



# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

May 17, 2011

Ms. Pam Spaccarotella  
Finance Director  
City of Omaha  
1819 Farnam Street  
Omaha, NE 68183

**RE: Actuarial Valuation as of January 1, 2011**

Dear Ms. Spaccarotella:

Enclosed are 12 copies of the written report of our actuarial valuation as of January 1, 2011 for the 2011 plan year for the City of Omaha Police & Fire Retirement System. The actuarial required contribution (ARC) for the System for the 2011 plan year is 63.469%. The scheduled contribution rate for 2011 is 44.759%, resulting in a shortfall of 18.710% of pay.

Please call if you have any questions.

Sincerely,

Patrice A. Beckham, FSA, EA, FCA, MAAA  
Consulting Actuary

Enclosures

S:City of Omaha/ Police & Fire 2011 Valuation

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**Cavanaugh Macdonald**  
CONSULTING, LLC

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**The City of Omaha  
Police & Fire Retirement System**

**Actuarial Valuation as of  
January 1, 2011**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

May 18, 2011

Board of Trustees  
City of Omaha Police and Fire Retirement System  
1819 Farnam Street  
Omaha, NE 68183

## **RE: January 1, 2011 Actuarial Valuation**

Members of the Board:

In accordance with your request, we have completed an Actuarial Valuation of the City of Omaha Police and Fire Retirement System as of January 1, 2011 for the plan year ending December 31, 2011. The major findings of the valuation are contained in this report.

The actuarial assumptions reflected in this report are unchanged from last year's report. However, significant changes to the benefit structure for police members are first reflected in this valuation. The contract signed with the police union in September 2010 provided for significant increases to the future contributions to the System as well as significant reductions to the benefit provisions for current and future police members which lowered the cost of the System. As of the date this report was issued, a contract has not been finalized with the fire union, so the same benefit structure as last year was used.

This is the first valuation prepared by Cavanaugh Macdonald Consulting, LLC (CMC). As part of our transition work, we replicated the January 1, 2010 actuarial valuation. Results were well within acceptable limits, but there were differences in the key valuation results. The normal cost rate determined by CMC was 28.18% versus 28.91% by Milliman. The unfunded actuarial liability, calculated by CMC, was very close (0.25% or \$2.6 million) to that shown in the January 1, 2010 actuarial valuation report. These differences are neither unusual nor significant. It is very common for differences in valuation results to occur due to the use of different pension valuation software.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information provided in prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculation may need to be revised.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: experience differing from that anticipated by the economic or demographic assumptions; increases or decreases expected as part of the natural

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Board of Trustees  
May 18, 2011  
Page 2

operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the City. Actuarial computations presented in this report under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the City's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

The consultants who worked on this assignment are pension actuaries. CMC's advice is not intended to be a substitute for qualified legal or accounting counsel.

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries, have experience in performing valuations for public retirement plans, and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board and the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix B.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

A handwritten signature in blue ink that reads 'Patrice Beckham'.

Patrice A. Beckham, FSA, EA, FCA, MAAA  
Consulting Actuary

A handwritten signature in blue ink that reads 'Brent A. Banister'.

Brent A. Banister, PhD, FSA, EA, FCA, MAAA  
Senior Actuary



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## EXECUTIVE SUMMARY

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This report presents the results of the January 1, 2011 actuarial valuation of the City of Omaha Police and Fire Retirement System. The primary purposes of performing the valuation are:

- to estimate the liabilities for the future benefits expected to be provided by the System;
- to determine the actuarial contribution level, based on the System's funding policy;
- to measure and disclose various asset and liability measures;
- to monitor any deviation between actual plan experience and experience predicted by the actuarial assumptions, so that recommendations for assumption changes can be made when appropriate;
- to analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

The actuarial assumptions reflected in this report are unchanged from last year's report. However, significant changes to the benefit structure for Police members are first reflected in this valuation. The contract signed with the police union in September 2010 provided for significant increases to the future contributions to the System as well as significant reductions to the benefit provisions for current and future police members which lowered the cost of the System. The changes in the plan provisions for police members resulted in a decrease in the unfunded actuarial liability of \$52 million and a decrease in the normal cost rate of 5.23% (for police members). The contribution shortfall for 2011 is down to 18.71% from 28.16% last year, a dramatic improvement. The changes in the police contract are expected to produce a significant improvement in the sustainability of the System over the long term. The full impact of the provisions of the police contract are not reflected in this valuation because some of the benefit changes are effective only for new hires and, thus, will unfold over time as new hires replace current active members. As of the date this report was issued, a contract has not been finalized with the fire union, so the same benefit structure as last year was used in this valuation. Based upon the studies conducted by the prior actuary, if similar changes are made to the benefit provisions for fire members, the System's long term funding outlook will be further improved and expected to become fully funded in about 45 years if all actuarial assumptions are met.

This is the first valuation prepared by Cavanaugh Macdonald Consulting, LLC (CMC). As part of our transition work, we replicated the January 1, 2010 actuarial valuation. Results were well within acceptable limits, but there were differences in the key valuation results. The normal cost rate determined by CMC was 28.18% versus 28.91% by Milliman. The unfunded actuarial liability, calculated by CMC, was very close (0.25% or \$2.6 million) to that shown in the January 1, 2010 actuarial valuation report. These differences are neither unusual nor significant. It is very common for differences in valuation results to occur due to the use of different pension valuation software.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2011. The valuation results reflect net favorable experience for the past plan year as demonstrated by an unfunded actuarial liability that was lower than expected based on the actuarial assumptions used in the January 1, 2010 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in a loss of \$1.8 million and favorable experience on liabilities resulted in a gain of \$11.1 million. Net experience was an actuarial gain of \$9.3 million.



## EXECUTIVE SUMMARY

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the recommended contribution are based on the actuarial (smoothed) value of assets – not the pure market value. The significant investment losses that occurred in 2008 have almost been completely recognized in the smoothing process. The investment return on the market value of assets during 2010 was about 16%, which exceeded the assumed rate of 8.00%. However, due to the existing deferred investment loss at January 1, 2010 (\$35 million), the rate of return on the actuarial value of assets was about 7.6%. The investment return in 2010 that was in excess of 8.00% served to decrease the amount of the unrecognized investment loss at January 1, 2011. In addition, part of the remaining loss is recognized in the 2011 valuation by application of the smoothing method. As of January 1, 2011, the actuarial value of assets exceeds the market value by only \$3.5 million or 0.8% so a small deferred investment loss still exists. Actual returns over the next few years will determine if and how, the \$3.5 million of deferred investment loss is recognized. For example, a return of 9.4% on the market value of assets in 2011 would result in a return of 8.00% on the actuarial value of assets.

### ASSETS

As of January 1, 2011, the System had total funds of \$452.6 million, when measured on a market value basis. This was an increase of \$47.2 million from the prior year, and represents an approximate 16% rate of return.

The market value of assets is not used directly in the actuarial calculation of the System's funded status and the recommended contribution. An asset valuation method is used to smooth the effects of market fluctuations. The actuarial value of assets is equal to the expected asset value (based on last year's actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 8.00%) plus 1/3 of the difference between the actual market value and the expected asset value. See Exhibit 2 for the detailed development of the actuarial value of assets as of January 1, 2011. Although part of the deferred investment loss from 2008 was recognized this year, the rate of return on the actuarial value of assets was almost 8%. The portion of deferred asset loss recognized during the calculation of the January 1, 2011 actuarial value of assets resulted in an actuarial loss of \$1.8 million.

The components of the change in the market value and actuarial value of assets are shown below:

	Market Value (\$M)	Actuarial Value (\$M)
<b>Net Assets, January 1, 2010</b>	\$ 405.4	\$ 440.5
• City and Member Contributions	+ 40.5	+ 40.5
• Benefit Payments and Refunds	- 57.6	- 57.6
• Investment Gain/(Loss)	+ 64.3	+ 32.8
<b>Net Assets, January 1, 2011</b>	452.6	456.2
<b>Estimated Net Rate of Return</b>	16.3%	7.6%



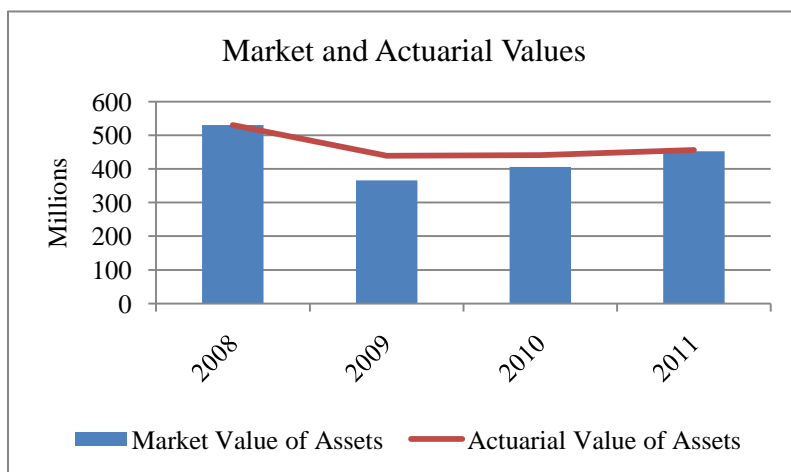
## EXECUTIVE SUMMARY

The total investment loss not recognized as of January 1, 2011 is \$3.5 million, down from \$35.1 million in last year's valuation. These unrecognized losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by the recognition of gains derived from future experience. This means that earning the assumed rate of investment return of 8.00% per year (net of investment expenses) on a market value basis will result in a small actuarial loss on the actuarial value of assets in the next few years.

