

**FIRE AND POLICE PENSION ASSOCIATION**

COLORADO SPRINGS NEW HIRE PENSION PLAN-FIRE COMPONENT  
ACTUARIAL VALUATION REPORT  
FOR THE YEAR BEGINNING JANUARY 1, 2011



To: Board of Trustees for the Fire and Police Pension Association  
CC: Administrative Heads and Finance Officers of the City of Colorado Springs  
Date: May 2011  
Subject: **Actuarial Valuation Results as of January 1, 2011**

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This report contains the actuarial valuation results as of January 1, 2011 for the Colorado Springs New Hire Pension Plan – Fire 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 2012. The ARC for FY2012 is 25.542% and is shown in Table 1, Item 10.

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 statutes, the UAAL must be amortized under a level dollar method over a period of 27 years. The required payment to amortize the UAAL is shown in Table 1, Item 8.

### **Benefit Provisions**

This actuarial valuation reflects the provisions that were applicable to the Colorado Springs New Hire Pension Plan-Fire Component as of the valuation date. The details of the actuarial calculations, based on the current benefit provisions, are described in this report. If alternatives were requested, a summary of the alternative requested and the actuarial results based on those packages is shown in Table 17.

### **SRA Contributions**

As of January 1, 2011, 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, 2011.

### **Actuarial Assumptions and Methods**

Since the prior valuation, there was a change in the method used to determine the actuarial value of assets. This change continues to approximate a 3-year smoothing period and had no material impact on this valuation. The change was implemented because the new method is less volatile than the old method and will stay closer to the market value of assets over time. This was the only change to the actuarial methods and assumptions since the prior report. The methods and

assumptions have been selected by the Board of Directors of FPPA based upon the actuary's analysis and recommendations from the 2008 Experience Study. A summary of those assumptions and methods can be found in Table 14. Liabilities were determined under the entry age normal actuarial cost method.

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.

The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in GASB 25.

### **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 is an adjusted market value. The expected actuarial value is determined using the assumed 8.00% investment return rate and the cash flow of the plan. The difference between the expected actuarial value of assets and the actual market value is the excess return (or shortfall). The final actuarial value recognizes this excess return (or shortfall) at the rate of 33% per year. This smoothed average approach dampens the year-to-year fluctuations in the calculated contribution.

### **Member Data**

Member data as of January 1, 2011 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 its calculated contribution rate between the 2010 actuarial valuation and this valuation, but a decrease in the overall contribution dollar amounts. This decrease was primarily due to the significant salary gains. Table 2 shows the detailed calculations of the gains and losses since the prior valuation.

### **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, 2012. The table below provides the ARC for Fiscal Years 2012 - 2016 based on the January 1, 2011 actuarial valuation and an estimated ARC for Fiscal Years 2012, based on three different investment return scenarios.

Fiscal Year (FY)	ARC		
	Assuming 4% return in FY	Assuming 8% return in FY	Assuming 12% return in FY
2012	\$5,199,980	\$5,199,980	\$5,199,980
2013	\$5,409,201	\$5,270,327	\$5,133,496
2014	\$5,701,199	\$5,317,477	\$4,921,508
2015	\$6,033,975	\$5,315,159	\$4,551,922
2016	\$6,408,022	\$5,279,254	\$4,045,346

The projected liabilities are calculated by rolling forward the liabilities as of January 1, 2011, taking into account interest and benefit payments for the year, including mortality incidence and anticipated cost of living increases. The 8% scenario above coincides with the actuarial investment return assumption of 8.0%. The 4% and 12% 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.

### 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.
- Tables 7, 8, and 9 provide information that is required under the Governmental Accounting Standards Board Statement No. 25 (GASB 25) and No. 27 (GASB 27). Your auditor will need this information in preparing your financial statements.
- Table 10 shows historical cash flow information.
- Tables 11, 12, and 13 show demographic data for the department.
- Table 14 shows the actuarial assumptions and methods used to calculate the liabilities.
- Table 15 is a summary of the benefit provisions for the department.
- Table 16 provides definitions of several terms used throughout the report.
- Table 17 shows a description of and an analysis of any alternative studies requested by the

department.

