# Cavanaugh Macdonald 

CONSULTING, LLC

The experience and dedication you deserve

# The City of Omaha Employees' Retirement System 

Actuarial Valuation as of<br>January 1, 2012



# Cavanaugh Macdonald <br> C O N SULTIN G, LLC <br> The experience and dedication you deserve 

September 11, 2012
Board of Trustees
City of Omaha Employees' Retirement System
1819 Farnam Street
Omaha, NE 68183

## RE: January 1, 2012 Actuarial Valuation

Members of the Board:
In accordance with your request, we have completed an Actuarial Valuation of the City of Omaha Employees' Retirement System as of January 1, 2012 for the plan year ending December 31, 2012. The major findings of the valuation are contained in this report. The plan provisions and assumptions are the same as the prior valuation.

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 calculations 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 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. Actuarial computations presented in this report under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements for the City. 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.

## Board of Trustees

September 11, 2012
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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,


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


Brent A. Banister, PhD, FSA, EA, FCA, MAAA Chief Pension Actuary
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This report presents the results of the January 1, 2012 actuarial valuation of the City of Omaha Employees' 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 rate, based on the City's funding policy;
- to measure and disclose various asset and liability measures;
- to monitor any deviation between actual System 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 plan provisions and actuarial assumptions reflected in this report are unchanged from last year's report.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2012. The valuation results reflect net unfavorable experience for the past plan year as demonstrated by an unfunded actuarial liability that was greater than was expected based on the actuarial assumptions used in the January 1, 2011 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in a loss of $\$ 7.1$ million, while favorable experience on liabilities resulted in a gain of $\$ 0.9$ million. The net experience was an actuarial loss of $\$ 6.2$ million.

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the actuarial contribution rate are based on the actuarial (smoothed) value of assets - not the pure market value. The investment return on the market value of assets during 2011 was about $-0.8 \%$, less than the assumed rate of $8.0 \%$. Coupled with the deferred investment loss remaining in the January 1, 2011 valuation, the rate of return on the actuarial value of assets was about $5 \%$ for 2011. As of January 1, 2012, the actuarial value of assets exceeds the market value by $\$ 21.3$ million or $9.9 \%$ of the market value, so a deferred investment loss still exists. Actual market returns over the next few years will determine when the $\$ 21.3$ million of deferred investment loss is recognized. For example, an estimated return of $19 \%$ on the market value of assets in 2012 would be necessary to attain a return of $8.0 \%$ on the actuarial value of assets.

The change in the assets, liabilities, and contributions of the System over the last year are discussed in more detail in the following pages.

## ASSETS

As of January 1, 2012, the System had total funds of $\$ 215.4$ million, when measured on a market value basis. This was a decrease of $\$ 16.9$ million from the prior year, and represents an approximately $-0.8 \%$ rate of return.

The market value of assets is not used directly in the actuarial calculation of the System's funded status and the actuarial contribution rate. 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

## ExECUTIVE SUMMARY

assumed rate of $8.0 \%$ ) plus $25 \%$ 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, 2012. The rate of return on the actuarial value of assets was about $5 \%$. The portion of the deferred and current year's investment experience recognized in the calculation of the January 1, 2012 actuarial value of assets resulted in an actuarial loss of $\$ 7.1$ million.

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

|  | Market Value (\$M) |  | Actuarial Value (\$M) |  |
| :--- | :--- | ---: | :--- | ---: |
| Net Assets, January 1, 2011 | $\$$ | 232.3 | $\$$ | 240.3 |
| City and Member Contributions | + | 12.2 | + | 12.2 |
| Benefit Payments and Refunds | - | 27.3 | - | 27.3 |
| Investment Gain/(Loss) | + | $(1.8)$ | + | 11.5 |
| Net Assets, January 1, 2012 |  | 215.4 | 236.7 |  |
| Estimated Rate of Return | $(0.8 \%)$ | $5.0 \%$ |  |  |

The total investment loss that is not recognized as of January 1, 2012 is $\$ 21.3$ million, up from $\$ 7.9$ million in last year's valuation. These unrecognized losses will be reflected 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 $8.0 \%$ per year (net of investment expenses) on a market value basis will result in actuarial losses on the actuarial value of assets in the next few years. This will translate to an increase in both the unfunded actuarial liability and the actuarial contribution rate.

The unrecognized investment losses represent about $9.9 \%$ of the market value of assets (up from $3.4 \%$ in the 2011 valuation). Unless offset by future investment gains or other favorable experience, the recognition of the $\$ 21.3$ million loss is expected to increase the future unfunded actuarial liability and the actuarial contribution rate. If the deferred losses were recognized immediately in the actuarial value assets, the unfunded actuarial liability would increase by $\$ 21$ million to $\$ 205$ million, the funded percentage would decrease from $56 \%$ to $51 \%$ and the actuarial contribution rate would increase from $34.998 \%$ to $37.461 \%$.

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

|  | 2012 | 2011 | 2010 | 2009 | 2008 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Market Value of Assets | $\$ 215$ | $\$ 232$ | $\$ 213$ | $\$ 204$ | $\$ 294$ |
| Actuarial Value of Assets | $\$ 237$ | $\$ 240$ | $\$ 240$ | $\$ 245$ | $\$ 283$ |
| Actuarial Value/Market Value | $110 \%$ | $103 \%$ | $113 \%$ | $120 \%$ | $96 \%$ |

## Market and Actuarial Values (\$millions)



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 the 2008 plan year resulted in the actuarial value of assets being above the market value for the last four years.

## LIAbILITIES

The first step in determining the actuarial contribution rate 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 System members, assuming that all actuarial assumptions are realized. Thus, the PVFB reflects service and salary increases that are expected to occur in the future before the 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 prior service periods). As of January 1, 2012, the actuarial liability for the System was $\$ 420,810,359$.