The unrecognized investment losses represent about 0.8% of the market value of assets (down significantly from 8.7% in the 2010 valuation). Unless offset by future investment gains or other favorable experience, the recognition of the \$3.5 million loss is expected to have some impact on the future unfunded actuarial liability and the actuarial contribution requirement. If the deferred losses were recognized immediately in the actuarial value assets, the unfunded actuarial liability would increase by \$4 million to \$563 million, the funded percentage would decrease from 45% to 44% and the actuarially determined contribution would increase from 63.47% to 63.67%.

A comparison of asset values on both a market and actuarial basis for the last four years is shown below.

	January 1 (\$M)			
	2011	2010	2009	2008
Market Value of Assets	\$453	\$405	\$366	\$530
Actuarial Value of Assets	\$456	\$440	\$439	\$530
Actuarial Value/Market Value	101%	109%	120%	100%



*An asset smoothing method is used to mitigate the volatility in the market value of assets. By using a smoothing method, the actuarial (or smoothed) value can be either above or below the pure market value. The significant investment losses in 2008 resulted in the actuarial value of assets being above the market value for the last three years.*





## **EXECUTIVE SUMMARY**

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### **LIABILITIES**

The first step in determining the contribution level for the System is to calculate the liabilities for all expected future benefit payments. These liabilities represent the present value of future benefits (PVFB) expected to be earned by the current members, assuming that all actuarial assumptions are realized. Thus, the PVFB reflects future service and salary increases that are expected to occur in the future before a benefit becomes payable. The PVFB components can be found in the liabilities portion of the valuation balance sheet (see Exhibit 3).

The other critical measurement of System liabilities in the valuation process is the actuarial liability (AL). This is the portion of the PVFB that will not be paid by the future normal costs (i.e. it is the portion of the PVFB that is allocated to past service). As of January 1, 2011, the actuarial liability for the System was \$1,028,866,353 and the actuarial value of assets was \$456,158,774. The unfunded actuarial liability was \$572,707,579.

The following chart compares the Actuarial Liability (AL) and assets for the current and prior valuation.

	As of January 1	
	2011	2010
Actuarial Liability (AL)	\$1,028,866,353	\$1,034,716,125
Assets at Actuarial Value	\$456,158,774	\$440,478,409
Unfunded Actuarial Liability (AVA)	\$572,707,579	\$594,237,716
Funded Ratio (Actuarial Value)	44%	43%
Assets at Market Value	\$452,640,303	\$405,390,038
Unfunded Actuarial Liability (MVA)	\$576,226,050	\$629,326,087
Funded Ratio (Market Value)	44%	39%

### **EXPERIENCE FOR THE 2010 PLAN YEAR**

The difference between the actuarial liability and the actuarial value of assets at the same date is referred to as the unfunded actuarial liability (UAL). Benefit improvements, experience gains/losses, changes in the actuarial assumptions, and actual contributions made will impact the amount of the unfunded actuarial liability.



## EXECUTIVE SUMMARY

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Actuarial gains (or losses) result from actual experience that is more (or less) favorable than anticipated based on the actuarial assumptions. These “experience” (or actuarial) gains or losses are reflected in the unfunded actuarial liability and are measured as the difference between the expected unfunded actuarial liability and the actual unfunded actuarial liability, taking into account any changes due to assumption or benefit provision changes. The experience, in total, was favorable (a lower unfunded actuarial liability than expected). There was an actuarial loss of around \$1.8 million on the actuarial value of assets and an actuarial gain of about \$11.1 million on liabilities largely due to salary increases lower than expected based on the actuarial assumptions.

The change in the unfunded actuarial liability between January 1, 2010 and 2011 is shown below (in millions):

<b>Unfunded Actuarial Liability, January 1, 2010</b>	<b>\$594</b>
• Expected change in UAL	6
• Contribution shortfall in 2010	32
• Investment experience	2
• Demographic experience	(11)
• Other experience	1
• Change in actuarial firms	1
• Changes in plan provisions	(52)
• Change in actuarial assumptions / methods	0
<b>Unfunded Actuarial Liability, January 1, 2011</b>	<b>\$573</b>

Due to the use of an asset smoothing method, there are deferred investment losses from 2008 which have not been recognized in prior valuations. As a result, there was an actuarial loss on investment experience despite a return on the market value of assets of around 16%, which was above the 8.00% assumption. This investment return on the actuarial value of assets was slightly less than 8%, which increased the unfunded actuarial liability by \$2 million. It was offset by favorable demographic experience (\$11 million) which was primarily attributable to lower salary increases than expected.



## EXECUTIVE SUMMARY

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### CONTRIBUTION LEVELS

The annual contribution to the System is composed of two parts:

- (1) The normal cost (which is the allocation of costs attributed to the current year's membership service) and,
- (2) The amortization payment on the Unfunded Actuarial Liability.

The normal cost rate is independent of the System's funded status and represents the cost, as a percent of payroll, of the benefits provided by the System which is allocated to the current year of service. The total normal cost for the System is 25.836% of pay, or about \$27.1 million this year. When offset by the expected employee contributions, the employer portion of the normal cost is 9.923% of pay, or about \$10.4 million. The normal cost represents the long-term cost of the benefit structure in the System. The normal cost declined from 28.91% in last year's valuation largely because of the change in the benefit structure for police members.

The System's total actuarially determined contribution rate (payable as a % of member payroll) decreased by 1.39% of pay to 63.47% on January 1, 2011, from 64.86% on January 1, 2010. The primary components of this change are as follows:

	<b>Rate</b>
Total Actuarial Contribution Rate, January 1, 2010	64.86 %
• Actuarial (Gain) / Loss - Investment Experience	0.11
• Actuarial (Gain) / Loss - Other Experience	(0.20)
• Change In Actuarial Firms	(0.59)
• Assumption Changes	0.00
• Plan Benefit Changes (police only)	(3.78)
• Contributions Less Than Actuarial Rate	3.07
Total Actuarial Contribution Rate, January 1, 2011	63.47 %

As the result of plan experience during 2010, the System has an unfunded actuarial liability of \$573 million (actuarial liability is greater than actuarial assets). The City makes scheduled payments of \$1,327,600 annually through the year 2028. The present value of these contributions was applied to the Unfunded Actuarial Liability (UAL) to determine the amount of the UAL to be funded as a percent of payroll (contribution rates). The adjusted unfunded actuarial liability to be financed as contributions that are a level percent of pay is being funded over a closed 30-year period beginning January 1, 2003. Twenty-two years remain as of the valuation data. The resulting payment is 37.633% of pay. As a result, the total contribution for 2011 is 63.469% of pay (25.836% + 37.633%). The scheduled contributions for the year are 44.759%. The resulting contribution shortfall is 18.710% of pay.



## EXECUTIVE SUMMARY

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### COMMENTS

The System's funding has been of grave concern for the past several years. A significant amount of time and effort has been expended over the last few years to address the long term funding problem of the System. The contract signed with the police union in September 2010 provided for significant increases to the future contributions to the System as well as significant reductions to the benefit provisions for current and future police members which lowered the cost of the System. The changes in the plan provisions for police members resulted in a decrease in the unfunded actuarial liability of \$52 million and a decrease in the normal cost rate of 5.23% (for police members only). The contribution shortfall for 2011 is down to 18.71% from 28.16% last year, a dramatic improvement. The changes in the police contract are expected to produce a significant improvement in the sustainability of the System over the long term. The full impact of the provisions of the police contract are not reflected in this valuation because some of the benefit changes are effective only for new hires and, thus, will unfold over time as new hires replace current active members. However, even with these changes, the contribution shortfall for 2011 is significant, representing about \$20 million. As of the date this report was issued, a contract has not been finalized with the fire union, so the same benefit structure as last year was used in this valuation. Therefore, the impact of the changes in the plan provisions for police members was mitigated by the fire members continuing under the prior benefit structure. Based upon the studies conducted by the prior actuary, if similar changes are made to the benefit provisions for fire members, the System's long term funding outlook will be further improved and the System is expected to become fully funded in about 45 years if all actuarial assumptions are met.

