

# Seattle City Employees' Retirement System



## Actuarial Valuation (As of January 1, 2008)

By

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June 3, 2008

Retirement Board  
Seattle City Employees' Retirement System  
720 Third Avenue, Suite 1000  
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Dear Members of the Board:

As requested, we have made an actuarial valuation of the Seattle City Employees' Retirement System (SCERS) as of January 1, 2008. This report reflects the benefit provisions and contribution rates in effect as of January 1, 2008. The one material change since the prior valuation (January 1, 2008) is the reflection of the new COLA provisions that became effective in 2007. New assumptions were also recently adopted, although they only had a minor impact.

### **Actuarial Certification**

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by SCERS staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

We further certify that all costs, liabilities, rates of interest, and other factors for SCERS have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of SCERS and reasonable expectations) and which, in combination, offer our best estimate of anticipated experience affecting SCERS. Nevertheless, the emerging costs will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions. The Retirement Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix A.



Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in 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 plan's funded status); and changes in plan provisions or applicable law.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for SCERS. Actuarial computations under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirements. The computations prepared for this purpose may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of SCERS's funding requirements as stated under their Interim Funding Policy, the Retirement Benefit Enhancement Agreement, and of GASB Statement No. 25. 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.

Milliman's work product was prepared exclusively for SCERS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning SCERS's operations, and uses SCERS's data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

We would like to express our appreciation to the system staff who gave substantial assistance in supplying the data on which this report is based.

I, Nick Collier, am a member of the American Academy of Actuaries and an Associate of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

A handwritten signature in black ink that reads "Nick Collier".

Nick J. Collier, ASA, EA, MAAA  
Principal and Consulting Actuary

NJC/nlo

# Seattle City Employees' Retirement System Actuarial Valuation

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# Seattle City Employees' Retirement System Actuarial Valuation

## Section 1 Summary of the Findings



### Contribution Sufficiency

Based on the actuarial valuation of the benefits in effect under the Seattle City Employees' Retirement System as of January 1, 2008, the current employer contribution rate, 8.03% of members' salaries, is sufficient to maintain current benefits, assuming future experience follows the actuarial assumptions. Note that the valuation does not reflect any asset losses that have occurred in 2008.

The combined contribution rate of 16.06% includes a small amount that, together with the required \$12 annual employee and \$12 matching employer contribution, finances the \$2,000 death benefit program.

### Funding Progress

On the basis of the January 1, 2006 actuarial valuation the funding ratio was 88.8%. Based on the January 1, 2008 valuation, the funding ratio is 92.4%. The increase in the funding ratio resulted from the difference between actual and expected experience over the past two years, primarily asset returns greater than the assumed rate of return. This was somewhat offset by the reflection of the new COLA provisions that became effective in 2007. A summary of the historical funding ratio and other measurements are shown on Graph 1 and 2.

All assumptions for the January 1, 2008 actuarial valuation are the same as those used for both the January 1, 2006 actuarial valuation, except for minor changes in the termination rates, probabilities of refund, retirement rates, merit salary scale, and administrative expense assumption that were adopted by the Board earlier this year.

A summary of all changes in the funding ratio is shown below.

Sources of Change	Funding Ratio
<b>January 1, 2006 Actuarial Valuation</b>	<b>88.8%</b>
Expected Year-to-Year Change	1.9%
Asset Gain/Loss	<b>3.8%</b>
Salary Variation	-0.6%
New COLA Provisions	<b>-2.0%</b>
Assumption Changes	0.2%
Other	0.3%
<b>Total Change</b>	<b>3.6%</b>
<b>January 1, 2008 Actuarial Valuation</b>	<b>92.4%</b>

**Summary Exhibit**

A summary of the key results of this valuation, along with a comparison to the January 1, 2006 valuation is shown in Table 1.