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

## ExECUTIVE SUMMARY

|  | As of January 1 |  |
| :--- | :---: | :---: |
|  | $\mathbf{2 0 1 2}$ |  |
| $\mathbf{N}$ | $\mathbf{2 0 1 1}$ |  |
| Actuarial Liability (AL) | $\$ 420,810,359$ |  |
| Assets at Actuarial Value | $\$ 236,741,347$ |  |
| Unfunded Actuarial Liability (AVA) | $\$ 184,069,012$ |  |
| Funded Ratio (Actuarial Value) | $56 \%$ |  |
|  | $\$ 240,291,310$ |  |
| Assets at Market Value | $\$ 215,434,784$ |  |
| Unfunded Actuarial Liability (MVA) | $\$ 205,375,575$ |  |
| Funded Ratio (Market Value) | $51 \%$ |  |

## Experience For the 2011 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 or methods, and actual contributions made will impact the amount of the unfunded actuarial liability.

The calculation of the unfunded actuarial liability for the System as of January 1, 2012 is shown below:

| Actuarial Liability | $\$ 420,810,359$ |
| :--- | :--- |
| Actuarial Value of Assets | $\$ 236,741,347$ |
| Unfunded Actuarial Liability | $\$ 184,069,012$ |

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 System experience, in total, was unfavorable (an unfunded actuarial liability greater than expected). There was an actuarial loss of around $\$ 7.1$ million on the actuarial value of assets and an actuarial gain of about $\$ 0.9$ million on liabilities.

The change in the unfunded actuarial liability between January 1, 2011 and 2012 is shown below (in millions):

| Unfunded Actuarial Liability, January 1, 2011 | 169 |
| :--- | ---: |
| - $\quad$ Expected change in UAL | 1 |
| - $\quad$ Contribution shorffall in 2011 | 8 |
| - Investment experience | 7 |
| - $\quad$ Demographic experience | $(1)$ |
| - Other experience | 0 |
| - $\quad$ Changes in plan provisions | 0 |
| - $\quad$ Change in actuarial assumptions / methods | 0 |
| Unfunded Actuarial Liability, January 1, 2012 | 184 |

Due to the use of an asset smoothing method, there are deferred investment losses which have not been fully recognized. There was an actuarial loss on investment experience due to a combination of these deferred losses and a return on the market value of assets of around $-1 \%$, which was below the $8 \%$ assumption. This investment experience on the actuarial value of assets increased the unfunded actuarial liability by $\$ 7$ million. It was partially offset by favorable demographic experience of $\$ 1$ million which was primarily due to lower salary increases than expected.

## Contribution Levels

The actuarial contribution rate of 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 $13.716 \%$ of pay, or about $\$ 8$ million this year.

When offset by the expected employee contributions, the employer portion of the normal cost is $3.341 \%$ of pay, or about $\$ 1.9$ million. The normal cost rate represents the long-term cost of the benefit structure of the System.

The Plan's total actuarially determined contribution rate (payable as a $\%$ of member payroll) increased by $1.09 \%$ of pay, to $35.00 \%$ on January 1, 2012, from $33.91 \%$ on January 1, 2011. The primary components of this change are as follows:

|  | Rate |  |
| :--- | ---: | :--- |
| Total Actuarial Contribution Rate, January 1, 2011 | 33.913 | $\%$ |
| - Actuarial (Gain) / Loss - Investment Experience | 0.821 |  |
| - Actuarial (Gain) / Loss - Other Experience | $(0.529)$ | 0.000 |
| - Assumption Changes | 0.907 |  |
| - Contributions Less Than Actuarial Rate | $(0.114)$ |  |
| - Change in Normal Cost Rate | 34.998 | $\%$ |
| Total Actuarial Contribution Rate, January 1, 2012 |  |  |

As the result of experience during 2011, the System has an unfunded actuarial liability of $\$ 184$ million (actuarial liability is greater than actuarial assets). The unfunded actuarial liability is being funded over a closed 30 -year period beginning January 1, 2002 of which twenty years remain as of the valuation data. The resulting payment is $21.282 \%$ of pay. As a result, the total contribution rate for 2012 is $34.998 \%$ of pay $(13.716 \%+21.282 \%)$. The City's required contribution rate in the city ordinance for 2012 is $11.775 \%$ and the employees contribute $10.075 \%$, for a total of $21.850 \%$. The difference between the actuarial contribution rate and the actual contribution rates in the city ordinance creates a contribution shortfall for 2012 of $13.148 \%$ of pay or approximately $\$ 8.1$ million.

## ExECUTIVE Summary

## Comments

After strong investment returns in 2009 and 2010, the return on the market value of assets in 2011 was about $-1 \%$, reversing much of the gains from the last two years. The funded ratio of the system, on a market value basis, is $51 \%$ in the January 1, 2012 actuarial valuation, close to the funded ratio of $52 \%$ in the January 1, 2009 valuation, just after the market downturn of 2008. The System faces a significant funding challenge in the future given the current funded status and the contribution shortfall between the actuarial contribution rate and the scheduled member and employer contribution rates currently in place. Based on estimation techniques, the System's assets are projected to be exhausted in about 20 years even if all actuarial assumptions are met. This is a very serious situation and action should be taken as soon as possible to address it.

The actual contributions to the System for 2011 of $20.350 \%$ of pay were significantly below the actuarial contribution rate of $33.913 \%$. This shortfall in the contribution rate of $13.56 \%$ of pay, or about $\$ 8$ million, resulted in an increase in the unfunded actuarial liability. The actuarial contribution rate in the 2012 valuation is $34.998 \%$ compared to the total contribution rate for 2012 in the City ordinance of $21.850 \%$, which results in a shortfall of $13.148 \%$ of pay or $\$ 8$ million. A fundamental principle of sound funding for any defined benefit plan is to consistently pay the actuarial contribution rate. Contributions to the City of Omaha Employees' Retirement System have been less than the full actuarial contribution rate for the last ten years. This, in conjunction with investment experience in the last decade that was lower than the $8 \%$ assumed rate of return, has resulted in a sharp decline in the System's funded status.