### **Certification**

We certify that the information included herein and contained in the 2011 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Colorado Springs New Hire Pension Plan-Fire Component of January 1, 2011.

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. Ms. Ye and Mr. Newton are members of the Society of Actuaries and members of American Academy of Actuaries. Mr. Newton is also an Enrolled Actuary. Both are experienced in performing valuations for public retirement systems.

Respectfully submitted,  
Gabriel Roeder Smith & Company



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**Colorado Springs New Hire Pension Plan—Fire Component  
Actuarial Valuation as of January 1, 2011**

**Executive Summary**

Item	January 1, 2011 (1)	January 1, 2010 (2)
Membership		
• Number of:		
- Active members	264	288
- Terminated vested members	10	8
- Inactive members	3	1
- Members in DROP	36	28
- Disabled members	0	0
- Retired members	58	50
- Beneficiaries	1	1
- Total	372	376
• Annualized payroll supplied by FPPA	\$ 19,664,027	\$ 21,535,495
• Annualized monthly benefits paid	\$ 4,295,279	\$ 3,384,411
Assets		
• Market value	\$ 106,862,046	\$ 93,245,608
• Actuarial value	108,848,941	100,709,022
• Return on market value	13.5 %	19.8 %
• Return on actuarial value	7.0 %	8.0 %
• Contribution	\$ 5,123,834	\$ 4,025,461
• Ratio of actuarial value to market value	102 %	108 %
Actuarial Information		
• Actuarial accrued liability	\$ 127,909,057	\$ 121,361,624
• Unfunded actuarial accrued liability/(surplus)	19,060,116	20,652,602
• Amortization period (years)	27	28
• Calculated annual contribution as % of payroll	25.542 %	25.095 %
• GASB funded ratio	85.1 %	83.0 %
Annual Required Contribution (ARC)		
• For year ending December 31,	2012	2011
• Required Contribution Rate	25.542 %	25.095 %
• Estimated contribution amount	\$ 5,199,980	\$ 5,631,451

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Development of Annual Required Contribution

	January 1, 2011 (1)	January 1, 2010 (2)
1. Valuation payroll	\$ 19,664,027	\$ 21,535,495
2. Normal cost as a % of payroll	17.272 %	17.090 %
3. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$ 100,462,610	\$ 110,113,326
b. Less: present value of future normal costs	(32,062,194)	(35,190,662)
c. Actuarial accrued liability (a. + b.)	\$ 68,400,416	\$ 74,922,664
4. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 31,331,141	\$ 25,692,219
b. Terminated vested members	2,138,985	1,562,274
c. Inactive members	58,500	20,699
d. Members in DROP	25,980,015	19,163,778
e. Active members (3c.)	68,400,416	74,922,664
f. Total	\$ 127,909,057	\$ 121,361,634
5. Actuarial value of assets	\$ 108,848,941	\$ 100,709,022
6. Unfunded actuarial accrued liability (UAAL)/(surplus) (4e. - 5.)	\$ 19,060,116	\$ 20,652,612
7. Funded ratio	85.10 %	82.98 %
8. Required payment as a % of payroll to amortize the UAAL/(surplus) over 27 years from January 1, 2011	8.270 %	8.005 %
9. Total calculated annual contribution for Fiscal Year:	<u>2012</u>	<u>2011</u>
a. Total calculated contribution as a % of payroll (2. + 8.)	25.542 %	25.095 %
b. Estimated contribution	\$ 5,199,980	\$ 5,631,451
10. Annual required contribution under GASB #25 (9a., not less than 0)	25.542 %	25.095 %

**Actuarial Gain/(Loss) on UAAL**

1. Unfunded actuarial accrued liability (UAAL) as of January 1 of prior valuation year	\$ 20,652,602
2. Total normal cost for FY2010	4,012,693
3. Contributions during FY2010	(5,123,834)
4. Interest at 8.0%	<u>1,607,763</u>
5. Expected UAAL as of this valuation (1. + 2. + 3. + 4.)	\$ 21,149,224
6. Actual UAAL at end of period	\$ 19,060,116
7. Actuarial gain/(loss) for the period (5. – 6.)	\$ 2,089,108