**Impact of Contingent COLA**

The Seattle Municipal Code allows for an increase in the cost-of-living adjustment (COLA) available to current and future retired members. Currently, the Floor COLA is at the 65% level. The enhanced COLA benefit (70% Floor COLA) does not become effective until the System attains at least a 100% funding level. Since it is unknown when this benefit will become effective, we have not included it in the valuation. However, in Section 8, we have shown the hypothetical cost impact if the increased benefits had been in effect on the valuation date.

Note that this valuation does reflect the revised COLA provisions (1.5% compounding COLA for all members and retirees and a 65% Floor COLA) that became effective based on the special April 30, 2007 actuarial valuation.

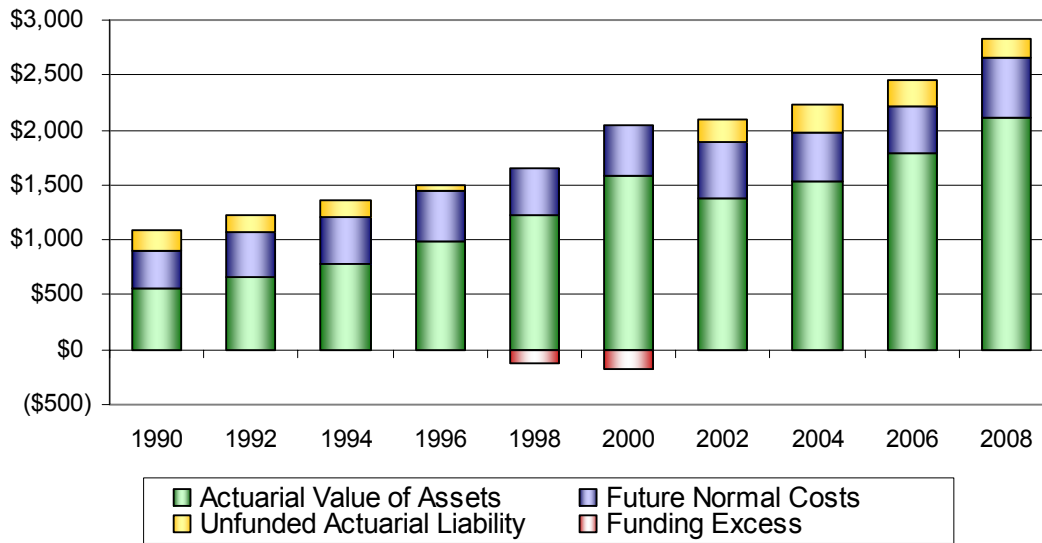
## Seattle City Employees' Retirement System Actuarial Valuation