Given the current scheduled contribution rates, the contribution shortfall is expected to increase and the funded status to decline and assets be exhausted in about 20 years even if all actuarial assumptions are met. Action is necessary soon in order to strengthen the System's funding over the long term. Benefits are paid out of the System from two sources: (1) contributions and (2) investment earnings. In order to improve the System's long term funding, contributions and/or investment earnings must increase, benefit payments must decrease, or both must occur. Increasing contributions or reducing benefits in future years typically takes many years before an improvement in the funded ratio can be observed, particularly if the benefit changes only apply to new hires. The other component of the long term funding equation is investment return. If actual returns exceed the $8 \%$ assumption in future years, it will improve the System's funding. In fact, investment returns have the greatest potential to impact the funded ratio in the short term - both positively and negatively. However, it seems unlikely that the rate of return will substantially exceed the $8 \%$ assumption in the future, so this option alone does not appear to be a viable solution to the System's long term funding issue. Therefore, it is likely that contributions will need to increase and/or benefits will need to be reduced in order to address concerns about the System's long term funding. It is likely to take many years before a dramatic improvement in the funded ratio occurs due to contribution increases or changes that only impact new hires. The longer action to address the funding shortfall is delayed, the more dramatic the changes will have to be, whether such changes are benefit changes or contribution increases.

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. The System currently has a deferred loss of just over $\$ 21$ million. It is valuable to compare the key valuation results from the 2012 valuation using both the actuarial and market value of assets (see following table).
\$ Millions

|  | Using Actuarial <br> Value of Assets | Using Market |
| :--- | :---: | :---: |
| Actuarial Liability | $\$ 420.8$ | Value of Assets |
| Asset Value | 236.7 | $\$ 420.8$ |
| Unfunded Actuarial Liability | $\$ 184.1$ | 215.4 |
| Funded Ratio | $56.3 \%$ | $\$ 205.4$ |
| Normal Cost Rate | $13.716 \%$ | $51.2 \%$ |
| UAL Contribution Rate | $\underline{21.282 \%}$ |  |
| Actuarial Contribution Rate | $34.998 \%$ | $13.716 \%$ |

THE CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM

## PRINCIPAL VALUATION RESULTS

|  | January 1, 2012 | January 1, 2011 | \% Chg |
| :---: | :---: | :---: | :---: |
| MEMBERSHIP |  |  |  |
| 1. Active Membership |  |  |  |
| - Number of Members | 1,156 | 1,130 | 2.3 |
| - Projected Payroll for Upcoming Fiscal Year | \$62,825,685 | \$59,235,591 | 6.1 |
| - Average Projected Payroll | \$54,347 | \$52,421 | 3.7 |
| - Average Attained Age | 47.3 | 47.4 | (0.3) |
| - Average Entry Age | 36.8 | 36.9 | (0.4) |
| 2. Inactive Membership |  |  |  |
| - Number of Retirees / Beneficiaries | 1,187 | 1,161 | 2.2 |
| - Number of Disabilities | 121 | 120 | 0.8 |
| - Number of Deferred Vesteds | 77 | 82 | (6.1) |
| - Average Annual Benefit | \$21,272 | \$21,110 | 0.8 |
| ASSETS AND LIABILITIES |  |  |  |
| 1. $\begin{aligned} & \text { Net Assets } \\ & \text { - Market Value } \\ & \\ & \text { - Actuarial Value }\end{aligned}$ |  |  |  |
|  | \$215,434,784 | \$232,346,583 | (7.3) |
|  | \$236,741,347 | \$240,291,310 | (1.5) |
| 2. Projected Liabilities |  |  |  |
| - Retired Members and Beneficiaries | \$249,933,357 | \$244,707,123 | 2.1 |
| - Disabled Members | \$23,253,768 | \$23,276,585 | (0.1) |
| - Other Inactive Members | \$5,959,876 | \$6,283,434 | (5.1) |
| - Active Members | \$197,407,289 | \$187,562,174 | 5.2 |
| - Total Liability | \$476,554,290 | \$461,829,316 | 3.2 |
| 3. Actuarial Liability | \$420,810,359 | \$409,442,601 | 2.8 |
| 4. Unfunded Actuarial Liability | \$184,069,012 | \$169,151,291 | 8.8 |
| 5. Funded Ratios |  |  |  |
| Actuarial Value Assets / Actuarial Liability | 56.26\% | 58.69\% | (4.1) |
| Market Value Assets / Actuarial Liability | 51.20\% | 56.75\% | (9.8) |
| CONTRIBUTIONS |  |  |  |
| 1. Normal Cost Rate | 13.716\% | 13.830\% | (0.8) |
| 2. UAL Contribution Rate | 21.282\% | 20.083\% | 6.0 |
| 3. Total Actuarial Contribution Rate (1) + (2) | 34.998\% | 33.913\% | 3.2 |
| 4. Less Employee Contribution Rate | (10.075\%) | (9.325\%) | 8.0 |
| 5. Less City Contribution Rate Per Ordinance | (11.775\%) | (11.025\%) | 6.8 |
| 6. Contribution Shortfall (3) - (4) - (5) | 13.148\% | 13.563\% | (3.1) |

## EXHIBIT 1

## SUMMARY OF FUND ACTIVITY

## (Market Value Basis)

For Year Ended December 31, 2011

Assets at January 1, 2011

## Receipts:

City Contributions
Employee Contributions
Investment Earnings
Total Receipts
Disbursements:
Benefit Payments
Refund of Contributions
Investment Fees
Total Disbursements
Assets as of December 31, 2011
Estimated Annual Return
\$ 232,346,583

6,618,110
5,628,888
$(384,226)$
11,862,773

26,938,534
387,969
1,448,069
28,774,572
\$ 215,434,784

- Gross
- Net of Expenses
(0.2\%)
(0.8\%)


## 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 $+25 \%$ 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 $25 \%$ 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, 2011
2. Actual Receipts / Disbursements
a. Total Contributions
b. Benefit Payments
c. Net Change
3. Expected Actuarial Value of Assets as of January 1, 2012
$\{(1) * 1.08\}+\left\{(2 c) * 1.08^{1 / 2}\right\}$
4. Market Value of Assets as of January 1, 2012
5. Excess of Market Value over Expected Actuarial
(28,408,750)
Value as of January 1, 2012
6. Preliminary Actuarial Value of Assets as of January 1, 2012

