Gain

Statement of Funding Progress

Date	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 a % of payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January 1, 1998	$ 63,082,332	$ 45,567,059	$ (17,515,273)	138.4 %	20,386,441	(85.9) %
January 1, 2000	86,139,093	72,268,663	(13,870,430)	119.2	22,905,603	(60.6)
January 1, 2002	97,169,645	91,016,905	(6,152,740)	106.8	29,154,383	(21.1)
January 1, 2004	105,649,541	117,092,862	11,443,321	90.2	33,432,961	34.2
January 1, 2005	117,965,939	122,896,108	4,930,169	96.0	34,437,864	14.3
January 1, 2006	137,688,853	139,568,165	1,879,312	98.7	39,294,072	4.8
January 1, 2007	159,508,243	161,530,980	2,022,737	98.7	40,438,034	5.0
January 1, 2008	178,548,095	188,263,199	9,715,104	94.8	39,048,754	24.9
January 1, 2009	156,099,012	198,695,916	42,596,904	78.6	36,735,114	116.0
January 1, 2010	170,960,335	213,764,095	42,803,760	80.0	35,550,304	120.4
January 1, 2011	187,249,190	226,088,133	38,838,943	82.8	33,357,427	116.4
January 1, 2012	197,710,046	246,518,300	48,808,254	80.2	31,381,480	155.5
January 1, 2013	212,428,394	258,960,907	46,532,513	82.0	30,420,085	153.0
January 1, 2014	233,009,247	281,166,840	48,157,593	82.9	30,441,800	158.2
January 1, 2015	253,937,185	297,810,707	43,873,522	85.3	29,432,993	149.1
January 1, 2016	271,515,321	319,975,168	48,459,847	84.9	27,575,061	175.7

Limitations of Funded Status Measurements

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

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

Solvency Test

Valuation Date	Aggregated Accrued Liabilities for: Active Members Contributions	Retirees Beneficiaries and Vested Terminations	Members (Employer Financed Portion)	Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Reported Assets: (5)/(2)	[(5)-(2)]/(3)	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
January 1, 2007	$ 25,345	$ 45,637	$ 90,549	$ 159,508	100.0%	100.0%	97.8%
January 1, 2008	26,162	57,986	104,116	178,548	100.0%	100.0%	90.7%
January 1, 2009	26,693	70,017	101,986	156,099	100.0%	100.0%	58.2%
January 1, 2010	28,025	82,218	103,521	170,963	100.0%	100.0%	58.7%
January 1, 2011	28,721	96,564	100,804	187,249	100.0%	100.0%	61.5%
January 1, 2012	29,048	112,336	105,134	197,710	100.0%	100.0%	53.6%
January 1, 2013	30,326	118,304	110,331	212,428	100.0%	100.0%	57.8%
January 1, 2014	31,545	124,081	125,541	233,009	100.0%	100.0%	61.6%
January 1, 2015	31,514	139,420	126,876	253,937	100.0%	100.0%	65.4%
January 1, 2016	30,658	161,841	127,476	271,515	100.0%	100.0%	62.0%

$ amount in 000s

Cash Flow Analysis

		Expenditures During the Year						
Year Ending December 31,	Contributions for the Year	Benefit Payments **	Expenses***	Total	Transfer to FPPA Statewide DB Plan	External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2004	$ 6,156,684	$ (2,820,944)	$ (442,282)	$ (3,263,226)	0	$ 2,893,458	$ 124,349,090	2.3 %
2005	6,841,155	(2,572,567)	(937,491)	(3,510,058)	0	3,331,097	140,611,634	2.4
2006	7,496,218	(2,952,333)	(1,056,148)	(4,008,481)	0	3,487,737	166,078,983	2.1
2007	8,173,010	(3,878,151)	(1,264,090)	(5,142,241)	(2,824,545)	206,224	182,745,963	0.1
2008	6,425,431	(4,757,098)	(1,322,660)	(6,079,758)	0	345,672	130,082,510	0.3
2009	8,216,628	(5,901,639)	(1,106,039)	(7,007,678)	0	1,208,950	158,403,521	0.8
2010	10,233,797	(6,219,750)	(1,272,055)	(7,491,805)	0	2,741,992	184,076,676	1.5
2011	9,666,399	(7,351,231)	(1,471,682)	(8,822,913)	(1,127,899)	(284,412)	186,028,008	(0.2)
2012	8,974,225	(7,901,852)	(1,799,573)	(9,701,425)	0	(727,200)	208,760,917	(0.3)
2013	10,647,439	(8,493,950)	(2,024,231)	(10,518,181)	0	129,258	242,667,157	0.1
2014	10,559,461	(9,260,894)	(2,147,681)	(11,408,575)	0	(849,114)	260,252,124	(0.3)
2015	10,409,669	(10,187,956)	(412,381)	(10,600,337)	0	(190,668)	264,726,596	(0.1)
2016*	9,645,675	(11,613,590)	(424,753)	(12,038,343)	0	(2,392,668)	282,098,698	(0.8)
2017*	10,368,391	(13,299,970)	(437,495)	(13,737,465)	0	(3,369,074)	299,760,686	(1.1)