SOURCE OF GAINS/(LOSSES)

8. Asset gain/(loss) (See Table 6)	\$ (978,620)
9. Benefit change gain/(loss)	\$ 0
10. Assumption change gain/(loss)	\$ 0
11. Salary/rank liability gain/(loss) for the period	\$ 3,313,612
12. Net liability gain/(loss) for the period (7. - 8. - 9. - 10. - 11.)	\$ (245,884)

**Change in Calculated Contribution**

1. Calculated contribution 2010		25.095 %
2. Benefit changes	0.000 %	
3. Assumption/method changes	0.000	
4. Change in Normal Cost	0.182	
5. Investment experience	0.420	
6. Salary/rank experience	(1.420)	
7. Effect of decreasing payroll	0.840	
8. Other liability experience	<u>0.425</u>	
9. Total change	0.447 %	
10. Calculated contribution 2011		25.542 %

**Colorado Springs New Hire Pension Plan—Fire Component  
Actuarial Valuation as of January 1, 2011**

**Table 3**

**Actuarial Experience**

	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>
1. Number of members							
a. Active	264	288	305	319	412	421	397
b. Retired	58	50	39	35	24	15	12
c. DROP	36	28	25	18	17	0	0
d. Beneficiaries	1	1	1	1	1	1	1
e. Terminated vested	10	8	6	5	5	4	5
f. Inactive	3	1	NA	NA	NA	NA	NA
g. Total	<u>372</u>	<u>376</u>	<u>376</u>	<u>378</u>	<u>459</u>	<u>441</u>	<u>415</u>
2. Covered payroll	19,664,027	\$ 21,535,495	\$ 22,483,956	\$ 23,827,770	\$ 26,867,827	\$ 26,640,305	\$ 23,344,108
3. Average compensation	74,485	\$ 74,776	\$ 73,718	\$ 74,695	\$ 65,213	\$ 63,279	\$ 58,801
4. Valuation results							
a. Normal cost	\$ 3,504,949	\$ 3,818,781	\$ 3,997,567	\$ 4,252,354	\$ 4,367,707	\$ 4,116,504	\$ 3,539,694
b. Accrued liability	127,909,057	121,361,624	113,068,434	107,389,381	99,137,903	86,903,116	81,608,422
c. Actuarial value of assets	108,848,941	100,709,022	92,515,096	104,946,386	98,290,761	84,519,478	71,474,295
d. Unfunded liability	19,060,116	20,652,602	20,553,338	2,442,995	847,142	2,383,638	10,134,127
e. Remaining amortization	27	28	29	30	30	30	30
f. Funded ratio	85.1 %	83.0 %	81.8 %	97.7 %	99.1 %	97.3 %	87.6 %
5. Annual required contribution							
a. Amount	25.5 %	25.1 %	25.1 %	18.1 %	16.4 %	16.1 %	17.0 %
6. Estimated contribution	\$ 5,199,980	\$ 5,631,451	\$ 5,952,279	\$ 4,542,279	\$ 4,297,335	\$ 4,743,476	\$ 4,093,551

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.

Reconciliation of Net Plan Assets

	Year Ending	
	12/31/2010 (1)	12/31/2009 (2)
1. Market value of assets at beginning of year (adjusted by SRA balance)	\$ 93,245,608	\$ 77,095,913
2. Revenue for the year		
a. Contributions		
i. Department contributions	\$ 5,123,834	\$ 4,025,461
ii. State contributions	0	0
iii. Affiliation contributions	0	(174,888)
iv. Total	\$ 5,123,834	\$ 3,850,573
b. Net investment income		
i. Interest	\$ 1,002,207	\$ 426,370
ii. Dividends	1,241,173	1,120,685
iii. Real estate	70	(15)
iv. Net change in accrued income	(81,499)	(87,562)
v. Unrealized gain/(loss)	8,124,980	14,288,684
vi. Realized gain/(loss)	2,942,486	1,181,836
vii. Deferred contribution earnings	(13,341)	(13,632)
viii. Fees and expenses	(742,245)	(643,244)
ix. Other Income	121,629	(898,020)
c. Total revenue	\$ 17,719,294	\$ 19,225,675
3. Expenditures for the year		
a. Benefit payments	\$ (3,936,676)	\$ (3,033,211)
b. Refunds	(166,180)	(31,686)
c. Administrative and miscellaneous expenses	0	(11,083)
d. Total expenditures	(4,102,856)	(3,075,980)
4. Increase in net assets (2c. + 3d.)	\$ 13,616,438	\$ 16,149,695
5. Market value of assets at end of year (1. + 4.)	\$ 106,862,046	\$ 93,245,608