236,741,347
[ (3) $+25 \%$ of (5)]
7. Actuarial Value of Assets after $20 \%$ Corridor Applied
a. $80 \%$ of (4)

172,347,827
b. $120 \%$ of (4) 258,521,741
8. Final Actuarial Value of Assets as of as of January 1, 2012
(6) but not < (7a) nor > (7b)
\$
236,741,347
9. Rate of Return on Actuarial Value of Assets

## EXHIBIT 2 (continued)

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

| Date | Market Value <br> of Assets (MVA) | Actuarial Value <br> of Assets (AVA) | AVA / MVA |
| :---: | :---: | :---: | :---: |
| $1 / 1 / 2008$ | $294,658,022$ | $283,243,750$ | $96.13 \%$ |
| $1 / 1 / 2009$ | $204,452,506$ | $245,343,007$ | $120.00 \%$ |
| $1 / 1 / 2010$ | $213,219,632$ | $240,109,413$ | $112.61 \%$ |
| $1 / 1 / 2011$ | $232,346,583$ | $240,291,310$ | $103.42 \%$ |
| $1 / 1 / 2012$ | $215,434,784$ | $236,741,347$ | $109.89 \%$ |



## EXHIBIT 3

## ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the System in balance sheet form as of January 1, 2012 is as follows:


## EXHIBIT 4

## UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2012

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.

1. Present Value of Future Benefits
2. Present Value of Future Normal Costs
3. Actuarial Liability
(1) $-(2)$
4. Actuarial Value of Assets
5. Unfunded Actuarial Liability
(3) - (4)
6. Funded Ratio
(4) /(3)
\$ 476,554,290

55,743,931

420,810,359
236,741,347
\$ 184,069,012
56.26\%

## EXHIBIT 5

## CALCULATION OF ACTUARIAL GAIN/(LOSS) <br> For Plan Year Ending December 31, 2011

## Liabilities

1. Actuarial liability as of January 1, 2011 \$ 409,442,601
2. Normal cost as of January 1, 2011 (mid-year)

7,605,157
3. Interest at $8.00 \%$ on (1) and (2) to December 31, 2011

33,053,762
4. Benefit payments during 2011

27,326,503
5. Interest on benefit payments

1,072,032
6. Expected actuarial liability as of December 31, 2011

421,702,985

$$
(1)+(2)+(3)-(4)-(5)
$$

7. Actuarial liability as of December 31, 2011

420,810,359

## Assets

8. Actuarial value of assets as of January 1, $2011 \quad$ 240,291,310
9. Contributions during 2011

12,246,998
10. Benefit payments during 2011

27,326,503
11. Interest on items (8), (9) and (10)

18,631,729
12. Expected actuarial value of assets as of December 31, 2011 243,843,534
$(8)+(9)-(10)+(11)$
13. Actual actuarial value of assets as of December 31, 2011

236,741,347

## Gain / (Loss)

14. Expected unfunded actuarial liability / (surplus)
(6) - (12)

177,859,451
15. Actual unfunded actuarial liability / (surplus)

$$
\text { (7) }-(13)
$$

184,069,012
16. Actuarial Gain / (Loss)

$$
(15)-(14)
$$

17. Actuarial Gain / (Loss) on Actuarial Assets

$$
(12)-(13)
$$

18. Actuarial Gain / (Loss) on Actuarial Liability
(7) - (6)

## EXHIBIT 6

## DEVELOPMENT OF 2012 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
(b) Expected Payroll in 2012 for Current Actives
(c) Normal Cost Rate
(a) / (b)
2. Unfunded Actuarial Liability at Valuation Date
3. Amortization Factor

Level Percent of Payroll over 20 Years*
4. Unfunded Actuarial Liability Payment
$[(2) /(3)] \times 1.08^{1 / 2}$
\$
13,370,387
5. Total Projected Payroll for the Year
6. Unfunded Actuarial Liability Payment as Percent of Pay (4) / (5)
\$ 7,999,363
\$ 58,322,920
13.716\%
\$
184,069,012
14.307

Total Contribution Rate
(1c) + (6)
34.998\%
8. Employee Contribution Rate 10.075\%
9. City Ordinance Contribution Rate $11.775 \%$
10. Contribution Shortfall
(7) $-(8)-(9)$

$$
13.148 \%
$$

## 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 contributions 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 system assets, mortality rates among active and retired members, withdrawal and retirement rates among active members, and rates at which salaries increase.

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 (called an 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 $\$ 893,000$ during the plan year ended December 31, 2011, which was offset by an actuarial loss on assets of $\$ 7,102,000$. The net actuarial loss was $\$ 6,209,000$. The major components of this net actuarial experience loss are shown below:

| Liability Sources |  | Gain/(Loss) |
| :--- | ---: | ---: |
| Salary Increases | $\$$ | $2,682,000$ |
| Mortality |  | 173,000 |
| Terminations |  | $(1,006,000)$ |
| Retirements |  | 313,000 |
| Disability |  | $(1,145,000)$ |
| New Entrants/Rehires |  | $470,000)$ |
| Miscellaneous | 893,000 |  |
| Total Liability Gain/(Loss) | $\$$ | 8 |
| Asset Gain/(Loss) | $\$$ | $(7,102,000)$ |
|  |  |  |
| Net Actuarial Gain/(Loss) | $\$$ | $(6,209,000)$ |

## 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 contributions (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 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, 2005 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.

In July 2012, GASB issued new statements that will significantly change the accounting for pension benefits provided by governmental employers. The new statements, Numbers 67 and 68, will not be effective for the City of Omaha until fiscal years beginning in 2014 and 2015 respectively. They had no impact on the accounting information provided in this report, but are mentioned here because of their significance and applicability in future years.

## EXHIBIT 8

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

In accordance with Statement No. 25 of the Governmental Accounting Standards Board
\(\left.$$
\begin{array}{cccc} & \text { Annual } & \begin{array}{c}\text { Total } \\
\text { Fiscal } \\
\text { Required }\end{array} & \begin{array}{c}\text { Employer } \\
\text { Contribution* }\end{array}\end{array}
$$ \begin{array}{c}Percentage <br>
of ARC <br>

Contributed*\end{array}\right]\)| Ending | $(\mathrm{a})$ | $(\mathrm{b})$ |
| :---: | :---: | :---: |

*Information prior to 2011 was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting.