* Cash flow estimated based on expected contributions and expected benefit payments. Assets are assumed to increase at the annual return of 7.5% with all cash flow occurring in the middle of the year.
** Expected Benefit Payments for 2016 and beyond include expected retirements, expected mortality and if applicable, future cost of living increases.
*** Beginning in fiscal year ending December 31, 2015, expenses reflect administrative expense only. Prior years include investment expenses.

Membership Data

		January 1, 2016	January 1, 2015	January 1, 2014
1.	Active members			
a.	Number	350	384	409
b.	Total payroll	$ 27,575,061	$ 29,432,993	$ 30,441,800
c.	Average annual salary	$ 78,786	$ 76,648	$ 74,430
d.	Average age	45.8	45.2	44.6
e.	Average service	17.4	16.7	16.1
2.	Terminated vested members			
a.	Number	14	13	17
b.	Total annual benefits	$ 238,236	$ 224,836	$ 307,512
c.	Average annual benefit	$ 17,017	$ 17,295	$ 18,089
d.	Average age	44	47	46
3.	Members In DROP			
a.	Number	37	36	30
b.	Total annual benefits	$ 2,168,731	$ 2,038,092	$ 1,685,045
c.	Average annual benefit	$ 58,614	$ 56,614	$ 56,168
d.	Average age	55	55	56
4.	Service retirees			
a.	Number	207	183	167
b.	Total annual benefits	$ 8,358,370	$ 7,256,058	$ 6,417,831
c.	Average annual benefit	$ 40,379	$ 39,651	$ 38,430
d.	Average age	60	61	60
5.	Beneficiaries			
a.	Number	6	6	5
b.	Total annual benefits	$ 126,285	$ 124,863	$ 107,793
c.	Average annual benefit	$ 21,048	$ 20,810	$ 21,559
d.	Average age	63	63	61
6.	Inactive members			
a.	Number	7	5	7

Summary of Retirees by Age and Type

	Retirees		Disabled Members		Beneficiaries		Members in DROP		All	
Age	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Less than 50	0	$ 0	0	$ 0	0	$ 0	0	$ 0	0	$ 0
50-54	28	2,673	0	0	1	2,503	17	4,698	46	3,418
55-59	54	3,475	0	0	0	0	16	5,112	70	3,849
60-64	77	3,627	0	0	0	0	4	4,768	81	3,683
65-69	44	3,285	0	0	2	1,409	0	0	46	3,203
70-74	4	2,555	0	0	3	1,734	0	0	7	0
75-79	0	0	0	0	0	0	0	0	0	0
Greater than 80	0	0	0	0	0	0	0	0	0	0
All	207	3,365	0	0	6	1,754	37	4,885	250	3,551

Schedule of Retirants & Annuitants Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls-End of Year				
Valuation Year	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits	% Increase in Annual Benefits	Average Annual Benefits	Average Age
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2006	12	$ 443,028	0	$ 0	78	$ 2,376,300	22.9 %	$ 30,465	55.0
2007	14	619,230	0	0	92	2,995,530	26.1	32,560	55.4
2008	21	897,046	0	0	113	3,892,576	29.9	34,448	54.5
2009	17	847,350	0	0	130	4,739,926	21.8	36,461	55.5
2010	16	791,367	1	14,525	145	5,516,768	16.4	38,047	56.0
2011	21	1,007,007	0	0	166	6,523,775	18.3	39,300	57.8
2012	25	1,044,739	3	97,040	188	7,471,474	14.5	39,742	58.2
2013	9	428,295	2	73,884	195	7,825,885	4.7	40,133	59.1
2014	9	460,165	2	75,382	202	8,210,668	4.9	40,647	59.8
2015	24	1,230,728	1	22,383	225	9,419,013	14.7	41,862	59.8
2016	26	1,266,408	1	32,035	250	10,653,386	13.1	42,614	59.8

* Includes cost-of-living adjustments granted since the prior valuation.