Another year of strong investment performance (17% return) nearly eliminated the deferred investment loss that remained from the 2008 plan year. On January 1, 2011, the actuarial value of assets was \$456 million and the market value of assets was \$453 million, a small difference of \$3 million. Although it is good news that the deferred investment losses are down to \$3 million, the funded ratio of the system is still very low. It increased to 45% on a market value basis in the 2011 valuation from 39% in the 2010 actuarial valuation. There was also a gain on actuarial liabilities in the 2011 valuation, largely due to salary increases that were lower than expected. The favorable investment and demographic experience, along with the plan changes improved the System's funded status and reduced the amount of the contribution shortfall.

The actual contributions to the System for 2010 of 21.76% of pay were significantly below the actuarial contribution rate of 49.92% of pay. This shortfall in the contribution rate of 28.16% of pay, or about \$32 million, resulted in an increase in the unfunded actuarial liability. The actuarial contribution rate in the 2011 valuation is 47.556% compared to the contribution rate in the City ordinance of 28.846%, which results in a shortfall of 18.710% of pay or \$20 million.

Absent contributions at the full actuarial contribution rate, the UAL is expected to increase by the shortfall, and the actuarial contribution rate is also expected to increase. The funded status is also expected to decline. If the fire members negotiate a contract similar to the police, the actuarial contribution rate will decline. However, even that would require some time before the contribution



## EXECUTIVE SUMMARY

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shortfall is eliminated as the impact of changes for new hires will be reflected over time as new members are hired.

As mentioned earlier in this report, the System uses an asset smoothing method in the actuarial valuation. While this is a very common procedure for public retirement systems, it is important to be aware of the potential impact of the unrecognized investment experience. Although there is a very small difference between the actuarial and market value of assets, the key valuation results from the 2011 valuation are shown below using both the actuarial and market value of assets to provide full disclosure of the funded status of the System:

	<b>\$ Millions</b>	
	<b>Using Actuarial Value of Assets</b>	<b>Using Market Value of Assets</b>
Actuarial Liability	\$1,028.9	\$1,028.9
Asset Value	456.2	452.6
Unfunded Actuarial Liability	572.7	576.3
Present Value of Prior Service Payments	12.9	12.9
Unfunded Actuarial Liability for Funding	559.8	563.4
Funded Ratio	44.9%	44.5%
Normal Cost Rate	25.836%	25.836%
UAL Contribution Rate	37.633%	37.900%
Actuarial Contribution Rate	63.469%	63.736%



**SECTION I – VALUATION RESULTS**

**THE CITY OF OMAHA POLICE AND FIRE RETIREMENT SYSTEM  
PRINCIPAL VALUATION RESULTS**

	January 1, 2011	January 1, 2010	% Chg
<b>MEMBERSHIP</b>			
1. Active Membership			
- Number of Members	1,422	1,431	-0.6
- Projected Payroll for Upcoming Fiscal Year	\$105,025,610	\$110,963,955	-5.4
- Average Projected Payroll	\$73,858	\$77,543	-4.8
- Average Attained Age	38.6	38.2	1.2
- Average Entry Age	28.5	28.4	0.4
2. Inactive Membership			
- Number of Retirees / Beneficiaries	1,214	1,175	3.3
- Number of Disabilities	240	248	-3.2
- Number of Deferred Vesteds	9	7	28.6
- Average Annual Benefit	\$47,241	\$41,115	14.9
<b>ASSETS AND LIABILITIES</b>			
1. Net Assets			
- Market Value	\$452,640,303	\$405,390,038	11.7
- Actuarial Value	\$456,158,774	\$440,478,409	3.6
2. Projected Liabilities			
- Retired Members and Beneficiaries	\$605,177,340	\$577,069,521	4.9
- Disabled Members	\$77,493,728	\$76,594,310	1.2
- Other Inactive Members	\$3,080,341	\$1,641,621	87.6
- Active Members	\$619,615,592	\$712,662,498	-13.1
- Total Liability	\$1,305,367,001	\$1,367,967,950	-4.6
3. Actuarial Liability	\$1,028,866,353	\$1,034,716,125	-0.6
4. Unfunded Actuarial Liability	\$572,707,579	\$594,237,716	-3.6
5. Funded Ratios			
Actuarial Value Assets / Actuarial Liability	44.34%	42.57%	4.1
Market Value Assets / Actuarial Liability	43.99%	39.18%	12.3
<b>CONTRIBUTIONS</b>			
1. Normal Cost Rate	25.836%	28.91%	-10.6
2. UAL Rate	<u>37.633%</u>	<u>35.95%</u>	4.7
3. Total Contribution Rate (1) + (2)	63.469%	64.86%	-2.1
4. Less Employee Contribution Rate	<u>(15.913%)</u>	<u>(14.94%)</u>	6.5
5. Less City Contribution Per Ordinance	(27.582%)	(20.56)%	34.1
6. Less City Past Service Payment	<u>(1.264%)</u>	<u>(1.20%)</u>	5.3
7. Contribution Shortfall	18.710%	28.16%	-33.6



**SECTION I – VALUATION RESULTS**

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**EXHIBIT 1**  
**SUMMARY OF FUND ACTIVITY**  
**(Market Value Basis)**  
**For Year Ended December 31, 2010**

<b>Assets at January 1, 2010</b>	\$	405,390,038
<b>Receipts:</b>		
City Contributions		24,183,614
Employee Contributions		16,271,773
Investment Income		66,858,792
<b>Total Receipts</b>		107,314,179
<b>Disbursements:</b>		
Benefits Paid to Members		57,570,141
Investment Fees		2,481,747
Other		12,026
<b>Total Disbursements</b>		60,063,914
<b>Assets as of December 31, 2010</b>	\$	452,640,303
<b>Annualized Yield</b>		
- Gross		16.9%
- Net of Expenses		16.3%



## SECTION I – VALUATION RESULTS

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### EXHIBIT 2

#### DETERMINATION OF ACTUARIAL VALUE OF ASSETS

The actuarial value of assets is used to minimize the impact of annual fluctuations in the market value of investments on the contribution rate. The current asset valuation method is called the “Expected +33% Method”.

The “expected value” of assets is determined by applying the investment return assumption to last year’s actuarial value of assets and the net difference of receipts and disbursements for the year. The actual market value is compared to the expected value and 33% of the difference (positive or negative) is added to the expected value to arrive at the actuarial value of assets for the current year.

1.	Actuarial Value of Assets as of January 1, 2010	\$	440,478,409
2.	Actual Receipts / Disbursements		
	a. Total Contributions		40,455,387
	b. Benefit Payments		(57,582,167)
	c. Net Change		(17,126,780)
3.	Expected Actuarial Value of Assets as of January 1, 2011 { (1) * 1.08 } + {(2c) * 1.08 <sup>1/2</sup> }		457,918,010
4.	Market Value of Assets as of January 1, 2011		452,640,303
5.	Excess of Market Value over Expected Value as of January 1, 2011		(5,277,707)
6.	Preliminary Actuarial Value of Assets as of January 1, 2011 [ (3) + 1/3 of (5) ]		456,158,774
7.	Calculation of 20% Corridor		
	a. 80% of (4)		362,112,242
	b. 120% of (4)		543,168,364
8.	Final Actuarial Value of Assets as of January 1, 2011 (6), but not < (7a), nor > (7b)	\$	456,158,774
9.	Rate of Return on Actuarial Value of Assets		7.6%



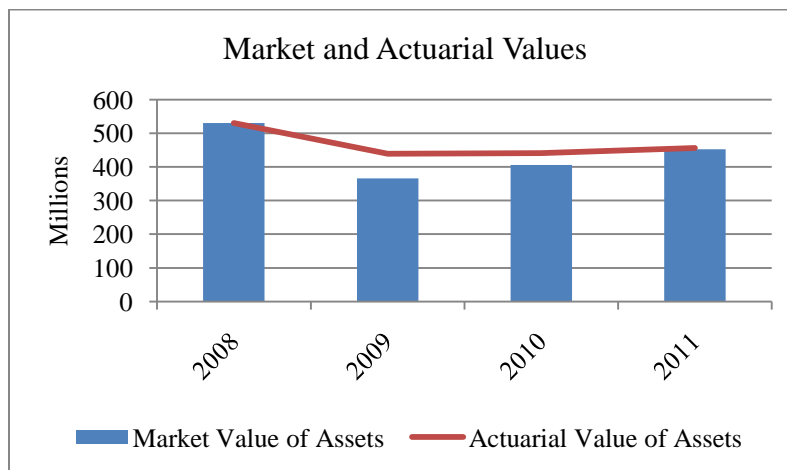


## SECTION I – VALUATION RESULTS

### EXHIBIT 2 (continued)

A historical comparison of the market and actuarial value of assets is shown below:

Date	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	AVA / MVA
1/1/2008	529,923,390	530,493,413	100.1%
1/1/2009	365,923,877	439,108,652	120.0%
1/1/2010	405,390,038	440,478,409	108.7%
1/1/2011	452,640,303	456,158,774	100.8%





SECTION I – VALUATION RESULTS

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**EXHIBIT 3**  
**ACTUARIAL BALANCE SHEET**

An actuarial statement of the status of the plan in balance sheet form as of January 1, 2011 is as follows:

**Assets**

Current assets (actuarial value)	\$	456,158,774
Present value of future normal costs		276,500,648
Present value of future contributions to fund unfunded actuarial liability		<u>572,707,579</u>
<b>Total Assets</b>	<b>\$</b>	<b><u>1,305,367,001</u></b>

**Liabilities**

Present value of future retirement benefits for:

Active employees	\$	605,784,973
Retired employees, contingent annuitants and spouses receiving benefits		605,177,340
Deferred vested employees		3,022,765
Inactive employees due refunds		57,576
Inactive employees – disabled		<u>77,493,728</u>
<b>Total</b>	<b>\$</b>	<b>1,291,536,382</b>

Present value of future death benefits payable upon death of active members		8,322,483
--	--	-----------

Present value of future benefits payable upon termination of active members		<u>5,508,136</u>
--	--	------------------

<b>Total Liabilities</b>	<b>\$</b>	<b><u>1,305,367,001</u></b>
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## SECTION I – VALUATION RESULTS

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### EXHIBIT 4 UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2011

The actuarial liability is the portion of the present value of future benefits which will not be paid by future normal costs. The actuarial value of assets is subtracted from the actuarial liability to determine the unfunded actuarial liability.

The City makes scheduled payments of \$1,327,600 annually through the year 2028. The present value of these contributions was applied to the Unfunded Actuarial Liability (UAL) to determine the amount of the UAL to be funded as a percent of payroll (contribution rates).

1. Present Value of Future Benefits	\$	1,305,367,001
2. Present Value of Future Normal Costs		276,500,648
3. Actuarial Liability (1) – (2)		1,028,866,353
4. Actuarial Value of Assets		456,158,774
5. Unfunded Actuarial Liability (3) – (4)		572,707,579
6. Present Value of Prior Service Payments		12,930,228
7. Adjusted Unfunded Actuarial Liability (Payable from Payroll Related Contributions) (5) – (6)	\$	559,777,351



## SECTION I – VALUATION RESULTS

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### EXHIBIT 5

#### CALCULATION OF ACTUARIAL GAIN / (LOSS)

For Plan Year Ending December 31, 2010

#### Liabilities

1. Actuarial liability less prior service payments as of January 1, 2010	\$	1,021,751,679
2. Normal cost as of January 1, 2010		31,574,892
3. Interest at 8.00% on (1) and (2) to December 31, 2010		84,266,126
4. Benefit payments during 2010		57,582,167
5. Interest on benefit payments		2,258,976
6. Decrease due to change in benefit provisions		(52,197,182)
7. Increase due to change in actuary		1,463,820
8. Expected actuarial liability as of December 31, 2010		1,027,018,192
(1) + (2) + (3) - (4) - (5) + (6) + (7)		
9. Actuarial liability less prior service payments as of December 31, 2010		1,015,936,125

#### Assets

10. Actuarial value of assets as of January 1, 2010		440,478,409
11. Contributions during 2010		40,455,387
12. Benefit payments during 2010		57,582,167
13. Interest on items (10), (11) and (12)		34,566,381
14. Expected actuarial value of assets as of December 31, 2010		457,918,010
(10) + (11) - (12) + (13)		
15. Actual actuarial value of assets as of December 31, 2010		456,158,774

#### (Gain) / Loss

16. Expected unfunded actuarial liability / (surplus)		
(8) – (14)		569,100,182
17. Actual unfunded actuarial liability / (surplus)		
(9) – (15)		559,777,351
18. Actuarial (Gain) / Loss		
(17) – (16)		(9,322,831)
19. Actuarial (Gain) / Loss on Actuarial Assets		
(14) – (15)		1,759,236
20. Actuarial (Gain) / Loss on Actuarial Liability		
(9) – (8)		(11,082,067)



## SECTION I – VALUATION RESULTS

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### EXHIBIT 6

#### DEVELOPMENT OF 2011 ACTUARIAL CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability (UAL) payment. The System is financed by contributions from the employees and the City.

1. (a)	Normal Cost	\$ 26,530,449
(b)	Covered Payroll	\$ 102,689,613
(c)	Normal Cost Rate (a) / (b)	25.836%
2.	Unfunded Actuarial Liability / (Surplus) at Valuation Date	\$ 559,777,351
3.	Amortization Factor Level Percent of Payroll over 22 Years*	15.23005
4.	Unfunded Actuarial Liability / (Surplus) Payment [(2) / (3)] x 1.08 <sup>1/2</sup>	\$ 38,196,702
5.	Prior Service Payment	1,327,600
6.	Total Projected Payroll for the Year	\$ 105,025,610
7.	Unfunded Liability and Prior Service Payments as Percent of Pay [(4) + (5)] / (6)	37.633%
8.	Total Contribution Rate (1c) + (7)	63.469%
9.	Employee Contribution Rate	15.913%
10.	City Ordinance Contribution Rate	27.582%
11.	City Past Service Contribution Rate	1.264%
12.	Contribution Shortfall (8) – (9) – (10) – (11)	18.710%

\*This assumes all actuarial assumptions are met in the future, including a 4% increase in total covered payroll.



## SECTION I – VALUATION RESULTS

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### EXHIBIT 7

#### ANALYSIS OF EXPERIENCE

The purpose of conducting an actuarial valuation of a retirement plan is to estimate the costs and liabilities for the benefits expected to be paid from the plan, to determine the annual level of contribution for the current plan year that should be made to support these benefits and, finally, to analyze the plan's experience. The costs and liabilities of this retirement plan depend not only upon the benefit formula and plan provisions but also upon factors such as the investment return on the Fund, mortality rates among active and retired members, withdrawal and retirement rates among active members, rates at which salaries increase and the rate at which the cost of living increases.

The actuarial assumptions employed as to these and other contingencies in the current valuation are set forth in Appendix B of this report.

Since the overall results of the valuation will reflect the choice of assumptions made, periodic studies of the various components comprising the plan's experience are conducted in which the experience for each component is analyzed in relation to the assumption used for that component (experience study). This summary is not intended to be an actual "experience study", but rather an analysis of sources of gain and loss in the past plan year.

#### Gain/(Loss) By Source

The System experienced a net actuarial gain on liabilities of \$11,083,067 during the plan year ended December 31, 2010, which was partially offset by the actuarial loss on assets of \$1,759,236. The net actuarial loss was \$9,322,831. The major components of this net actuarial experience (loss) are shown below:

<b>Liability Sources</b>	<b>Gain/(Loss)</b>
Salary Increases	\$ 11,781,322
Mortality	4,126,309
Terminations	(72,499)
Retirements	(3,576,576)
Disability	1,551,236
New Entrants/Rehires	(450,941)
Miscellaneous	<u>(2,276,784)</u>
<b>Total Liability Gain/(Loss)</b>	<b>\$ 11,082,067</b>
<b>Asset Gain/(Loss)</b>	<b>\$ (1,759,236)</b>
<b>Net Actuarial Gain/(Loss)</b>	<b>\$ 9,322,831</b>



**SECTION II**  
**SYSTEM ACCOUNTING INFORMATION**

In an effort to enhance the understandability and usefulness of the pension information that is included in the financial reports of pension plans for state and local governments, the Governmental Accounting Standards Board (GASB) has issued Statement No. 25 – Financial Reporting for Defined Benefit Pension Plans and Statement No. 27 – Accounting for Pension by State and Local Governmental Employers.

GASB Statement No. 25 establishes a financial reporting framework for defined benefit plans. In addition to two required statements regarding plan assets, the statement requires two schedules and accompanying notes disclosing information relative to the funded status of the plan and historical contribution patterns.

- The Schedule of Funding Progress provides historical information about the funded status of the plan and the progress being made in accumulating sufficient assets to pay benefits when due.
- The Schedule of Employer Contributions provides historical information about the annual required contribution (ARC) and the percentage of the ARC that was actually contributed.