Notes to the Required Schedules:

1. The traditional Entry Age Normal cost method is used.
2. 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 $25 \%$ of the difference between market and expected values. A corridor of $80 \%$ to $120 \%$ of market value is also applied.
3. Economic assumptions are as follows: Investment return rate: $8.00 \%$

Salary increase rates: from $10 \%$ at 1 year of service to $4 \%$ at 20 years of service
Inflation rate: 3.5\%
Payroll growth: $4.00 \%$
Post-retirement benefit increases: Applicable after 5 years equal to the lesser of $3 \%$ or $\$ 50$ per month for members (and their beneficiaries) who retired on or before January 28, 1998.
4. The amortization method is a closed 30 year period, level percentage of payroll (the unfunded actuarial liability is amortized over 21 years as of January 1, 2011).

## EXHIBIT 9

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

## Fiscal Year End:

Assumptions and Methods
Interest Rate
Payroll Growth
Amortization Period (years)
Cost Method
Annual Pension Cost
Annual Required Contribution
(ARC)

Interest on NPO
Adjustment to ARC
Annual Pension Cost

## Contribution for the Year

Net Pension Obligation (NPO)
NPO at beginning of year
Annual Pension Cost for Year
Contributions for year
NPO at end of year

| $\mathbf{1 2 / 3 1 / 2 0 0 5}$ | $\mathbf{1 2 / 3 1 / 2 0 0 6}$ | $\mathbf{1 2 / 3 1 / 2 0 0 7}$ | $\mathbf{1 2 / 3 1 / 2 0 0 8}$ | $\mathbf{1 2 / 3 1 / 2 0 0 9}$ | $\mathbf{1 2 / 3 1 / 2 0 1 0}$ | $\mathbf{1 2 / 3 1 / 2 0 1 1}$ | $\mathbf{1 2 / 3 1 / 2 0 1 2}$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  |  |  |  |
| $7.50 \%$ | $7.50 \%$ | $8.00 \%$ | $8.00 \%$ | $8.00 \%$ | $8.00 \%$ | $8.00 \%$ | $8.00 \%$ |
| $4.00 \%$ | $4.00 \%$ | $4.00 \%$ | $4.00 \%$ | $4.00 \%$ | $4.00 \%$ | $4.00 \%$ | $4.00 \%$ |
| 30 | 30 | 30 | 30 | 30 | 30 | 21 | 20 |
| EA Normal | EA Normal | EA Normal | EA Normal | EA Normal | EA Normal | EA Normal | EA Normal |


| $\$ 6,877,913$ | $\$ 6,213,801$ | $\$ 8,883,617$ | $\$ 9,212,669$ | $\$ 12,893,331$ | $\$ 14,149,386$ | $\$ 14,564,847$ | $\$ 15,658,045$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 433,383 | 607,521 | 807,256 | $1,112,817$ | $1,410,080$ | $2,004,239$ | $2,661,089$ | $3,322,571$ |
| $(489,268)$ | $(685,860)$ | $(896,331)$ | $(1,235,608)$ | $(1,565,673)$ | $(2,225,393)$ | $(2,339,292)$ | $(3,016,753)$ |
| $\$ 6,822,028$ | $\$ 6,135,462$ | $\$ 8,794,542$ | $\$ 9,089,878$ | $\$ 12,737,738$ | $\$ 13,928,232$ | $\$ 14,886,644$ | $\$ 15,963,863$ |
| $\$ 4,500,192$ | $\$ 4,145,033$ | $\$ 4,975,039$ | $\$ 5,374,082$ | $\$ 5,310,754$ | $\$ 5,717,610$ | $\$ 6,618,110$ | TBD |
|  |  |  |  |  |  |  |  |
| $\$ 5,778,439$ | $\$ 8,100,275$ | $\$ 10,090,704$ | $\$ 13,910,207$ | $\$ 17,626,003$ | $\$ 25,052,987$ | $\$ 33,263,609$ | $\$ 41,532,142$ |
| $6,822,028$ | $6,135,462$ | $8,794,542$ | $9,089,878$ | $12,737,738$ | $13,928,232$ | $14,886,644$ | $15,963,863$ |
| $(4,500,192)$ | $(4,145,033)$ | $(4,975,039)$ | $(5,374,082)$ | $(5,310,754)$ | $(5,717,610)$ | $(6,618,110)$ | TBD |
| $\$ 8,100,275$ | $\$ 10,090,704$ | $\$ 13,910,207$ | $\$ 17,626,003$ | $\$ 25,052,987$ | $\$ 33,263,609$ | $\$ 41,532,142$ | 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 <br> Valuation <br> Date ${ }^{1}$ | Market Value of Assets ${ }^{2}$ <br> (a) | Actuarial Liability (AAL) <br> (b) | Unfunded AAL <br> (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (P/R) (c) | UAAL as a <br> Percentage of Covered P/R $[(b-a) / c]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12/31/2006 | \$292,000,000 | \$361,700,000 | \$ 69,700,000 | 80.7\% | \$48,200,000 | 144.6\% |
| 12/31/2007 | 294,700,000 | 369,000,000 | 74,300,000 | 79.9\% | 54,000,000 | 137.6\% |
| 12/31/2008 | 204,500,000 | 387,700,000 | 183,200,000 | 52.7\% | 56,400,000 | 324.8\% |
| 12/31/2009 | 213,200,000 | 402,800,000 | 189,600,000 | 52.9\% | 55,700,000 | 340.4\% |
| 12/31/2010 | 232,400,000 | 414,500,000 | 182,100,000 | 56.1\% | 56,700,000 | 321.2\% |
| 1/1/2011 | 240,291,310 | 409,442,601 | 169,151,291 | 58.7\% | 59,235,591 | 285.6\% |
| 1/1/2012 | 236,741,347 | 420,810,359 | 184,069,012 | 56.3\% | 62,825,685 | 293.0\% |

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.
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.