Summary for Actuarial Assumptions, Methods, and Changes

The calculations set forth in this report are based on the following assumptions:

1. Investment Return Rate — 7.50% per annum (net of investment expenses), compounded annually

2. Rates of Decrement due to:

   a) Retirement — As eligible for retirement after age 50 with 25 years of service:

Ages 50:	60%
Ages 51-54:	50%
Ages 55+:	100%

   b) Disability — Graduated rates, sample rates shown below:

Age	Annual Rate Per 1,000 Occupational Disability	Total Disability Rate
25	0.29	0.02
30	1.35	0.17
35	1.82	0.34
40	2.67	0.52
45	3.29	0.72
50	4.89	0.94
55	6.88	1.17

   c) Pre-Retirement Mortality — RP-2014 Mortality Table for Blue Collar Employees, projected with Scale BB, 55% multiplier for off-duty mortality. Increased by 0.00020 for on-duty experience. These rates include margin for future mortality improvement.

Summary for Actuarial Assumptions, Methods, and Changes (Continued)

d) Withdrawal (any reason other than retirement, death, or disability)

Termination rates are based on service.
Rates at selected ages are shown:

Annual Rate per 1,000 Members

Service	Rates	Service (cont.)	Rates	Service (cont.)	Rates
0	108.4	8	28.1	16	10.3
1	93.1	9	23.4	17	10.0
2	79.5	10	19.7	18	9.7
3	67.5	11	16.8	19	9.4
4	57.1	12	14.6	20	8.9
5	48.0	13	12.9	21	8.3
6	40.2	14	11.8	22	7.2
7	33.6	15	10.9	23	5.7

3. Post-Retirement Mortality

Healthy Retirees, Beneficiaries

For ages less than 55, RP-2014 Mortality Tables for Blue Collar Employees. For ages 65 and older, RP-2014 Mortality Tables for Blue Collar Healthy Annuitants. For ages 55 through 64, a blend of the previous tables. All tables are projected with Scale BB.

Annual Rate per 1,000 Members

Attained Age in 2016 (1)	Males (2)	Females (3)
50	2.17	1.23
55	3.68	1.97
60	7.24	4.62
65	12.31	8.52
70	19.10	13.63
75	30.57	22.42
80	50.31	37.25
85	84.25	63.46

Summary for Actuarial Assumptions, Methods, and Changes (Continued)

4. Salary Increase Rate — A service-related component shown below, plus a 3.0% inflation component and 1.0% productivity component, as follows:

Years of Service	Service-Related Component	Total Annual Rate of Increase Including 2.5% Inflation and 1.5% Productivity Component
1	10.00%	14.00%
2	9.00%	12.50%
3	8.50%	12.00%
4	8.00%	11.50%
5	2.50%	6.50%
6	1.50%	5.50%
7	1.50%	5.50%
8	1.00%	5.00%
9	0.75%	4.75%
10	0.50%	4.50%
11	0.50%	4.50%
12	0.50%	4.50%
13	0.25%	4.25%
14	0.25%	4.25%
15	0.00%	4.00%

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

5. Marital Status
   a) Percent married — 85% male and female
   b) Age difference — Males are assumed to be two years older than females.
6. Benefit Escalation — 2.6%
7. Payroll Growth — 0.00% - The plan is closed to New Entrants. Therefore, no payroll growth was assumed in the amortization calculation.

Summary for Actuarial Assumptions, Methods, and Changes (Continued)

8. Third Week Pay Impact — To account for third week pay, an additional salary increase of 0.5% is included after 10 years of service and another 0.5% after 20 years of service. In addition, final average pay is increased by 2% at the time of retirement. This approximates 25% of actives beginning to cash out third week pay in their 11th year of service, 25% beginning to cash out third week pay in their 21st year of service, and 50% of actives not cashing out until their last 78 months of employment (and then cashing out twice during that time).