**Table 1 Summary of Results**

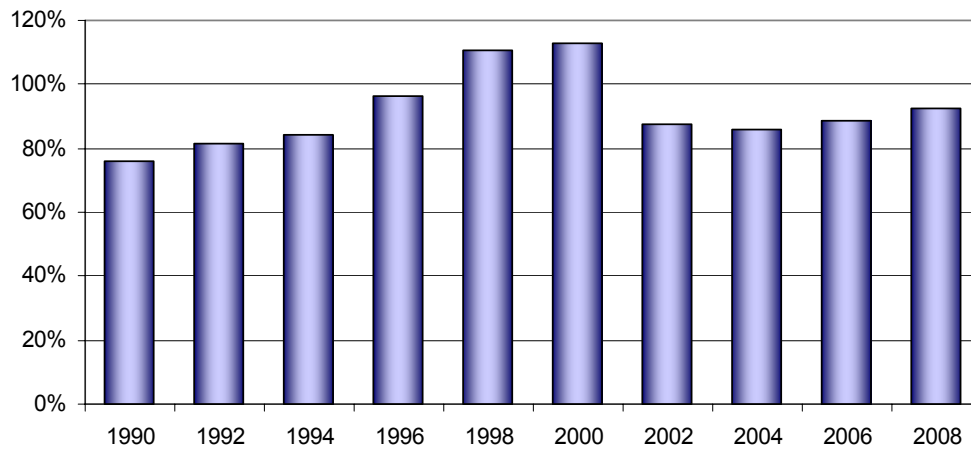
	January 1, 2008	January 1, 2006	Percentage Change
I. Total Membership			
A. Active Members	8,842	8,521	3.8%
B. Retired Members & Beneficiaries	5,201	5,011	3.8%
C. Vested Terminated Members	<u>2,050</u>	<u>1,866</u>	9.9%
D. Total	16,093	15,398	4.5%
II. Pay Rate as of January 1, 2008			
A. Annual Total (\$millions)	\$ 529.1	\$ 468.1	13.0%
B. Annual Average	\$ 59,835	\$ 54,934	8.9%
III. Average Monthly Benefit Paid to Current Retirees and Beneficiaries			
A. Service Retirement	\$ 1,781	\$ 1,576	13.0%
B. Disability Retirement	1,090	977	11.6%
C. Surviving Spouse and Dependents	<u>1,057</u>	<u>849</u>	24.5%
D. Total	\$ 1,647	\$ 1,397	17.9%
IV. Actuarial Accrued Liability			
A. Active Members	\$ 1,209.7	\$ 1,115.3	8.5%
B. Retired Members	959.9	796.6	20.5%
C. Vested Terminated Members	<u>125.0</u>	<u>105.6</u>	18.3%
D. Total	\$ 2,294.6	\$ 2,017.5	13.7%
V. Assets			
A. Market Value of Fund (\$millions)	\$ 2,119.4	\$ 1,791.8	18.3%
VI. Unfunded Actuarial Accrued Liability or Surplus Funding (\$millions)	\$ 175.2	\$ 225.7	(22.4)%
VII. Amortization Period	16.2 years	18.0 years	
VIII. Funded Ratio	92.4%	88.8%	4.0%
IX. Normal Cost as a Percent of Salary	13.32%	12.50%	6.6%

## Seattle City Employees' Retirement System Actuarial Valuation

**Graph 1 Historical Asset and Liability Comparison**



**Graph 2 Historical Funding Ratios**



Year	(in Millions)				Funding Ratio
	PVB	Assets	PVFNC	UAAL	
1990	\$1,087.5	\$558.8	\$349.6	\$179.1	75.7%
1992	1,221.2	660.0	410.7	150.5	81.4%
1994	1,358.9	781.8	432.7	144.4	84.4%
1996	1,492.0	980.2	472.3	39.5	96.1%
1998	1,539.3	1,224.6	433.5	(118.8)	110.7%
2000	1,872.4	1,582.7	469.3	(179.6)	112.8%
2002	2,088.7	1,383.7	507.3	197.7	87.5%
2004	2,229.8	1,527.5	450.9	251.4	85.9%
2006	2,448.5	1,791.8	431.0	225.8	88.8%
2008	2,825.8	2,119.4	531.2	175.2	92.4%

# Seattle City Employees' Retirement System Actuarial Valuation

## Section 2 Scope of the Report

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This report presents the actuarial valuation of the Seattle City Employees' Retirement System as of January 1, 2008.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets of the System. A summary of the assets is set forth in Table 2. Sections 3, 4, and 5 describe how the obligations of the System are to be met under the actuarial cost method in use.

Section 6 discloses actuarial information based on the requirements of Statements No. 25 and 27 of the Governmental Accounting Standards Board. Section 7 sets forth estimated actuarial gains or losses from the various sources. Section 8 shows the hypothetical cost impact of the contingent COLA benefits, had they been in effect on the valuation date.

Appendix A is a summary of the actuarial procedures and assumptions used to compute the liabilities and contributions shown in this report.

The current benefit structure, as determined by the provisions of the governing law on January 1, 2008, is summarized in Appendix B. Schedules of valuation data classifying the data used in the valuation by various categories of contributing members, former contributing members, and beneficiaries make up Appendix C.

Comparative statistics are presented on the System's membership and contribution rates. Appendix D is a glossary of actuarial terms used in this report.