GASB Statement No. 27 establishes standards for the measurement, recognition, and display of pension expense and related liabilities. Annual pension cost is measured and disclosed on the accrual basis of accounting. In general, the annual pension cost is equal to the ARC with adjustments for past under-contributions or over-contributions. These adjustments are based on the net pension obligation (NPO) that represents the cumulative difference since 1987 between the annual pension cost and the actual contributions to the plan. The first adjustment is equal to interest on the NPO which is added to the ARC. The second adjustment is an amortization of the NPO which is deducted from the ARC. Effective January 1, 2003 the System uses the Entry Age Normal method to determine the ARC and the unfunded actuarial liability (or surplus) is amortized as a level percentage of payroll.



EXHIBIT 8

SCHEDULE OF EMPLOYER CONTRIBUTIONS

In accordance with Statement No. 25 of the Governmental Accounting Standards Board

Fiscal Year Ending	Annual Required Contribution* (a)	Total Employer Contribution* (b)	Percentage of ARC Contributed ( b/a )
12/31/2005	\$ 26,255,804	\$ 17,762,209	67.65%
12/31/2006	31,102,053	20,171,610	64.86%
12/31/2007	34,842,280	20,699,211	59.41%
12/31/2008	38,073,021	21,700,806	57.00%
12/31/2009	50,507,561	22,701,608	44.95%
12/31/2010	55,488,062	24,183,493	43.58%

\*This information was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting.

Notes to the Required Schedules:

- The traditional Entry Age Normal cost method is used.
- The actuarial value of assets is determined based on a method that smoothes the effects of short term volatility in the market value investments. The actuarial value is equal to the expected value, based on the assumed rate of return, plus 1/3 of the difference between market and expected values. A corridor of 80% to 120% of market value is also applied.
- Economic assumptions are as follows:
  - Investment return rate: 8.00%
  - Salary increase rates: from 6.5% at 1 year of service to 4% at 30 years of service
  - Inflation rate: 3.5%
  - Payroll growth: 4.00%
  - Post-retirement benefit increases: the lesser of 3% or \$50 (\$65 for Fire retirements after June 30, 2007). The increase will be made annually, beginning in the 13<sup>th</sup> month of retirement.
- The amortization method is a closed 30 year period, level percentage of payroll (the unfunded actuarial liability is amortized over 22 years as of January 1, 2011).





## EXHIBIT 9

**DEVELOPMENT OF THE NET PENSION OBLIGATION  
IN ACCORDANCE WITH GASB STATEMENT NO. 27**

<b>Fiscal Year End:</b>	<b>12/31/2004</b>	<b>12/31/2005</b>	<b>12/31/2006</b>	<b>12/31/2007</b>	<b>12/31/2008</b>	<b>12/31/2009</b>	<b>12/31/2010</b>	<b>12/31/2011</b>
<b>Assumptions and Methods</b>								
Interest Rate	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Payroll Growth	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Amortization Period (years)	30	30	30	30	30	30	30	22
Cost Method	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal
<b>Annual Pension Cost</b>								
Annual Required Contribution (ARC)	\$22,487,399	\$26,255,804	\$31,102,053	\$34,842,280	\$38,073,021	\$50,507,561	\$55,488,062	\$49,945,979
Interest on NPO	543,111	1,000,069	1,670,728	2,530,416	3,639,524	4,917,174	7,098,244	9,539,950
Adjustment to ARC	(603,040)	(1,110,419)	(1,855,081)	(2,809,629)	(4,041,120)	(5,459,749)	(7,881,485)	(8,788,008)
Annual Pension Cost	\$22,427,470	\$26,145,454	\$30,917,700	\$34,563,067	\$37,671,425	\$49,964,986	\$54,704,821	\$50,697,921
<b>Contribution for the Year</b>	\$16,715,500	\$17,762,209	\$20,171,610	\$20,699,211	\$21,700,806	\$22,701,608	\$24,183,493	TBD
<b>Net Pension Obligation (NPO)</b>								
NPO at beginning of year	\$6,788,891	\$12,500,861	\$20,884,105	\$31,630,195	\$45,494,051	\$61,464,670	\$88,728,048	\$119,249,376
Annual Pension Cost for Year	22,427,470	26,145,454	30,917,700	34,563,067	37,671,425	49,964,986	54,704,821	50,697,921
Contributions for year	(16,715,500)	(17,762,209)	(20,171,610)	(20,699,211)	(21,700,806)	(22,701,608)	(24,183,493)	TBD
NPO at end of year	\$12,500,861	\$20,884,105	\$31,630,195	\$45,494,051	\$61,464,670	\$88,728,048	\$119,249,376	TBD

Note: All information prior to 2011 in this exhibit was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting LLC.



## EXHIBIT 10

## SCHEDULE OF FUNDING PROGRESS

In Accordance with Statement No. 25 of the Governmental Accounting Standards Board

Actuarial Valuation Date <sup>1</sup>	Market Value of Assets <sup>2</sup> (a)	Actuarial Liability (AAL) (b)	Unfunded AAL (UAAL) <sup>3</sup> (b-a)	Funded Ratio (a / b)	Covered Payroll (P / R) (c)	UAAL as a Percentage of Covered P / R [(b-a) / c ]
12/31/2005	\$453,300,000	\$703,800,000	\$250,500,000	64.4%	\$86,800,000	288.6%
12/31/2006	507,600,000	801,100,000	293,500,000	63.4%	91,700,000	320.1%
12/31/2007	530,800,000	882,700,000	351,900,000	60.1%	99,600,000	353.3%
12/31/2008	365,900,000	947,600,000	581,700,000	38.6%	99,500,000	584.6%
12/31/2009	405,400,000	1,026,200,000	620,800,000	39.5%	103,900,000	597.5%
12/31/2010	452,600,000	1,093,300,000	640,700,000	41.4%	111,200,000	576.2%
1/1/2011	456,158,774	1,028,866,353	572,707,579	44.3%	105,025,610	545.3%

1. Results prior to 2011 were provided by the prior actuary and were reported at the end of the year rather than the valuation date. All information prior to 2011 in this exhibit was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting LLC
2. The prior actuary reported the market value of assets in column (a). Our understanding of GASB 25/27 is that the valuation methodology should be used for GASB calculations to the extent it complies with GASB 25 parameters. Information reported as of 1/1/2011 and later reflects the valuation methodology including the actuarial value of assets.
3. As of 1/1/2011 the Present Value of Prior Service Payments is not reflected in the Unfunded AAL. For the calculation of the Unfunded AAL used for funded purposes, please refer to Exhibit 4 on page 13 of this report.



**EXHIBIT 11**

**THREE-YEAR TREND INFORMATION**

<b>Fiscal Year Ending</b>	<b>Annual Pension Cost (APC)</b>	<b>Percentage of APC Contributed</b>	<b>Net Pension Obligation</b>
12/31/2008	\$37,671,425	58%	\$61,464,670
12/31/2009	49,964,986	45%	88,728,048
12/31/2010	54,704,821	44%	119,249,376

\*All information prior to 2011 in this exhibit was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting LLC.



APPENDIX A

SUMMARY OF PLAN PROVISIONS

**Average Final Monthly Compensation:**  
Section 22 - 63

Fire: Highest average monthly compensation during any consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned.

Police: Pensionable pay excludes certain overtime pay. For those hired before January 1, 2010, an adjustment is made to include a career average of overtime pay. For those who were age 45 and had at least twenty years of service as of January 1, 2010, highest average monthly compensation is calculated using the highest consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned. All others use the highest seventy-eight (78) pay periods with the final 130 pay periods of service.

**Career Overtime Average (COTA):**

Police only: Each hour an employee earns for overtime is computed back to their date of hire or 1991 (whichever is later) and divided by the number of years the employee worked after December 31, 1990. This amount shall be included in the member's pension calculation.

**Member Contributions:**  
Section 22 – 73(a)  
Section 22 - 68

Rates effective January 1, 2011

Police: 16.35% of total monthly salary for police, scheduled to reduce to 15.35% on January 1, 2014

Fire: 15.40% of total monthly salary for fire.

**City of Omaha Contributions:**  
Section 22 – 73(b)

Rates effective January 1, 2011

Police: 33.17% of each members total monthly salary for police, increasing to 33.67% in 2012.

Fire: 21.015% of each members total monthly salary for fire.

In addition, the City shall make contributions of \$1,327,600 annually through the year 2028.

**Service Retirement Eligibility**  
Section 22 - 75

Police: After age 55 and 10 years of service or age 45 and 20 years of service. Members hired after January 1, 2010 must be 50 rather than 45. If returning with less than 30 years of service a 7% reduction is applied for each year prior to age 55.