Development of Actuarial Value of Assets

	Year Ending 12/31/2010 <u>(1)</u>
1. Actuarial value as of January 1	\$ 100,709,022
a. Contributions	\$ 5,123,834
b. Benefits paid	(3,936,676)
c. Refunds	<u>(166,180)</u>
d. Net cash flow	\$ 1,020,978
2. Expected actuarial value of assets as of December 31	\$ 109,827,561
3. Actual market value of assets as of December 31	\$ 106,862,046
4. Excess earnings/(shortfall)	\$ (2,965,515)
5. Excess earnings/(shortfall) recognized (33% x 4.)	\$ (978,620)
6. Actuarial value of assets as of December 31 (2. + 5.)	\$ 108,848,941

Calculation for 2010 not shown because of the change in method

**Gain/(Loss) on Assets**

	<u>12/31/2010</u>
1. Actuarial assets as of January 1	\$ 100,709,022
2. Total contributions since prior valuation	\$ 5,123,834
3. Benefits and refunds since prior valuation	\$ (4,102,856)
4. Assumed net investment income at 8.0%	
a. Beginning assets	\$ 8,056,722
b. Contributions	204,953
c. Benefits and refunds paid	<u>(164,114)</u>
d. Total	\$ 8,097,561
5. Expected actuarial assets (1. + 2. + 3. + 4.)	\$ 109,827,561
6. Actual actuarial assets as of December 31	\$ 108,848,941
7. Net asset gain/(loss) since prior valuation (6. - 5.)	\$ (978,620)

Loss

Statement of Funding Progress for GASB No. 25

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
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January 1, 1996	\$ 25,421,086	\$ 19,146,264	\$ (6,274,822)	132.8 %	\$ 9,522,776	(66) %
January 1, 1998	36,847,022	30,351,861	(6,495,161)	121.4	11,972,174	(54)
January 1, 2000	50,722,513	40,520,761	(10,201,752)	125.2	14,279,040	(71)
January 1, 2002	57,728,219	52,687,510	(5,040,709)	109.6	18,282,885	(28)
January 1, 2004	62,859,916	66,756,828	3,896,912	94.2	21,214,606	18
January 1, 2005	71,474,295	81,608,422	10,134,127	87.6	23,344,108	43
January 1, 2006	84,519,478	86,903,116	2,383,638	97.3	26,640,305	9
January 1, 2007	98,290,761	99,137,903	847,142	99.1	26,867,827	3
January 1, 2008	104,946,386	107,389,381	2,442,995	97.7	23,827,770	10
January 1, 2009	92,515,096	113,068,434	20,553,338	81.8	22,483,956	91
January 1, 2010	100,709,022	121,361,624	20,652,602	83.0	21,535,495	96
January 1, 2011	108,848,941	127,909,057	19,060,116	85.1	19,664,027	97

**GASB No. 25 and No. 27**

The "Annual Required Contribution" (ARC) is the sum of the normal cost and the amortization of the UAAL. The annual pension cost is the ARC plus interest on the "Net Pension Obligation" (NPO) as of the beginning of the year less an adjustment to the ARC for the amortization of the NPO. The amount shown below as the NPO is a disclosed measure of the difference between the cumulative annual pension costs and employer contributions made to the plan since transition to this reporting standard. Both standardized measures are calculated as of January 1, 2011, in accordance with Statements No. 25 and No. 27 of the Governmental Accounting Standards Board (GASB). There were no changes to the actuarial assumptions since the prior valuation. Additional information on the changes to the assumptions is found in Table 14.

The following exhibit shows a history of the ARC and the actual contributions made to the Plan.