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## Seattle City Employees' Retirement System Actuarial Valuation

### Section 3 Assets

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In many respects, an actuarial valuation can be regarded as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is January 1, 2008. On that date, the assets available for the payment of benefits are appraised. These assets are compared with the actuarial liabilities, which are generally well in excess of the assets. The actuarial process thus leads to a method of determining what contributions by members and their employers are needed to strike a balance.

This section of the report deals with the asset determination. In the next section, the actuarial liabilities will be discussed. Section 5 will deal with the process for determining required contributions, based on the relationship between the assets and the actuarial liabilities.

Table 2 summarizes the financial resources of the System on January 1, 2008. Of the total assets, a minor portion is set aside for the payment of current liabilities and expenses. Table 2 shows the market value of assets at January 1, 2008 and January 1, 2006. The actuarial value of assets is equal to the market value.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 2      Summary of Assets**

	January 1, 2008		January 1, 2006	
	Market Value	Distribution	Market Value	Distribution
<b>Assets</b>				
Cash and short-term investments	81,770,726	3.9%	92,342,495	4.6%
Securities lending collateral	103,323,467	4.9%	145,097,240	7.2%
Receivables				
Employee	1,029,194	0.0%	1,181,695	0.1%
Employer	4,387,860	0.2%	3,929,995	0.2%
Interest and Dividends	2,615,783	0.1%	2,328,299	0.1%
Total Receivables	8,032,837	0.4%	7,439,989	0.4%
Investments at fair value				
US Government obligations	134,906,565	6.4%	139,700,403	6.9%
Domestic corporate bonds	102,791,739	4.9%	71,833,915	3.6%
Domestic stocks	763,843,752	36.0%	970,965,137	48.3%
International stocks	402,965,990	19.0%	212,328,995	10.6%
Real estate	286,646,176	13.5%	237,796,406	11.8%
Alternative/Venture capital	233,789,609	11.0%	199,070,322	9.9%
Mezzanine debt	114,462,620	5.4%	88,390,057	4.4%
Total investments	2,039,406,451	96.2%	1,920,085,235	95.5%
Equipment	2,963	0.0%	3,308	0.0%
Total assets	2,232,536,444	105.3%	2,164,968,267	107.6%
<b>Liabilities</b>				
Pensions payable	7,586,549	-0.4%	6,398,172	-0.3%
Other payables	2,228,317	-0.1%	2,319,228	-0.1%
Securities lending collateral	103,323,467	-4.9%	145,097,240	-7.2%
Total Liabilities	113,138,333	-5.3%	153,814,640	-7.6%
<b>Market Value of Net Assets Held in Trust For Pension Benefits</b>				
	<b>2,119,398,111</b>	<b>100.0%</b>	<b>2,011,153,627</b>	<b>100.0%</b>

# Seattle City Employees' Retirement System Actuarial Valuation

## Section 4 Actuarial Liabilities

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In the previous section, an actuarial valuation was related to an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, January 1, 2008. In this section, the discussion will focus on the commitments of the System, which will be referred to as its actuarial liabilities.

Table 3 contains an analysis of the actuarial present value of all future benefits for contributing members, for former contributing members, and for beneficiaries. The analysis is given by type of benefit.

The actuarial liabilities summarized in Table 3 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes a measure of both benefits already earned and future benefits to be earned. Thus, for all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of their surviving beneficiaries.

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table 3 Actuarial Present Value of Future Benefits**  
(All dollar amounts in millions)

	<u>January 1, 2008</u>	<u>January 1, 2006</u>
A. Active Members		
Service Retirement	\$ 1,619.6	\$ 1,423.8
Vested Retirement	47.1	38.1
Disability Retirement	12.9	11.7
Survivor Benefits	27.3	24.4
Refund of Member Contributions	<u>34.0</u>	<u>48.3</u>
Total	\$ 1,740.9	\$ 1,546.3
B. Inactive Members and Annuitants		
Service Retirement	\$ 864.0	\$ 718.8
Disability Retirement	9.4	7.0
Beneficiaries	86.5	70.8
Vested Terminated Members	<u>125.0</u>	<u>105.6</u>
Total	\$ 1,084.9	\$ 902.2
C. Grand Total	\$ 2,825.8	\$ 2,448.5

# Seattle City Employees' Retirement System Actuarial Valuation

## Section 5 Employer Contributions

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### Funding

As shown in Tables 2 and 3, the total actuarial liability exceeds the current assets. This is to be expected, because the System is anticipating future member and employer contributions. The actuarial valuation develops a contribution method to fund this shortfall.