9. Administrative Expense — An explicit administrative expense equal to the prior year actual expenses.

10. Changes in Actuarial Assumptions

Since the prior valuation, the Board adopted new assumptions based on the 2015 Experience Study. The changes from the prior assumption set are summarized below:

Economic Assumptions

1) Reduce the inflation assumption from 3.00% to 2.50%.
2) Increase the real rate of return assumption from 4.50% to 5.00%, resulting in no overall change to the nominal return assumption of 7.50%.
3) Add an explicit assumption for administrative expenses in the contribution determination.
4) Increase the productivity component of the salary scale assumption from 1.00% to 1.50%. Combining with the inflation rate of 2.50% creates ultimate salary scale assumption of 4.00%, which is unchanged from the current assumption.
5) Slightly modify the service-based promotional/longevity component of the salary scale.

Mortality Assumptions

6) Update the post-retirement mortality tables for non-disabled retirees to a table based on the RP-2014 generational mortality tables with blue collar adjustment. In addition, update the projected rate of improvement in longevity from Scale AA to the more recently published Scale BB.
7) Update the occupationally disabled post-retirement mortality assumption to be the same table as used for the healthy annuitants, except with a three year set-forward.

Summary for Actuarial Assumptions, Methods, and Changes (Continued)

8) Update the pre-retirement non-duty mortality tables to 55% of the RP-2014 mortality tables for active employees. Make no adjustment to the current duty mortality rate of 0.00020.

Other Demographic Assumptions

9) Slightly increase the pattern of retirement.
10) Combine the termination assumption for police and fire.
11) Increase the rates of both occupational and total disability to reflect higher incidence of disability observed during the study period than expected.

Actuarial Methods and Policies

12) Recommend no change to the use of the 5-year smoothing technique to determine the actuarial value of assets, used for determining the annual employer contribution rates.
13) Recommend continued use of the Entry Age Actuarial Cost Method.

11. Actuarial Cost Method

Under the entry age actuarial cost method, the normal cost is computed as the level percent of pay, which, if paid from the earliest time each member would have been eligible to join the plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the plan. The normal cost for the plan is determined by summing the normal cost of all members.

The actuarial accrued liability under this method at any point in time is the theoretical amount of the fund that should have been accumulated had annual contributions been made in prior years equaling to the normal cost. The unfunded actuarial accrued liability/(surplus) is the excess of the actuarial accrued liability over the actuarial value of the plan assets as of the valuation date.

The contribution requirements determined by this valuation will not be effective until one year later, and the determination of the requirement reflects this deferral. It is assumed that there will be no change in the normal cost due to the deferral, and it is assumed that payments are made monthly throughout the year. The reflection of the one year lag and the timing of the contributions are changes from the methodology of prior valuations.

Under this method, experience gains and losses (i.e. decreases or increases in accrued liabilities), attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

Summary for Actuarial Assumptions, Methods, and Changes (Continued)

12. Asset Valuation Method

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

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

Summary of Benefit Provisions

Plan Description

Two plans from the City of Colorado Springs joined the Fire & Police Pension Association Defined Benefit System as of October 1, 2006. They are now one single-employer defined benefit pension plan, Colorado Springs New Hire Pension Plan ("Plan"), but with a fire component and a police component for fire and police employees hired by the City of Colorado Springs on or after April 8, 1978 but prior to October 1, 2006. The plans are closed to new members as of October 1, 2006.

Employers may not withdraw from the Fire & Police Pension Association Defined Benefit System once elected. The Plan members had opportunities to transfer to the Fire & Police Pension Association Defined Benefit System - Statewide Defined Benefit Plan in conjunction with the administrative change. The Plan assets are included in the Fire & Police Members' Benefit Investment Fund and the Fire & Police Members' Self-Directed Investment Fund (for Deferred Retirement Option Plan "DROP" assets and Separate Retirement Account assets from eligible retired members).

Plan Year

A twelve-month period ending December 31.

Members Included

Members included are active employees hired on or after April 8, 1978 but prior to October 1, 2006. As of October 1, 2006, administration of the plan has been transferred to the Fire & Police Pension Association and the plan has been closed. All members hired on or after October 1, 2006 will become members of the Fire & Police Pension Association Defined Benefit System - Statewide Defined Benefit Plan.