Fiscal Year Ending	Annual Required Contribution	Actual Contribution	Percent
(1)	(2)	(3)	(4)
December 31, 2008	16.353%	16.353%	100 %
December 31, 2009	18.093%	18.093%	100 %
December 31, 2010	25.133%	25.133%	100 %
December 31, 2011	25.095%	N/A	
December 31, 2012	25.542%	N/A	

\* Revised after transition to FPPA and change of effective date for COLA to October 1<sup>st</sup>.

The following exhibit details the change in the NPO since the prior valuation and estimates the NPO as of the next valuation using the ARC as shown in this report and expected contributions.

	Year Ending		
	12/31/2010	12/31/2011**	12/31/2012**
	(1)	(2)	(3)
1. NPO beginning of year	\$ 0	\$ 0	\$ 0
2. Interest on NPO	0	0	0
3. Adjustment to ARC	0	0	0
4. ARC	5,123,834	5,092,428	5,199,980
5. Contribution	(5,123,834)	(5,092,428)	(5,199,980)
6. NPO end of year	\$ 0	\$ 0	\$ 0
7. Annual Pension Cost (2. + 3. + 4.)	\$ 5,123,834	5,092,428	5,199,980

\*\* This estimate is based on the expected contribution for FY2011 and the calculated contribution for FY2012. If the actual contributions were different, this exhibit would need to be adjusted.

**Notes for Financial Statements**

Valuation date	January 1, 2011
Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	27 years, beginning January 1, 2011
Asset valuation method	3-year smoothed fair market value
Actuarial assumptions:	
Investment rate of return *	8.00%
Projected salary increase *	4.75% - 16.75%
* Includes inflation at:	3.50%
Cost-of-living adjustment	3.00%

Solvency Test

Valuation Date	Aggregated Accrued Liabilities for			Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Reported Assets		
	Active Members Contributions	Retirees Beneficiaries and Vested Terminations	Members (Employer Financed Portion)		(5)/(2)	[(5)-(2)]/(3)	[(5)-(2)-(3)]/ (4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
January 1, 2007	17,106	21,479	60,554	98,291	100.0%	100.0%	98.6%
January 1, 2008	16,186	29,492	61,711	104,946	100.0%	100.0%	96.0%
January 1, 2009	17,117	36,551	59,400	92,515	100.0%	100.0%	65.4%
January 1, 2010	17,531	46,439	57,391	100,709	100.0%	100.0%	64.0%
January 1, 2011	17,297	59,509	51,103	108,849	100.0%	100.0%	62.7%

\$ amount in 000s

**Colorado Springs New Hire Pension Plan—Fire Component  
Actuarial Valuation as of January 1, 2011**

**Table 11**

**Cash Flow Analysis**

Year Ending December 31,	Contributions for the Year	Expenditures During the Year			External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
		Benefit Payments **	Expenses	Total			
(1)	(2)	(3)	(6)	(7)	(8)	(9)	(10)
2004	\$ 3,711,978	\$ (496,523)	\$ (304,804)	\$ (801,327)	\$ 2,910,651	\$ 75,137,690	3.9 %
2005	4,246,521	(433,572)	(609,593)	(1,043,165)	3,203,356	86,245,371	3.7
2006	4,635,325	(1,194,578)	(668,843)	(1,863,421)	2,771,904	102,563,833	2.7
2007	4,853,098	(9,031,570)	(776,908)	(9,808,479)	(4,955,381)	107,836,784	(4.6)
2008	3,823,945	(2,493,071)	(779,983)	(3,273,054)	550,891	77,095,913	0.7
2009	4,025,461	(3,250,868)	(654,327)	(3,905,195)	120,267	93,245,608	0.1
2010	5,123,834	(4,102,856)	(742,245)	(4,845,101)	278,733	106,862,046	0.3
2011*	5,092,428	(4,584,577)	(768,224)	(5,352,801)	(260,373)	115,140,221	(0.2)
2012*	5,199,980	(4,911,882)	(795,112)	(5,706,994)	(507,013)	123,824,145	(0.4)
		(5,255,499)					

\* Cash flow estimated based on expected contributions and expected benefit payments.