The actuarial cost method utilized is the Entry Age Actuarial Cost Method. This cost method has two components:

1. A normal cost, and
2. An amortization of the unfunded actuarial accrued liability.

Most actuarial cost methods utilize a cost method with these two components. The vast majority of public pension plans utilize the entry age (EA) actuarial cost method, as does SCERS.

The normal cost under EA is developed so that benefits are funded as a level percentage of payroll for each member from the member's hire date to the member's termination date. One key feature of this method is that costs tend to be stable from year-to-year because most members' entry age cost percentages do not change materially from year-to-year, and because the population does not change considerably from year-to-year. Normal costs by benefit type are shown in Table 4.

When the present value of future normal costs is subtracted from the present value of total benefits, the result is the actuarial accrued liability. This can also be thought of as the present value of past normal costs, or the amount which would be in the fund if all prior assumptions had been exactly met. To the extent that this actuarial accrued liability exceeds plan assets, an unfunded actuarial accrued liability (UAAL) exists. This is currently the situation for the SCERS.

### Actuarial Gains and Losses

Because a UAAL exists, the total System costs must reflect an amortization of this UAAL. In general, a UAAL exists when liabilities increase more than anticipated or assets increase less than anticipated. Both have occurred as benefits were recently improved and investment returns fell significantly short of expectations earlier in this decade.

When experience is different from actuarial expectation, an actuarial gain or loss occurs. Section 7 illustrates the historical actuarial gains and losses by source. Note that the strong investment return during 2006 and 2007 resulted in an actuarial gain of \$97 million. Ongoing actuarial gains and losses decrease and increase the UAAL.

## Amortization of UAAL

Table 6 compares the 16.06% total contribution rate with the necessary funding components: normal cost and amortization of UAAL. The table shows that the total contribution rate exceeds the normal cost, with the remaining contribution going toward an amortization of the UAAL. The resulting amortization payment of 2.74% results in an amortization period of 16.2 years from January 1, 2008.

The current Retirement Board funding policy states that “if the Funding Ratio is less than 100% and a UAAL occurs which can not be amortized over a period of less than 20 years by the combined total contribution rates, additional employer contributions may be considered.” The remaining amortization period is now 18.0 years.

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table 4      Normal Cost Contribution Rates as Percentages of Salary**

	<u>January 1, 2008</u>	<u>January 1, 2006</u>
Service Retirement	10.23 %	9.21 %
Vested Retirement	1.00	0.82
Disability Retirement	0.17	0.16
Survivor Benefits	0.21	0.15
Refund of Member Contributions	1.31	1.81
Administrative Expenses	<u>0.40</u>	<u>0.35</u>
Total	13.32 %	12.50 %

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table 5      Unfunded Actuarial Accrued Liability**

(All dollar amounts in millions)

	<u>January 1, 2008</u>	<u>January 1, 2006</u>
A. Actuarial present value of all future benefits for present and former members and their survivors (Table 3)	\$      2,825.8	\$      2,448.5
B. Less actuarial present value of total future normal costs for present members	<u>          531.2</u>	<u>          431.0</u>
C. Actuarial accrued liability [A - B]	\$      2,294.6	\$      2,017.5
D. Less actuarial value of assets available for benefits (Table 2)	<u>          2,119.4</u>	<u>          1,791.8</u>
E. Unfunded actuarial accrued liability (Funding Excess, if negative) [C - D]	\$      175.2	\$      225.7
F. Funding Ratio [D ÷ C]	92.4%	88.8%

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table 6 Recommended Contribution Rates as Percentages of Salary**