Fire: Age 55 and 10 years of service or age 50 and 20 years of service. Age 45 and 25 years of service.



APPENDIX A

SUMMARY OF PLAN PROVISIONS  
(continued)

Service Retirement Pension  
Section 22 - 76

For Police with at least 20 years of service as of latest contract effective date and all Fire members, the following schedule applies.

<u>Years of Service</u>	<u>Minimum Age</u>	<u>Percentage of Average Final Monthly Compensation</u>
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	45**	55%*
25 years	45	75%

\*55% at 20 years of service, plus 2% for each additional six months of service after 20 years and before 25 years.

\*\* The minimum retirement age with less than 25 years is 50 for Fire.

For police who did not have 20 years of service as of the latest contract effective date, the following schedule applies:

<u>Years of Service</u>	<u>Minimum Age</u>	<u>Percentage of Average Final Monthly Compensation</u>
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	45	50%*
25 but less than 30	45	70%**
30 years	45	75%

\*50% at 20 years of service, plus 2% for each additional six months of service after 20 years and before 25 years.

\*\*70% at 25 years of service, plus 1% for each additional six months of service after 25 years and before 27 years, with an additional 0.5% 29 and 30 years, for a maximum of 75%.



**APPENDIX A  
SUMMARY OF PLAN PROVISIONS  
(continued)**

**For police hired after January 1, 2010**, the following schedule applies:

<u>Years of Service</u>	<u>Minimum Age</u>	<u>Percentage of Average Final Monthly Compensation</u>
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	50	50%*
25 but less than 30	50	65%**
30 years	50	75%

\*50% at 20 years of service, plus 1.5% for each additional six months of service after 20 years and before 25 years. Early retirement reduction applies if less than 30 years of service.

\*\*65% at 25 years of service, plus 1% for each additional six months of service after 25 years and before 30 years. Early retirement reduction applies if less than 30 years of service.

**Cost of Living Adjustment (COLA):**

The monthly pension shall be increased by the lesser of 3% or \$50 (\$65 for Fire retirements after June 30, 2007). The increase will be made annually, beginning in the 13<sup>th</sup> month of retirement.

**Deferred Retirement Option Program (DROP):**

Police only: A DROP program was instituted with the last contract. After three years, this will be reviewed to determine if it is cost neutral before continuing it. Members may participate in the DROP for three to five years once they reach retirement eligibility with a minimum of 25 years of service (certain current members have a service threshold of 22.5 years). Members continue to make contributions to the system during the DROP period. During the DROP period, the member is credited with the benefits that would have been paid if the member had retired at the start of the DROP period, along with interest at the end of the year. At the end of the DROP period, the member ends employment, receives the DROP account balance, and begins to receive payments as though retirement had occurred at the beginning of the DROP period.



**APPENDIX A  
SUMMARY OF PLAN PROVISIONS  
(continued)**

**Disability Retirement**

**1. In Line of Duty**  
Section 22 - 78

A member shall become entitled to the following benefits while permanently disabled.

<u>Years of Service</u>	<u>Percentage of Average Final Monthly Compensation</u>
Less than 20	50%*
20 or more	Same as Service Retirement Pension, without any reduction for early commencement

\* 55% for Fire after June 30, 2007

**2. Not in Line of Duty**  
Section 22 - 79

A member shall become entitled to the following benefits while permanently disabled.

<u>Years of Service</u>	<u>Percentage of Average Final Monthly Compensation</u>
Up to 10 years	10%
10 but less than 15	20%
15 but less than 20	30%
20 or more	Greater of 45% or the Service Retirement Pension without any reduction for early commencement

Not payable while full salary continues

**Spouse's pension:**

**1. Death of Active member in Line of Duty:**

A monthly pension equal to 49% (52% Fire) of the member's average final monthly compensation is paid to the surviving spouse if death occurs while the active member has less than 25 years of service. A monthly pension equal to 69% (72% Fire) of the member's average final monthly compensation is paid to the surviving spouse if death occurs after the active member has 25 years or more of service.



## APPENDIX A

**SUMMARY OF PLAN PROVISIONS  
(continued)**

**2. Death of Active member Not in  
Line of Duty:**

The following monthly pension is paid to the surviving spouse.

<u>Years of Service at Death</u>	<u>Percentage of Average Final Monthly Compensation*</u>
0-3	0%
3-10	35.0%
11	36.4%
12	37.8%
13	39.2%
14	40.6%
15	42.0%
16	43.4%
17	44.8%
18	46.2%
19	47.6%
20-25	49.0%
25+	69%

\* add 3% to each number for Fire effective July 1, 2007

Benefit terminates upon remarriage of spouse.

**3. Death of Member Eligible for  
Retirement or Death or Retired  
Member:**

Section 22 - 82

75% (90% for Fire retirements after June 30, 2007) of the pension the member was receiving or was eligible to receive at the time of death. 50% of the pension the member was receiving for Police members hired after January 1, 2010. Upon spouse's remarriage, all benefits cease.

**Children's Pension**

Section 22 - 82

Upon the death of an active or retired member, the following benefit will be paid to the surviving children until age 18.

<u>Number of Dependent Children</u>	<u>Percentage of Average Final Monthly Compensation</u>
1	15%
2	30%
3	45%
4 or more	50%





## APPENDIX A

**SUMMARY OF PLAN PROVISIONS**  
(continued)

**Lump Sum Death Benefits**

- |  |  |
|--|--|
| <p>1. <b>Active Member without Eligible Dependents:</b><br/>Section 22 – 84(a)</p> | Accumulated member’s contributions, or \$500 if greater.   |
| <p>2. <b>Retired Member with Eligible Dependents:</b><br/>Section 22 – 84(b)</p>   | Accumulated member’s contributions, less previous pension payments made, or \$500 if greater.  |
| <p>3. <b>Active Member with Eligible Dependents:</b><br/>Section 22 – 84(c)</p>    | An amount payable immediately, equal to one year’s salary computed on the basis of the maximum monthly rate for patrolmen and firefighters, plus the decreased member’s accumulated contributions less pension payments to his dependents, payable to the dependent who last ceases to receive pension benefits. |
| <p>4. <b>Retired Member with Eligible Dependents:</b><br/>Section 22 – 84(c)</p>   | \$1,000 (\$5,000 Fire) payable immediately, plus the excess over \$1,000 (\$5,000 Fire) if any, of the deceased member’s accumulated contributions less pension payments to the member and his dependents, payable to the dependent who last ceases to receive pension benefits.                                 |

**Vesting:**

Section 22 - 86

Upon severance of employment by a member with less than 10 years of service and prior to obtaining eligibility under Section 22 – 75, a refund of such member’s accumulated contributions.

Section 22 - 86

Upon severance of employment by a member before age 45 with more than 10 years of service and prior to obtaining eligibility under Section 22 – 75, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, according to the table below, commencing at age 55. Such deferred pension shall be based on service credited to the date of severance.

<u>Years of Service</u>	<u>Minimum Age</u>	<u>Percentage of Average Final Monthly Compensation</u>
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	45	55%
25 or more	45	75%

For police, the schedules shown under service retirement apply as appropriate.



## APPENDIX B

### ACTUARIAL METHOD AND ASSUMPTIONS

#### Actuarial Method

Valuations of the plan use the “*entry age-normal*” cost method. Under this actuarial method, the value of future costs attributable to future employment of participants is determined. This is called present value of future normal costs. The following steps indicate how this is determined for benefits expected to be paid upon normal retirement.

1. The expected pension benefit at normal retirement is determined for each participant.
2. A normal cost, as a level percent of pay, is determined for each participant assuming that such level percent is paid from the employee’s entry age into employment to his normal retirement. This normal cost is determined so that its accumulated value at normal retirement is sufficient to provide the expected pension benefits.
3. The sum of the normal costs for all participants for one year determines the total normal cost of the plan for one year.
4. The value of future payments of normal cost in future years is determined for each participant based on his years of service to normal retirement age.
5. The sum of the value of future payments of normal cost for all participants determines the present value of future normal costs.

The value of future costs attributable to past employment of participants, which is called the actuarial liability, is equal to the present value of benefits less the present value of future normal costs. The unfunded actuarial liability is equal to the excess of the actuarial liability over assets. The unfunded actuarial liability is funded as a level percent of payroll over a 30 year closed period that began January 1, 2002.

As experience develops with the plan, actuarial gains and actuarial losses result. These actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. In each year, as they occur, actuarial gains and losses are recognized in the unfunded actuarial liability as of the valuation date.