\*\* Expected Benefit Payments for 2011 and beyond include expected retirements, expected mortality and if applicable, future cost of living increases.

Membership Data

	<u>January 1, 2011</u>	<u>January 1, 2010</u>	<u>January 1, 2009</u>
	(1)	(2)	(3)
1. Active members			
a. Number	264	288	305
b. Total payroll	\$ 19,664,027	\$ 21,535,495	\$ 22,483,956
c. Average annual salary	74,485	74,776	73,718
d. Average age	43.1	42.7	42.3
e. Average service	14.0	13.7	13.3
2. Terminated vested members			
a. Number	10	8	6
b. Total annual benefits	\$ 246,832	\$ 177,316	\$ 135,098
c. Average annual benefit	24,683	22,165	22,516
d. Average age	48.4	47.9	47.0
3. Members In DROP			
a. Number	36	28	25
b. Total annual benefits	\$ 1,936,447	\$ 1,446,218	\$ 1,218,933
c. Average annual benefit	53,790	51,651	48,757
d. Average age	56.6	57.3	57.1
4. Service retirees			
a. Number	58	50	39
b. Total annual benefits	\$ 2,349,106	\$ 1,938,192	\$ 1,439,960
c. Average annual benefit	40,502	38,764	36,922
d. Average age	59.8	59.2	58.7
5. Beneficiaries			
a. Number	1	1	1
b. Total annual benefits	\$ 9,726	\$ 9,726	\$ 9,443
c. Average annual benefit	9,726	9,726	9,443
d. Average age	67.0	66.0	65.0
6. Inactive members			
a. Number	3	1	NA

Summary of Retirees by Age and Type

Age	Retirees		Disabled Members		Beneficiaries		Members in DROP		All	
	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
50-54	3	3,701	0	0	0	0	9	4,849	12	4,562
55-59	28	3,765	0	0	0	0	21	4,390	49	4,032
60-64	24	3,128	0	0	0	0	6	4,258	30	3,354
65-69	3	1,396	0	0	1	811	0	0	4	1,249
70-74	0	0	0	0	0	0	0	0	0	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	58	3,375	0	0	1	811	36	4,483	95	3,768

**Schedule of Retirants & Annuitants Added to and Removed from Rolls**

Valuation Year	Added to Rolls		Removed from Rolls		Rolls-End of Year		% Increase in Annual Benefits	Average Annual Benefits	Average Age
	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2005	N/A	N/A	N/A	N/A	13	\$ 272,928	N/A	\$ 20,994	N/A
2006	3	\$ 106,428	0	\$ 0	16	\$ 379,356	39.0 %	\$ 23,710	57.7
2007	26	\$ 1,160,157	0	\$ 0	42	\$ 1,539,513	305.8 %	\$ 36,655	57.6
2008	12	\$ 592,154	0	\$ 0	54	\$ 2,131,667	38.5 %	\$ 39,475	56.8
2009	11	\$ 536,669	0	\$ 0	65	\$ 2,668,336	25.2 %	\$ 41,051	57.2
2010	14	\$ 725,800	0	\$ 0	79	\$ 3,394,136	27.2 %	\$ 42,964	57.6
2011	16	\$ 901,143	0	\$ 0	95	\$ 4,295,279	26.5 %	\$ 45,213	58.7

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



**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:

Police – Annual Rate per 1,000 Members						Fire – Annual Rate per 1,000 Members					
Service			Service			Service			Service		
Service	Rates	(cont.)	Rates	(cont.)	Rates	Service	Rates	(cont.)	Rates	(cont.)	Rates
0	198.0	8	35.8	16	19.4	0	99.0	8	28.2	16	11.9
1	143.0	9	32.2	17	18.3	1	77.1	9	25.4	17	10.5
2	123.0	10	29.4	18	17.4	2	60.8	10	22.9	18	9.0
3	85.7	11	27.0	19	16.6	3	51.3	11	20.7	19	7.8
4	66.3	12	25.0	20	15.8	4	44.4	12	18.6	20	6.6
5	54.5	13	23.2	21	15.2	5	39.3	13	16.7	21	5.4
6	46.2	14	21.8	22	14.5	6	35.0	14	15.0	22	4.4
7	40.4	15	20.5	23	14.0	7	31.4	15	13.3	23	3.3