	<u>January 1, 2008</u>	<u>January 1, 2006</u>
A. Employer contribution rate	8.03 %	8.03 %
B. Member contribution rate	<u>8.03</u>	<u>8.03</u>
C. Total contribution rate	16.06 %	16.06 %
D. Less total normal cost rate	<u>13.32</u>	<u>12.50</u>
E. Excess of contribution rate over normal cost rate	2.74 %	3.56 %
F. Amortization period	16.2 years	18.0 years
G. Allocation of employer contribution rate*		
Normal cost	5.29 %	4.47 %
Amortization payment	<u>2.74</u>	<u>3.56</u>
Total employer contribution rate	8.03 %	8.03 %



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# Seattle City Employees' Retirement System Actuarial Valuation

## Section 6 Actuarial Information for Accounting Purposes

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The Governmental Accounting Standards Board (GASB) has issued standards under Statements No. 25 and 27. Statement 25 is required reporting by the plan (the System) and Statement 27 is reporting by state and local governmental employers (the City).

Statement 25 included certain supplementary information:

1. A schedule of funding progress, and
2. A schedule of employer contributions.

The schedule of funding progress is shown in Table 8 and compares assets and liabilities over the years. In particular, it shows the funded ratio and Unfunded Actuarial Accrued Liability (UAAL). As shown by Table 8, the plan was fully funded or nearly fully funded from 1996 through 2000. Because of the poor investment returns of 2000 through 2003, the plan remains not fully funded. In this case, "fully funded" means that assets exceed actuarial accrued liabilities, so that no positive UAAL exists. This can also be seen as a funded ratio in excess of 100%.

The schedule of employer contributions is shown in Table 10, and shows that the employer has consistently made contributions equal or greater to the ARC.

Table 7 develops the Annual Pension Cost (APC) and Net Pension Obligation (NPO). The NPO can be thought of as the accumulated value of APC in excess of employer contributions. Because contributions have exceeded the APC in prior years, a negative NPO has built up. The current Board policy is to set the Actuarial Required Contribution (ARC) equal to the fixed contribution rate, solving for the amortization period.

**Seattle City Employees' Retirement System  
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**Table 7      GASB Statement No. 27 Annual Pension Cost  
and Net Pension Obligation**

For Fiscal Year Ending December 31, 2007  
Based on January 1, 2006 Valuation

	<b>Fiscal Year Ended December 31</b>	
	<b>2006</b>	<b>2007</b>
1a Total Normal Cost Rate	12.50%	12.50%
1b Employee Contribution Rate	8.03%	8.03%
1c Employer Normal Cost Rate (1a - 1b)	<u>4.47%</u>	<u>4.47%</u>
2a Total Employer Contribution Rate	8.03%	8.03%
2b Amortization Payment Rate (2a - 1c)	3.56%	3.56%
2c Amortization Period	18.0	18.0
2d GASB 27 Amortization Rate	3.56%	3.56%
3 Total Annual Required Contribution (ARC) Rate (1c + 2d)	8.03%	8.03%
4 Covered Employee Payroll**	472,470,212	501,861,843
5a ARC (3 x 4)	37,939,358	40,299,506
5b Interest on Net Pension Obligation (NPO)	(6,049,964)	(6,064,263)
5c ARC Adjustment	<u>5,865,455</u>	<u>5,879,319</u>
5d Annual Pension Cost (APC) (5a + 5b + 5c)	<u>37,754,849</u>	<u>40,114,562</u>
6 Employer Contribution	37,939,358	40,299,506
7a Change in NPO (5d - 6)	(184,509)	(184,944)
7b NPO at Beginning of Year	<u>(78,064,047)</u>	<u>(78,248,556)</u>
7c NPO at End of Year (7a + 7b)	<u>(78,248,556)</u>	<u>(78,433,500)</u>

\* If the amortization period determined by the actual contribution rate exceeds the maximum amortization period required by GASB Statement No. 27, the ARC is determined using an amortization of the UAAL over 30 years.