**APPENDIX B**

**ACTUARIAL METHOD AND ASSUMPTIONS  
(continued)**

<b>Interest:</b>	8.00% per year, (net of investment expenses).
<b>Salary Increases:</b>	Merit increases based on service plus a general wage increase.
<b>Service Retirement Age:</b>	Graduated rates based on service.
<b>Mortality:</b>	
<b>Active Members</b>	RP-2000 Employee Table with generational improvements, set forward one year
<b>Service Pensioners and Beneficiaries</b>	RP-2000 Healthy Annuitant Table with generational improvements, set forward one year
<b>Disabled</b>	RP-2000 Disabled Retiree Mortality Table with generational improvements
<b>Disability:</b>	Graduated Rates by age. See table on next page
<b>Percent of Disabilities in Line of Duty:</b>	85%
<b>Medical Expenses for Disabilities in Line of Duty:</b>	5% load on liability for current and future disabled members.
<b>Percent Married at Death or Retirement:</b>	75%
<b>Turnover</b>	Graduated rates by age. See table on next page
<b>Assets:</b>	Actuarial value of assets equal to 1/3 of market value, plus 2.3 of expected value. Actuarial value of assets cannot exceed 120% of Market value of assets.
<b>Load on Active Member liability to reflect final wage adjustments</b>	10% for fire members, 0% for police members
<b>Increase in total annual payroll</b>	4.0%
<b>Assumed annual rate of inflation</b>	3.5%



**APPENDIX B**

**ACTUARIAL METHOD AND ASSUMPTIONS  
(continued)**

**SAMPLE RATES**

Age on 1/1/2010	Annual Rates			
	Mortality		Disability	Turnover
	Males	Females		
20	.03%	.02%	.26%	1.41%
30	.05	.03	.30	1.69
40	.10	.07	.52	.63
50	.19	.15	.95	.00
60	.46	.41	1.45	.00

Years of Service	Salary Progression			
	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.5%	0.5%	2.5%	6.5%
5	3.5%	0.5%	2.5	6.5
10	3.5%	0.5%	2.0	6.0
15	3.5%	0.5%	1.0	5.0
20	3.5%	0.5%	0.5	4.5
25	3.5%	0.5%	0.0	4.0
30	3.5%	0.5%	0.0	4.0

**Service Requirements**

Assumed retirement rates are based on the number of years of credited service as follows:

Years of Service	Distribution	Annual Rate
Less than 25	0.0%	0.0%
25	100.0	100.0

If a member was hired after age 37, then it is assumed that member would retire at the later of age 62 or 10 years of service.



### MEMBERSHIP DATA FOR VALUATION

The summary of employee characteristics presented below covers the employee group as of January 1, 2011. The schedules at the end of the report show the distribution of the various employee groups by present age along with other pertinent data.

**Total number of employees in valuation:\***

(a) Active employees	1,422
(b) Deferred vested employees	9
(c) Disabled employees	240
(d) Retired employees, spouses and children receiving benefits	<u>1,214</u>
(e) Total employees in valuation	2,885

**Average age of employees in valuation:**

(a) Active employees	
Attained	38.6
At Hire	28.5
(b) Deferred vested employees	47.1
(c) Disabled employees	65.9
(d) Retired employees	62.4
(e) Spouses and children receiving benefits	68.4

**Active employees eligible for vested benefits as of January 1, 2011:**

(a) Employees under age 45 with 10 or more years of service or under age 55 with less than 20 years of service – eligible for deferred vested benefits	588
(b) Employees age 55 and over with 10 or more years of service or age 45 with 20 or more years of service eligible for early or normal retirement benefits	126
(c) Employees eligible for refund of contributions only	<u>708</u>
(d) Total	1,422

\*DROP members included in retiree counts



## MEMBERSHIP DATA RECONCILIATION

January 1, 2010 to January 1, 2011

The number of members included in the valuation, as summarized in the table below, is in accordance with the data submitted by the City for eligible employees as of the valuation date.

	<u>Active Members</u>	<u>Deferred Vested</u>	<u>Disabled</u>	<u>Retirees</u>	<u>Beneficiaries</u>	<u>Total</u>
<b>Members as of 1/1/2010*</b>	1,431	7	248	916	267	2,869
New Members	48	0	0	0	0	48
Terminations						
Rehired	0	0	0	0	0	0
Refunded	(9)	(1)	0	0	0	(10)
Deferred Vested	(3)	3	0	0	0	0
Disabled	(2)	0	2	0	0	0
Data Corrections (and Benefits Expired)	0	0	0	3	(2)	1
Retirements	(42)	0		42	0	0
Deaths						
With Beneficiary	(1)	0	(8)	(13)	26	4
Without Beneficiary	0	0	(2)	(9)	(16)	(27)
<b>Total Members 1/1/2011</b>	1,422	9	240	939	275	2,885

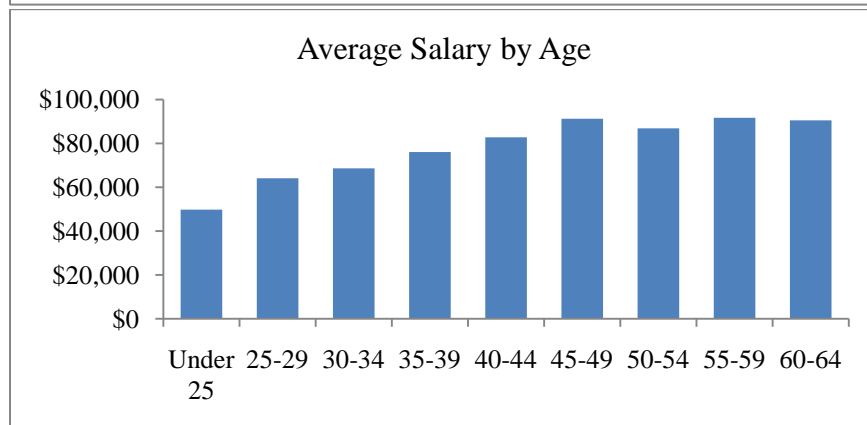
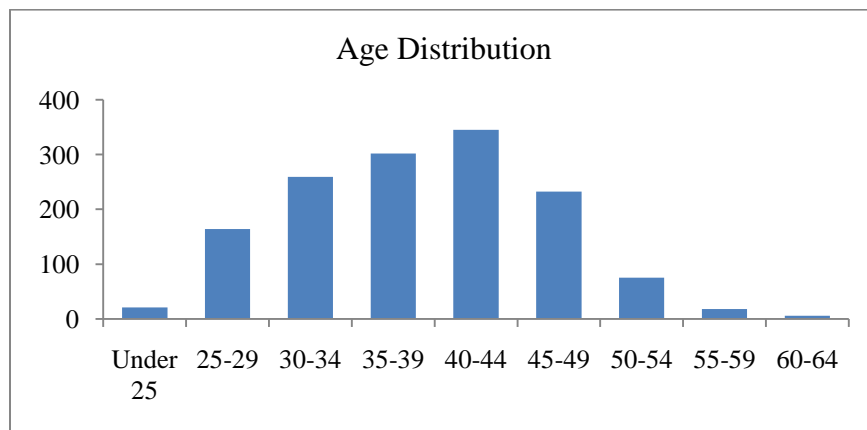
\*DROP members included in retiree counts



SCHEDULE I

ACTIVE EMPLOYEES AS OF JANUARY 1, 2011

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 25	19	2	21	927,997	79,170	1,007,167
25-29	147	17	164	8,770,024	1,025,996	9,796,019
30-34	226	33	259	14,674,977	2,162,636	16,837,613
35-39	262	40	302	18,946,795	2,961,004	21,907,799
40-44	299	46	345	23,215,074	3,850,959	27,066,033
45-49	202	30	232	17,459,591	2,561,068	20,020,659
50-54	67	8	75	5,586,228	689,042	6,275,270
55-59	18	0	18	1,619,074	0	1,619,074
60-64	4	2	6	333,885	162,090	495,975
Over 64	0	0	0	0	0	0
<b>Total</b>	<b>1,244</b>	<b>178</b>	<b>1,422</b>	<b>91,533,645</b>	<b>13,491,966</b>	<b>105,025,610</b>