3. Post-Retirement Mortality

a) Healthy Retirees, Beneficiaries, and Disabled Retirees (retired after January 1, 1980)

1994 Group Annuity Mortality Table

Age	Annual Rate Per 1,000	
	Males	Females
50	2.579	1.428
55	4.425	2.294
60	7.976	4.439
65	14.535	8.636
70	23.730	13.730
75	37.211	22.686
80	62.027	39.396

b) Disabled Retirees (retired before January 1, 1980)

1983 Railroad Retirement Board Totally Disabled Annuitants Mortality Table

Age	Annual Rate Per 1,000 Disabled
20	10.60
30	10.60
40	13.50
50	31.64
60	42.46
70	67.47
80	107.68

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

4. Salary Increase Rate A service-related component shown below, plus a 3.50% inflation component and 1.25% productivity component, as follows:

<u>Years of Service</u>	<u>Service-Related Component</u>	<u>Total Annual Rate of Increase Including 3.50% Inflation and 1.25% Productivity Component</u>
1	12.00%	16.75%
2	10.00%	14.75%
3	8.00%	12.75%
4	7.00%	11.75%
5	2.50%	7.25%
6	2.00%	6.75%
7	1.50%	6.25%
8	1.25%	6.00%
9	1.00%	5.75%
10	0.75%	5.50%
11	0.75%	5.50%
12	0.50%	5.25%
13	0.50%	5.25%
14	0.25%	5.00%
15	0.00%	4.75%

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 80% male and female
  - b) Age difference Males are assumed to be three years older than females
6. Benefit Escalation 3.00%
7. Payroll Growth 0.00% - The plan is closed to New Entrants. Therefore, per GASB 27, no payroll growth can be assumed in the amortization calculation.
8. Third Week Pay Impact Assume 100% of the population will cash out each year during their career by adding a 2% increase in their salary scale at 10 years of service. We will then assume each member will cash out twice in their final averaging period, creating a spike of 0.50% at time of retirement.

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

9. Changes in Actuarial Assumptions

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

10. Changes in Actuarial Methods

There were no changes to the actuarial methods since the prior valuation.

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 in the middle of the year. The reflection of the one year lag is a change 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

There was a change in the method used in determining the actuarial value of assets since the prior valuation. The new asset valuation method takes the difference between the expected AVA (based on the annual assumed 8.00% invested return rate) and the actual MVA each year, and recognize the excess return (or shortfall) at 33% per year.

### Summary of Benefit Provisions

A. Eligibility

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 FPPA and the plan has been closed. All members hired on or after October 1, 2006 will become members of the Statewide Defined Benefit Plan.

B. Compensation

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 (including Annual Pay in lieu of leave) that is part of the members annual fixed periodic compensation. Also, all salary amounts deferred for 457 or Section 125 “cafeteria plan” are included.

C. Contribution Rate

Members of this fund are currently contributing at the rate of 10% of base salary.

D. Normal Retirement Benefit

A member's Normal Retirement Date shall be the date on which the member has completed at least 25 years of credited service and has attained age of 55. Any member who elects to retire on or after his Normal Retirement Date shall be eligible for a monthly pension equal to 2% of Final Average Salary for each year of service for the first 10 years, plus 2.85% of Final Average Salary for each year of service in excess of 10 years. The maximum monthly pension is 77% of Final Average Salary. The maximum pension is earned upon completing 30 years of service.

E. Early Retirement Benefit

A member shall be eligible for an Early Retirement Benefit payable on or after the attainment of age 50 and completion of 20 years of service. The Early Retirement Benefit is 2% of Final Average Salary for each year of service for the first 10 years, plus 2.85% of Final Average Salary for each year of service in excess of 10 years. The maximum monthly pension is 77% of Final Average Salary. The Early Retirement Benefit shall be reduced 4.615% for each year that the benefit commences before age 55.