\*\* Covered payroll includes compensation paid to all active employees on which contributions were made in the year preceding the valuation date.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 8      Schedule of Funding Progress**  
(All dollar amounts in millions)

Actuarial Valuation Date January 1	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL)	Unfunded Actuarial Accrued Liabilities (UAAL)	Funded Ratio	Covered Payroll <sup>(1)</sup>	UAAL as a Percentage of Covered Payroll
1984	\$ 329.8	\$ 544.0	\$ 214.2	60.6%	\$ 159.4	134.4%
1986	395.7	561.3	165.6	70.5	182.0	91.0
1988	445.4	595.3	149.9	74.8	199.0	75.3
1990	558.8	737.9	179.1	75.7	212.3	84.4
1992	660.0	810.5	150.5	81.4	239.4	62.9
1994	781.8	926.2	144.4	84.4	291.8	49.5
1996	980.2	1,019.7	39.5	96.1	310.6	12.7
1997	1,094.8	1,087.3	(7.5)	100.7	316.9	(2.4)
1998 <sup>(2)</sup>	1,224.6	1,266.7	42.1	96.7	341.5	12.3
1999	1,375.0	1,326.6	(48.4)	103.6	370.4	(13.1)
2000	1,582.7	1,403.1	(179.6)	112.8	383.6	(46.5)
2002	1,383.7	1,581.4	197.7	87.5	405.1	48.8
2004	1,527.5	1,778.9	251.4	85.9	424.7	59.2
2006	1,791.8	2,017.5	225.8	88.8	447.0	50.5
2008	2,119.4	2,294.6	175.2	92.4	501.9	34.9

<sup>(1)</sup> Covered Payroll includes compensation paid to all active employees on which contributions are calculated. Covered Payroll differs from the Active Member Valuation Payroll shown in Table 1, which is an annualized compensation of only those members who were active on the actuarial valuation date.

<sup>(2)</sup> Reflects increased COLA benefits adopted by the City Council after the valuation was completed.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 9 Solvency Test**

(All dollar amounts in millions)

Actuarial Valuation Date January 1	Actuarial Value of Valuation Assets	Actuarial Accrued Liabilities for				Portion of Actuarial Accrued Liabilities Covered by Assets			
		(A)	(B)	(C)	(D)	(A)	(B)	(C)	(D)
		Active Member Contributions	Inactives, Retirees and Beneficiaries	Active Members (Employer Financed Portion)	Total				
1984	\$ 329.8	\$ 90.1	\$ 243.0	\$ 210.9	\$ 544.0	100.0%	98.6%	0.0%	60.6%
1986	395.7	110.7	263.1	187.5	561.3	100.0	100.0	11.7	70.5
1988	445.4	136.0	303.6	155.7	595.3	100.0	100.0	3.7	74.8
1990	558.8	164.0	332.8	241.1	737.9	100.0	100.0	25.7	75.7
1992	660.0	202.6	357.9	250.0	810.5	100.0	100.0	39.8	81.4
1994	781.8	248.4	383.1	294.7	926.2	100.0	100.0	51.0	84.4
1996	980.2	294.1	409.3	316.3	1,019.7	100.0	100.0	87.5	96.1
1997	1,094.8	313.1	449.8	324.4	1,087.3	100.0	100.0	100.0	100.7
1998 <sup>(1)</sup>	1,224.6	337.3	551.8	377.6	1,266.7	100.0	100.0	88.9	96.7
1999	1,375.0	358.4	577.6	390.6	1,326.6	100.0	100.0	100.0	103.6
2000	1,582.7	385.2	599.4	418.5	1,403.1	100.0	100.0	100.0	112.8
2002	1,383.7	434.3	675.6	471.5	1,581.4	100.0	100.0	58.1	87.5
2004	1,527.5	482.5	758.9	537.5	1,778.9	100.0	100.0	53.2	85.9
2006	1,791.8	539.7	902.2	575.6	2,017.5	100.0	100.0	60.8	88.8
2008	2,119.4	590.1	1,084.9	619.6	2,294.6	100.0	100.0	71.7	92.4

<sup>(1)</sup> Reflects increased COLA benefits adopted by the City Council after the valuation was completed.