## EXHIBIT 11

## THREE-YEAR TREND INFORMATION*

| Fiscal Year <br> Ending | Annual Pension <br> Cost (APC) | Percentage of <br> APC Contributed | Net Pension <br> Obligation |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| $12 / 31 / 2009$ | $\$ 12,737,738$ | $42 \%$ | $\$ 25,052,987$ |
| $12 / 31 / 2010$ | $13,928,232$ | $41 \%$ | $33,263,609$ |
| $12 / 31 / 2011$ | $14,886,644$ | $44 \%$ | $41,532,142$ |

*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.

## Appendices

## APPENDIX A

## SUMMARY OF PLAN PROVISIONS

Effective Date:
Section 22-21

Active Member:
Section 22 - 24 and 25

Average Final Monthly Compensation:
Section 22-23

Member Contributions:
Section 22 -26(a)

City of Omaha Contributions:
Section 22 -26(e)

Service Credits
Section 22 - 28 and 29

January 1, 1949

All City employees except: policemen, firemen, persons paid on a contractual or fee basis, seasonal, temporary and parttime employees, and elected officials who do not make written application.

The member's highest consecutive 26 pay periods of compensation during the final 130 pay periods of service as a member divided by 12 .

Each member will contribute a percentage of total compensation as shown in the following table. Interest is currently credited at $3.0 \%$ on member contributions.

| Year | Percent Contributed |
| :---: | :---: |
| 2010 | $8.575 \%$ |
| 2011 | $9.325 \%$ |
| 2012 | $10.075 \%$ |

The City will contribute a percentage of each member's total compensation as shown in the following table.

| Year | Percent Contributed |
| :---: | :---: |
| 2010 | $10.275 \%$ |
| 2011 | $11.025 \%$ |
| 2012 | $11.775 \%$ |

The member shall receive membership service credit for each full pay period of employment. Intervening periods of military service in time of emergency shall be counted, provided the member is honorably discharged and returns to work within 90 days after such discharge.

Membership credits shall be earned by those receiving a disability pension. However, the total credited service will not exceed 30, unless more than 30 years were earned as an active member.

## APPENDIX A

## SUMMARY OF PLAN PROVISIONS (continued)

Service Retirement Eligibility:
Section 22-30

Service Retirement Pension:
Section 22-32
Disability Benefits:
Section 22-35

Spouse's Pension:

1. Death of Active Member

Section 22-36
2. Death of a Member Eligible for Retirement or Death of Retired Member Section 22-36

A member is eligible to retire after age 50 if their age plus service is 80 or more. Otherwise, a member is eligible to retire after age 55 and 5 years of service. The pension is reduced $8 \%$ for years prior to age 60 . No reduction applies if age plus service is 80 or more.

A monthly pension equal to $2.25 \%$ of Average Final Monthly Compensation times years of credited service.

If permanently disabled with five years of service, the member shall receive $60 \%$ of final monthly compensation offset by Social Security and workers' compensation benefits. Payment for all medical, surgical and hospital expenses incurred is made if disability is service related. Not payable while full salary continues.

A monthly pension equal to $75 \%$ of the member's accrued pension is paid to the surviving spouse until death or remarriage. The member must have had five years of service or had a service-connected death and six months of service.

If legally married to the member for at least one year, surviving spouse shall be entitled to $75 \%$ of the pension the member was receiving or was eligible to receive at the time of death. Upon the spouse's remarriage, all benefits cease.

Upon the death of an active or retired member, the following benefit will be paid to the surviving children until age 18 or prior to death or marriage, except that if a child is totally disabled, the full pension continues until the cessation of total disability or dependency for support whichever occurs first:

| Number of <br> Dependent Children | Percentage <br> of Accrued Benefit |
| :---: | :---: |
| 1 | $5 \%$ |
| 2 | $10 \%$ |
| 3 | $15 \%$ |
| 4 or more | $20 \%$ |

## APPENDIX A

# SUMMARY OF PLAN PROVISIONS (continued) 

Lump Sum Death Benefits:

1. Active Member without Eligible Dependents
Section 22-37
2. Retired Member without Eligible Dependents
Section 22-37
Accumulated member's contributions, plus $\$ 5,000$.
3. Active Member with Eligible Dependents: $\$ 5,000$.

Section 22-37
4. Retired Member with Eligible Dependents $\$ 5,000$.

Section 22-37
Vesting:
Section 22-39

Section 22 - 40

Supplemental Pension:
Section 22 - 123

Upon severance of employment by a member with less than 5 years of service and prior to obtaining eligibility under Section $22-30$, a refund of such member's accumulated contributions, including credited interest, will be paid.

Upon severance of employment by a member with more than 5 years of service and prior to obtaining eligibility for retirement, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, reduced for early retirement if applicable, commencing at or about age 55. Such deferred pension shall be based on service credited to the date of severance.

Retirees (including widow, widowers and children) receive a supplemental pension (Cost of Living Adjustment - COLA) after five years equal to the lesser of $3 \%$ or $\$ 50$ per month. The COLA is granted for the full remaining period that benefits are payable. No COLAs will be available for members who retire after January 28, 1998.

## APPENDIX B

## ACTUARIAL METHOD AND ASSUMPTIONS

## Actuarial Method

Valuation of the System uses 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 System 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 System, actuarial gains and 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 ASSUMPTIONS (continued)

## Interest:

Inflation:
Salary Increases:
8.00\% per year, net of investment expenses.
$3.5 \%$ per year, net of investment expenses.

| Years of Service | Annual Rate of Increase For Sample Years |  |  | Total Increase |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Merit \& |  |
|  | Inflation | Productivity | Longevity |  |
| 1 | 3.5\% | .5\% | 6.0\% | 10.0\% |
| 5 | 3.5\% | .5\% | 2.5\% | 6.5\% |
| 10 | 3.5\% | .5\% | 1.0\% | 5.0\% |
| 15 | 3.5\% | .5\% | 0.5\% | 4.5\% |
| 20+ | 3.5\% | .5\% | 0.0\% | 4.0\% |

## Payroll Growth Assumption

Service Retirement Age

## Mortality:

Active Members

## Pensioners

| Eligible for Unreduced Retirement |  |  |
| :---: | :---: | :---: |
| Age | $\mathbf{1}^{\text {st }}$ Year <br> Eligible | Subsequent <br> Years |
| $50-53$ | $25 \%$ | $\frac{20 \%}{}$ |
| $54-55$ | $35 \%$ | $25 \%$ |
| $56-57$ | $45 \%$ | $30 \%$ |
| $58-59$ | $50 \%$ | $25 \%$ |
| 60 | $25 \%$ | $25 \%$ |
| 61 |  | $25 \%$ |
| 62 |  | $35 \%$ |
| 63 |  | $25 \%$ |
| 64 |  | $25 \%$ |
| $65-69$ |  | $50 \%$ |
| 70 |  | $100 \%$ |

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of $5 \%$ per year from age 55 to 59 .