Compensation Considered

Basic salary, including longevity pay, sick pay taken in the normal course of employment, vacation leave pay taken in the normal course of employment, third-week pay and mandatory overtime that is part of the members annual fixed periodic compensation. Also, all salary amounts deferred for 457 or Section 125 "cafeteria plan" are included.

Contribution Rates

The Plan sets contribution rates at a level that enables all benefits to be fully funded at the retirement date of all members within each component as determined by the actuarial study. Effective January 1, 2015, the Police Component actuarially determined contribution was $10,203,704. Of this amount the members of the Plan contributed 8 percent of basic salary and the employer remitted the remainder. Effective January 1, 2016, the actuarially determined contribution is $9,645,675.

Final Average Salary

Final Average Salary is the average of monthly basic salary compensation awarded to the member during the eighteen months immediately preceding termination or retirement.

Normal Retirement Date

A member's Normal Retirement Date shall be the date on which the member has completed at least 25 full years of credited service and has attained age of 50.

Normal Retirement Benefit

Any member who elects to retire on or after his Normal Retirement Date shall be eligible for a monthly pension equal to 2 percent of Final Average Salary for each full year of service for the first 10 years, plus 2.75 percent of Final Average Salary for each full year of service in excess of 10 years. The maximum monthly pension is 75 percent of Final Average Salary. The maximum pension is earned upon completing 30 years of service.

Early Retirement Benefit

A member under the Police Component who has a minimum of 20 years of service is eligible to receive a reduced, early retirement pension benefit beginning at age 45. The early retirement pension benefit shall be equal to 2 percent of Final Average Salary for each full year of service for the first 10 years, plus 2.75 percent for each full year of service thereafter, not to exceed the maximum monthly pension benefit of 75 percent, reduced by 7.5 percent for each year and portion thereof that the benefit commences prior to age 50.

Any member hired prior to May 1, 2001, who has completed at least 20 years of service and who has attained the age of 45 years may elect to retire from active service but shall receive 50 percent of the member’s Final Average Salary, with that amount reduced by 0.5 percent for each month or portion thereof that such member lacks to attain the age of 50 years as of the date of retirement.

Any member hired after April 30, 2001, and before October 1, 2003, who has completed at least 20 years of service prior to attaining the age of 45 years may elect to retire from active service shall receive 50 percent of the member’s Final Average Salary, with that amount reduced by 0.5 percent for each month or portion thereof that such member lacks to attain the age of 50 years as of the date of retirement.

Deferred Retirement Benefit
Any member retiring and eligible for a Normal Retirement Benefit may elect to defer receipt of such pension until attaining the age of 65 years. In the case of such an election, the annual deferred retirement pension shall be actuarially equivalent to the normal retirement pension.

Terminated Vested Benefit
A member who terminates with at least ten years of active service may leave the contributions in the Plan and when the member attains age 50 be eligible to receive a monthly vested benefit equal to 2 percent of Final Average Salary for each full year of credited service for the first 10 years, plus 2.75 percent of Final Average Salary for each full year of credited service in excess of 10 years. The maximum benefit is 75 percent of Final Average Salary.

Severance Benefit
In lieu of a future pension, a member may upon termination elect to have the accumulated member contributions refunded in a lump sum. Interest is credited at 5 percent per annum.

Death & Disability Benefit of Active Members
Disabled members and survivors (spouse or dependent children) of active members who die prior to retirement eligibility are covered by the benefits provided by the Fire & Police Pension Association Statewide Death & Disability Plan.

Post-Retirement Death Benefit
If a retired member dies, the “qualified surviving spouse” shall receive, until death, a monthly pension equal to 70 percent of the monthly benefit the member was receiving prior to death, including cost-of-living increases. If there is no “qualified surviving spouse” or if the qualified surviving spouse dies, each qualified surviving child should receive equal shares of the qualified surviving spouses benefit, as long as the child remains a “qualified child.” For purposes of this Plan, a spouse includes a partner in a civil union.

Cost-of-Living Adjustment (COLA)
Benefits are increased to reflect increases in the consumer price index but in no case may benefits be increased by more than 3 percent for any one year. Cost-of-living adjustments begin on October 1st immediately prior to the earlier of attainment of age 60 or ten years after benefit payments commenced.