F. Termination Benefit

1. Vested Retirement Benefit

A member who terminates with at least ten years of active service may leave the contributions in the fund and when the member attains age 55 be eligible to receive a monthly vested benefit equal to 2% of Final Average Salary for each year of credited service for the first 10 years, plus 2.85% of Final Average Salary for each year of credited service in excess of 10 years. The maximum benefit is 77% of Final Average Salary.

**Summary of Benefit Provisions  
(Continued)**

2. Severance Benefit

In lieu of a future pension, a member may upon termination elect to have the accumulated contributions refunded in a lump sum. Interest is credited at 5% per annum.
- G. Death and Disability Benefits
  1. Pre-Retirement Death and Disability Benefit

None.
  2. Post-Retirement Death and Disability Benefit

If a retired member dies, the “qualified surviving spouse” shall receive, until death, a monthly pension equal to 70% 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.”
- H. 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% for any one year. Cost-of-living adjustments begin on October 1<sup>st</sup> immediately prior to the earlier of attainment of age 65 or ten years after benefit payments commenced.
- I. Deferred Retirement Option Plan (DROP)

A member may elect to participate in the DROP after reaching eligibility under “Rule of 75” with a minimum age of 50 years. This means that a member must attain age 50 and the sum of his or her credited service must total 75 or greater at date of severance in order to qualify for the DROP program. A member can continue 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. The member shall self-direct the investments of their DROP funds.

**Summary of Benefit Provisions  
(Continued)**

J. Supplemental Retirement Benefit

None.

K. Final Average Salary

Final Average Salary is the average of monthly compensation (defined in B above), awarded to the member during the eighteen months immediately preceding termination or retirement.

L. 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 Board 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. 04-107).

M. Stabilization Reserve Account (SRA)

Annually, at the discretion of the 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 amounts in this individual account upon election of normal, vested, early, 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.

N. Changes

None.

### 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 8%.

**Supplemental Studies**

A. Costs associated with Closing the Plan to New Entrants

1. Amendment

The City of Colorado Springs has agreed to fund the additional funding requirements of closing the New Hire Fire Pension Plan. An actuarial valuation was performed in order to determine the difference between the New Hire Fire Pension Plan as an open and a closed plan. This difference will be funded annual by the City of Colorado Springs. All other costs of the New Hire Fire Pension Plan will continue to be equally shared by the members of the Plan and the City of Colorado Springs, capped at 10%.

The difference between the open and closed plan is the difference in payments on the Unfunded Accrued Liability for a payment assuming a growing payroll vs. a payment will non-increasing payroll.

2. Analysis

Item	Closed Plan	Open Plan	Difference
(1)	(2)	(3)	(4)
a. Unfunded Actuarial Accrued Liability	\$ 19,060,116	\$ 19,060,116	\$ 0
b. Calculated Contribution	25.542%	21.279%	4.263%

3. Comments

The plan has an underfunded position and this creates a cost associated with closing the plan. If the plan reaches a surplus position again in the future due to better than expected experience, then at that time there would be no additional cost to the City.

For 2012, the employee contribution rate is 50% of the required contribution rate based on an open plan but not more than 10.00%. The employer contribution rate is the remainder of the cost, or 15.542%. Therefore, the total employee/employer contribution rate will be 25.542% (10.00% + 15.542%).

**Supplemental Studies**

**(Continued)**

B. 5-year Deterministic Projection

Because the Plan is closed to new members, the amortization policy has been changed to be level dollar effective January 1, 2008. In addition, the amount of payroll available to base the amortization payments is expected to decrease as the population of the Plan turns over without being replaced. The net effect will be increases in the required employer contribution rate.

The following exhibit provides an illustration of how the current valuation would expect the contribution rate to change over the next few valuations if there are no gains or losses.

Year	Amortization cost (\$000)	Expected Salary(\$000)	Amortization Payment%	Employer NC%	Total Rate
2012	\$ 1,684	\$ 20,359	8.27%	17.27%	25.54%
2013	1,684	20,423	8.25%	17.27%	25.52%
2014	1,684	20,411	8.25%	17.27%	25.52%
2015	1,684	20,191	8.34%	17.27%	25.61%
2016	1,684	19,838	8.49%	17.27%	25.76%