RP-2000 Employee Table with generational improvements using scale AA, set forward one year

RP-2000 Healthy Annuitant Table with generational improvements using scale AA, set forward one year

Disabled

RP-2000 Disabled Table with generational improvements

## APPENDIX B

## ACTUARIAL ASSUMPTIONS <br> (continued)

Disability:

| Age | Annual Rate |
| :---: | :---: |
| 20 | $0.11 \%$ |
| 30 | $0.14 \%$ |
| 40 | $0.19 \%$ |
| 50 | $0.41 \%$ |
| 60 | $1.48 \%$ |

Percent Married at Death 75\%
or Retirement:
Number of Children per 0
Married Member
Termination:

| Years of Service | Annual Rate |
| :---: | :---: |
|  | $15 \%$ |
| 5 | $7 \%$ |
| 10 | $3 \%$ |
| $11+$ | $2.5 \%$ |

Assets:
Actuarial Value of Assets equals 75\% of Expected Value plus 25\% of Market Value.

Vested Terminations Electing Refund:

| Age | Percent |
| :---: | :---: |
| and Below | $100 \%$ |
| 41 | $80 \%$ |
| 42 | $60 \%$ |
| 43 | $40 \%$ |
| 44 and Above | $0 \%$ |

## APPENDIX C

## HISTORICAL SUMMARY OF MEMBERSHIP

The following table displays selected historical data as available.

| Valuation |  | Active Members |  |  |  |  |  | Number |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { Date } \\ & \text { 1-Jan } \end{aligned}$ | Total <br> Count |  | Age | Entry <br> Age | Average Service | Annual Pay (\$) | Pay <br> Increase |  Vested <br> Disabled Inactive |  | Retired |
| 2008 | 2,427 | 1,125 | 47.1 | 35.9 | 11.2 | 46,470 |  | 125 | 79 | 1,098 |
| 2009 | 2,440 | 1,116 | 47.3 | 36.4 | 10.9 | 47,495 | 2.21\% | 122 | 81 | 1,121 |
| 2010 | 2,456 | 1,116 | 47.8 | 37.1 | 10.8 | 49,667 | 4.57\% | 124 | 83 | 1,133 |
| 2011 | 2,493 | 1,130 | 47.4 | 36.9 | 10.5 | 49,030 | (1.28)\% | 120 | 82 | 1,161 |
| 2012 | 2,541 | 1,156 | 47.3 | 36.8 | 10.5 | 50,335 | 2.66\% | 121 | 77 | 1,187 |

## MEMBERSHIP DATA FOR VALUATION

The summary of employee characteristics presented below covers the employee group as of January 1,2012 . 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 1,156
(b) Deferred vested employees 77
(c) Disabled employees 121
(d) Retired employees, spouses and children
receiving benefits
(e) Total employees in valuation 2,541

Average age of employees in valuation:
(a) Active employees

Attained Age 47.3
Hire Age 36.8
(b) Deferred vested employees 49.8
(c) Disabled employees 60.8
(d) Retired employees 68.1
(e) Spouses and children receiving benefits 72.2

Active employees eligible for vested benefits as of January 1, 2012:
(a) Employees under age 55 with 5 or more years of service -
eligible for deferred vested benefits
(b) Employees age 55 and over with 5 or more years of service -
eligible for early or normal retirement benefits
(c) Employees eligible for refund of contributions only $\quad 417$
(d) Total 1,156

## MEMBERSHIP DATA RECONCILIATION

## January 1, 2011 to January 1, 2012

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

|  | Active <br> Members | Deferred Vested | Disabled | Retirees | Beneficiaries | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Members as of 1/1/2011 | 1,130 | 82 | 120 | 914 | 247 | 2,493 |
| New Members | 94 | 0 | 0 | 0 | 0 | 94 |
| Terminations |  |  |  |  |  |  |
| Rehired | 3 | (1) | 0 | 0 | 0 | 2 |
| Refunded | (23) | (3) | 0 | 0 | 0 | (26) |
| Terminated, refund due | (3) | 0 | 0 | 0 | 0 | (3) |
| Deferred Vested | (6) | 6 | 0 | 0 | 0 | 0 |
| LTD | (4) | 0 | 4 | 0 | 0 | 0 |
| Data Corrections (and Benefits Expired) | 0 | (1) | 1 | 0 | (1) | (1) |
| Retirements | (33) | (5) | 0 | 38 | 0 | 0 |
| Alternate Payees (QDRO) | 0 | 0 | 0 | 0 | 4 | 4 |
| Deaths |  |  |  |  |  |  |
| With Beneficiary | (2) | (1) | (4) | (8) | 22 | 7 |
| Without Beneficiary | 0 | 0 | 0 | (18) | (11) | (29) |
| Total Members 1/1/2012 | 1,156 | 77 | 121 | 926 | 261 | 2,541 |