Deferred Retirement Option Plan (DROP)
A member may elect to participate in the DROP after reaching eligibility for Normal Retirement. A member continues to work while participating in the DROP, but must terminate employment within 5 years of entry into the DROP. The member's percentage of retirement benefit is frozen at the time of entry into the DROP. The monthly payments that begin at entry into the DROP are accumulated until the member terminates service, at which time the DROP accumulated benefits can be paid as a lump sum, if desired. The member continues contributing the member contribution rate which is credited to the DROP. Effective March 1, 2003, the member shall self-direct the investments of their DROP funds.

Purchase of Service Credit
Active members of this Plan may purchase service credit for other employment completed within the United States not covered by this Plan. The cost of such service credit purchase shall be determined by the Fire & Police Pension Association Board of Directors and shall be on an actuarially equivalent basis. A member shall not be allowed to purchase service credit to the extent that the additional accrued benefits derived from the purchased service credit would result in the annual amount of the member's benefit exceeding the annual benefit limitation for defined benefit plans as determined under section 415 of the Internal Revenue Code (Ord. 02-114).

Stabilization Reserve Account (SRA)
Annually, at the discretion of the Fire & Police Pension Association Board of Directors, a contribution may be allocated to the SRA based on the actuarial study for the previous year. Amounts set aside in the SRA are allocated to individual accounts for each member. A member may receive the amount in this individual account upon election of normal, early vested, disability or deferred retirement, or in the event of the active member's death. If the cost of the defined benefit plan exceeds the combined member/employer contribution rate, funds from the SRA may be used to make up the shortfall. Effective January 1, 2008, the Separate Retirement Account contribution rate for members of the Police Component was set at 0 percent. The rate will remain at 0 percent for calendar years 2014 and 2015.

There were no changes to the benefit provisions since the prior valuation.

Definition of Terms

1. Actuarial Cost Method

   A method for determining the actuarial present value of future benefits and allocating such value to time periods in the form of a normal cost and an actuarial accrued liability.

2. Present Value of Future Benefits

   This is computed by projecting the total future benefit cash flow from the Plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.

3. Normal Cost

   Computed differently under different actuarial cost methods, the normal cost generally represents the value of the portion of the participant's anticipated retirement, termination, and/or death and disability benefits accrued during a year.

4. Actuarial Accrued Liability

   Computed differently under different actuarial cost methods. Generally actuarial accrued liability represents the value of the portion of the participant's anticipated retirement, termination, and/or death and disability benefits accrued as of the valuation date.

5. Entry Age Actuarial Cost Method

   A method under which a participant's actuarial present value of future benefits is allocated on a level basis over the earnings of the participant between his/her entry into the Plan and his/her assumed exit.

6. Unfunded Actuarial Accrued Liability

   The difference between total actuarial present value of future benefits over the sum of the tangible assets of the Plan and the actuarial present value of the members' future normal costs. The Plan is underfunded if the difference is positive and overfunded if the difference is negative.

7. Actuarial Value of Assets

   The value of cash, investments, and other property belonging to the Plan, as valued by the actuary for purposes of the actuarial valuation.

Definition of Terms
(Continued)

8. Actuarial Gain or Loss

From one valuation to the next, if the experience of the plan differs from that anticipated by the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust had a yield of 12% based on actuarial value, while the assumed yield on the actuarial value of assets was 7.5%.

Supplemental Studies

A. 5-year Deterministic Projection

Because the Plan is closed to new members, the amortization policy was changed to be level dollar effective January 1, 2008. As the payroll for the closed group diminishes, it is expected that the normal cost for the group will decrease over time. The amortization payment increases over the five-year projection period as the outstanding asset losses of $6.8 million are recognized.

The following exhibit provides an illustration of how the current valuation would expect the contribution amount to change over the next few valuations if all actuarial assumptions are met.

Year	Amortization Cost for UAAL	Normal Cost*	Total Contribution
2017	$ 4,492,899	$ 5,875,492	$ 10,368,391
2018	4,670,882	5,679,228	10,350,110
2019	4,862,478	5,589,276	10,451,754
2020	5,065,461	5,484,297	10,549,758
2021	5,277,824	5,325,446	10,603,270

*Includes an amount for administrative expenses.