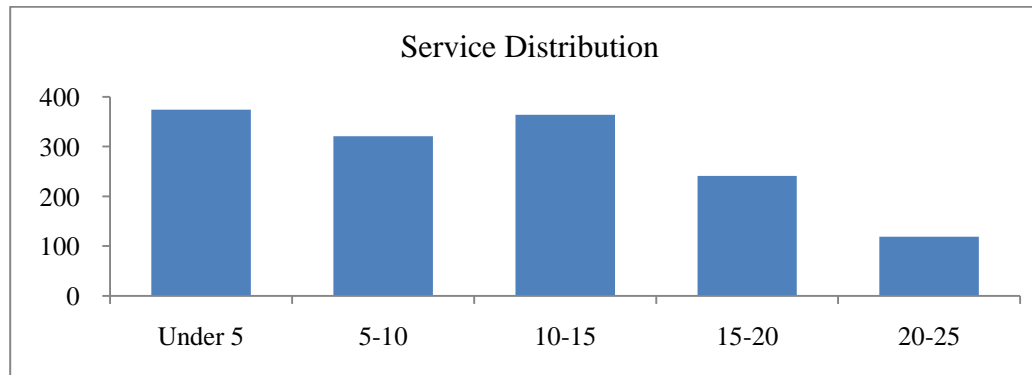




SCHEDULE I (continued)

ACTIVE EMPLOYEES AS OF JANUARY 1, 2011

Age	Service									Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	
Under 25	21	0	0	0	0	0	0	0	0	21
25-29	143	21	0	0	0	0	0	0	0	164
30-34	120	108	31	0	0	0	0	0	0	259
35-39	55	107	122	18	0	0	0	0	0	302
40-44	27	64	126	115	13	0	0	0	0	345
45-49	4	18	56	81	71	2	0	0	0	232
50-54	4	3	25	14	28	1	0	0	0	75
55-59	0	0	2	11	5	0	0	0	0	18
60-64	0	0	2	2	2	0	0	0	0	6
Over 64	0	0	0	0	0	0	0	0	0	0
Total	374	321	364	241	119	3	0	0	0	1,422

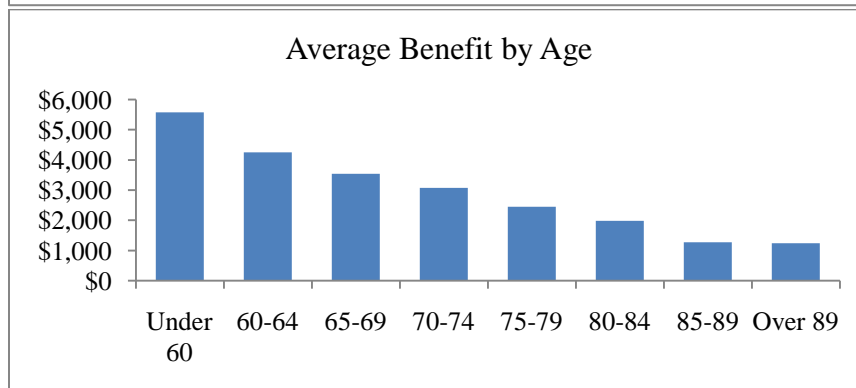
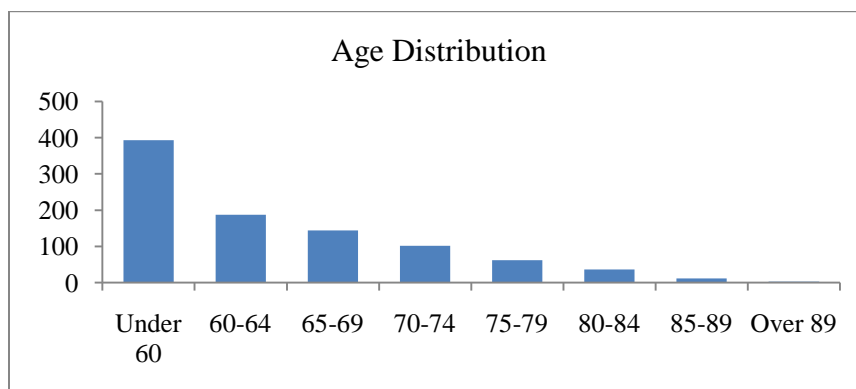






**SCHEDULE II  
RETIRED PARTICIPANTS AS OF JANUARY 1, 2011**

Age	Count of Retirees			Current Monthly Benefits		
	Males	Females	Total	Males	Females	Total
Under 60	356	37	393	1,931,140	182,456	2,113,596
60-64	184	3	187	762,115	9,469	771,583
65-69	142	2	144	487,530	8,156	495,686
70-74	100	2	102	297,689	6,986	304,675
75-79	61	1	62	143,794	3,005	146,798
80-84	36	0	36	68,480	0	68,480
85-89	12	0	12	14,309	0	14,309
Over 89	3	0	3	3,487	0	3,487
<b>Total</b>	<b>894</b>	<b>45</b>	<b>939</b>	<b>3,708,544</b>	<b>210,071</b>	<b>3,918,616</b>

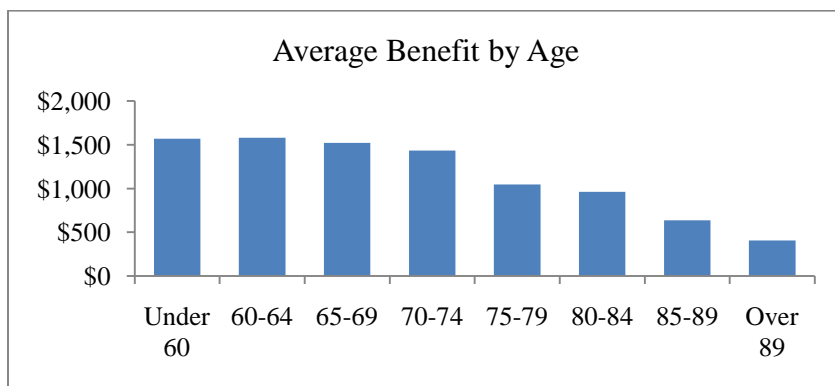
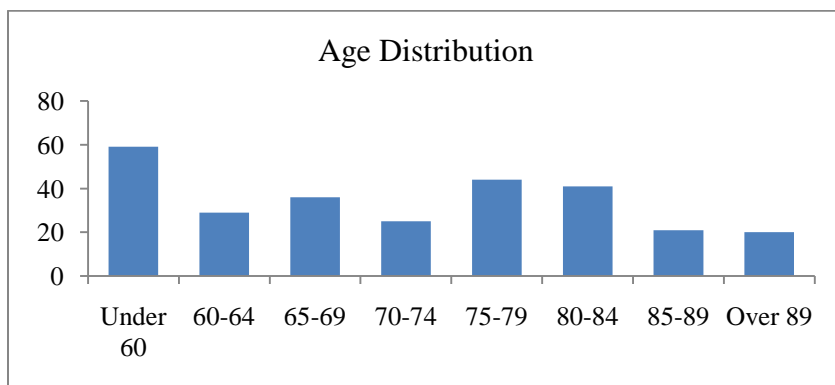




**SCHEDULE III**

**BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2011**

Age	Count of Beneficiaries			Current Monthly Benefits		
	Males	Females	Total	Males	Females	Total
Under 60	8	51	59	6,874	85,730	92,604
60-64	0	29	29	0	45,840	45,840
65-69	0	36	36	0	54,691	54,691
70-74	0	25	25	0	35,809	35,809
75-79	0	44	44	0	46,065	46,065
80-84	0	41	41	0	39,380	39,380
85-89	0	21	21	0	13,406	13,406
Over 89	0	20	20	0	8,132	8,132
<b>Total</b>	<b>8</b>	<b>267</b>	<b>275</b>	<b>6,874</b>	<b>329,052</b>	<b>335,926</b>





**SCHEDULE IV**

**DEFERRED VESTED FORMER EMPLOYEES AS OF JANUARY 1, 2011**

<u>Age</u>	<u>Count of Members</u>			<u>Expected Monthly Benefit</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	1	0	1	1,950	0	1,950
35-39	0	0	0	0	0	0
40-44	1	0	1	5,685	0	5,685
45-49	5	0	5	12,783	0	12,783
50-54	0	1	1	0	843	843
55-59	1	0	1	1,080	0	1,080
Over 59	0	0	0	0	0	0
Total	8	1	9	21,498	843	22,342



SCHEDULE V

DISABLED EMPLOYEES AS OF JANUARY 1, 2011

<u>Age</u>	<u>Count of Members</u>			<u>Current Monthly Benefits</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 30	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	3	4	2,734	7,866	10,600
40-44	5	2	7	13,659	5,052	18,711
45-49	12	3	15	37,704	6,634	44,338
50-54	10	6	16	24,507	15,993	40,500
55-59	10	2	12	35,531	2,848	38,380
60-64	42	0	42	125,872	0	125,872
65-69	55	0	55	135,946	0	135,946
70-74	36	0	36	85,422	0	85,422
75-79	23	0	23	44,320	0	44,320
80-84	24	0	24	32,288	0	32,288
85-89	5	0	5	4,379	0	4,379
Over 89	1	0	1	873	0	873
Total	224	16	240	543,236	38,393	581,629