## SCHEDULE I

## ACTIVE MEMBERS AS OF JANUARY 1, 2012

| Age | Count of Members |  |  | Valuation Salaries of Members |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
| Under 25 | 12 | 3 | 15 | \$ 466,522 | \$ 111,570 | \$ 578,092 |
| 25-29 | 43 | 36 | 79 | 1,719,900 | 1,379,429 | 3,099,328 |
| 30-34 | 68 | 37 | 105 | 3,207,078 | 1,623,905 | 4,830,983 |
| 35-39 | 67 | 32 | 99 | 3,496,133 | 1,582,626 | 5,078,759 |
| 40-44 | 108 | 24 | 132 | 5,649,421 | 1,063,906 | 6,713,327 |
| 45-49 | 130 | 50 | 180 | 6,851,151 | 2,587,885 | 9,439,036 |
| 50-54 | 120 | 70 | 190 | 6,343,392 | 3,517,183 | 9,860,575 |
| 55-59 | 135 | 76 | 211 | 7,666,667 | 3,992,586 | 11,659,253 |
| 60-64 | 69 | 38 | 107 | 3,960,707 | 1,898,691 | 5,859,399 |
| Over 64 | 22 | 16 | 38 | 1,441,509 | 791,951 | 2,233,460 |
| Total | 774 | 382 | 1,156 | \$40,802,481 | \$18,549,732 | \$59,352,213 |




## SCHEDULE I (continued)

## ACTIVE MEMBERS AS OF JANUARY 1, 2012

| Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Under 5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | Over 40 | Total |
| Under 25 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 25-29 | 69 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 30-34 | 70 | 29 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 35-39 | 51 | 25 | 17 | 6 | 0 | 0 | 0 | 0 | 0 | 99 |
| 40-44 | 48 | 33 | 31 | 15 | 5 | 0 | 0 | 0 | 0 | 132 |
| 45-49 | 44 | 42 | 37 | 27 | 19 | 10 | 1 | 0 | 0 | 180 |
| 50-54 | 47 | 33 | 22 | 30 | 32 | 21 | 5 | 0 | 0 | 190 |
| 55-59 | 41 | 37 | 41 | 41 | 21 | 19 | 6 | 5 | 0 | 211 |
| 60-64 | 23 | 15 | 26 | 16 | 9 | 9 | 3 | 6 | 0 | 107 |
| Over 64 | 9 | 4 | 6 | 5 | 5 | 4 | 3 | 2 | 0 | 38 |
| Total | 417 | 228 | 186 | 140 | 91 | 63 | 18 | 13 | 0 | 1,156 |



## SCHEDULE II

RETIRED MEMBERS AS OF JANUARY 1, 2012

| Age | Count of Retirees |  |  | Current Monthly Benefits |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
| Under 60 | 84 | 47 | 131 | \$ 246,321 | \$111,840 | \$ 358,161 |
| 60-64 | 181 | 76 | 257 | 436,070 | 144,506 | 580,576 |
| 65-69 | 141 | 56 | 197 | 322,162 | 97,904 | 420,065 |
| 70-74 | 98 | 41 | 139 | 185,182 | 56,257 | 241,439 |
| 75-79 | 60 | 22 | 82 | 92,921 | 31,509 | 124,430 |
| 80-84 | 44 | 21 | 65 | 70,637 | 20,273 | 90,910 |
| 85-89 | 25 | 9 | 34 | 34,058 | 6,019 | 40,078 |
| Over 89 | 9 | 12 | 21 | 8,058 | 9,276 | 17,334 |
| Total | 642 | 284 | 926 | \$1,395,409 | \$477,585 | \$1,872,994 |




## SCHEDULE III

## BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2012

| Age | Count of Beneficiaries |  |  | Current Monthly Benefits |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
| Under 60 | 6 | 36 | 42 | \$ 3,602 | \$ 34,992 | \$ 38,594 |
| 60-64 | 6 | 24 | 30 | 4,878 | 32,740 | 37,617 |
| 65-69 | 1 | 21 | 22 | 246 | 24,388 | 24,633 |
| 70-74 | 0 | 36 | 36 | 0 | 46,944 | 46,944 |
| 75-79 | 3 | 39 | 42 | 2,906 | 45,359 | 48,266 |
| 80-84 | 2 | 33 | 35 | 2,098 | 25,539 | 27,638 |
| 85-89 | 2 | 29 | 31 | 1,726 | 21,031 | 22,757 |
| Over 89 | 1 | 22 | 23 | 565 | 10,468 | 11,034 |
| Total | 21 | 240 | 261 | \$16,021 | \$241,462 | \$257,483 |




## SCHEDULE IV

## DEFERRED VESTED FORMER MEMBERS AS OF JANUARY 1, 2012

|  | Count of Members |  |  | Expected Monthly Benefit |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Males | Females | Total | Males | Females | Total |
| Under 25 | 0 | 0 | 0 | \$ 0 | \$ 0 | \$ 0 |
| 25-29 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-34 | 1 | 2 | 3 | 1,026 | 1,573 | 2,599 |
| 35-39 | 1 | 2 | 3 | 753 | 1,389 | 2,142 |
| 40-44 | 9 | 5 | 14 | 6,716 | 5,520 | 12,236 |
| 45-49 | 8 | 6 | 14 | 10,009 | 6,172 | 16,181 |
| 50-54 | 10 | 8 | 18 | 12,510 | 8,727 | 21,237 |
| 55-59 | 12 | 12 | 24 | 15,638 | 10,369 | 26,007 |
| Over 59 | 0 | 1 | 1 | 0 | 514 | 514 |
| Total | 41 | 36 | 77 | \$46,652 | \$34,263 | \$80,916 |

## SCHEDULE V

## DISABLED MEMBERS RECEIVING BENEFITS AS OF JANUARY 1, 2012

| Age | Count of Members |  |  | Current Monthly Benefit |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
| Under 25 | 0 | 0 | 0 | \$ 0 | \$ 0 | \$ 0 |
| 25-29 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-34 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35-39 | 2 | 0 | 2 | 3,817 | 0 | 3,817 |
| 40-44 | 2 | 0 | 2 | 3,210 | 0 | 3,210 |
| 45-49 | 9 | 1 | 10 | 16,091 | 1,319 | 17,410 |
| 50-54 | 17 | 3 | 20 | 29,617 | 5,285 | 34,902 |
| 55-59 | 18 | 7 | 25 | 31,311 | 12,147 | 43,458 |
| Over 59 | 52 | 10 | 62 | 74,848 | 10,484 | 85,333 |
| Total | 100 | 21 | 121 | \$158,896 | \$29,235 | \$188,130 |