## Seattle City Employees' Retirement System Actuarial Valuation

**Table 10 Schedule of Employer Contributions**

(All dollar amounts in millions)

Fiscal Year Ending December 31	Covered Employee Payroll <sup>(1)</sup>	Actual Employer Contributions <sup>(2)</sup>	Actual Employer Contribution % <sup>(3)</sup>	Annual Required Contribution (ARC) % <sup>(4)</sup>	Percentage of ARC Contributed
1989	\$ 212.3	\$ 25.1	8.91%	8.91%	\$ 159.4
1990	243.2	21.8	8.91	8.91	100.0
1991	239.4	21.5	8.91	8.91	100.0
1992	280.4	25.1	8.91	8.91	100.0
1993	291.8	26.1	8.91	8.91	100.0
1994	298.0	26.7	8.91	8.91	100.0
1995	310.6	27.8	8.91	8.91	100.0
1996	316.9	28.4	8.91	8.91	100.0
1997	316.3	28.3	8.91	8.91	100.0
1998 <sup>(4)</sup>	341.5	30.6	8.91	8.91	100.0
1999	370.4	29.7	8.03	4.50	178.0
2000	383.6	30.8	8.03	4.50	178.0
2001	405.1	32.7	8.03	3.04	264.0
2002	454.5	36.6	8.03	3.04	264.0
2003	424.7	34.2	8.03	8.03	100.0
2004	456.8	36.7	8.03	8.03	100.0
2005	447.0	35.9	8.03	8.03	100.0
2006	472.5	37.9	8.03	8.03	100.0
2007	501.9	40.3	8.03	8.03	100.0

<sup>(1)</sup> Computed as the dollar amount of the actual employer contribution made as a percentage of payroll divided by the contribution rate, expressed as a percentage of payroll.

<sup>(2)</sup> The actual and required employer contributions are expressed as a percentage of payroll, after first recognizing the \$12 per employee assessment made for the death benefits. This assessment per employee is included in the actual employer contributions reported and has been previously recognized by the actuary in determining the ARC.

<sup>(3)</sup> The City makes employer contributions as a percentage of actual payroll as set in the City Ordinance. Thus, as long as the percentage equals the percentage required by the most recent actuarial valuation, the dollar amount of the Annual Required Contributions (ARC) is equal to the actual dollar amount of the employer contributions. The City Ordinance does not permit a reduction in the employer contribution rate less than the employee contribution rate. Thus, the City's contributions exceeded the ARC for 1999 through 2001 and resulted in a negative NPO amount.

<sup>(4)</sup> ARC reflects the increased COLA benefits adopted in 1998.



**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table 11      GASB Statement No. 27 Five-Year Trend Information**

<u>Fiscal Year Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Contribution as a Percentage of APC</u>	<u>Net Pension Obligation (NPO)</u>
December 31, 2003	31,882,527	107%	74,500,706
December 31, 2004	34,920,836	105%	76,261,567
December 31, 2005	34,094,865	105%	78,064,047
December 31, 2006	37,754,849	100%	78,248,556
December 31, 2007	40,114,562	100%	78,433,500

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 12      GASB Statement No. 27 Annual Development of Pension Cost**

<u>Fiscal Year Ending</u>	<u>ARC at EOY</u>	<u>Interest on NPO</u>	<u>ARC Adjustment</u>	<u>Annual Pension Cost (APC)</u>	<u>Total Employer Contributions</u>	<u>Change in NPO</u>	<u>NPO Balance</u>	<u>Gain/Loss</u>	<u>Amort. Factor</u>	<u>Amort. Of Gain/Loss</u>	<u>Ending Balance</u>
December 31, 2003	34,100,457	(5,744,603)	3,556,673	31,882,527	34,200,693	(2,318,166)	(74,500,706)	(100,236)	19.05650	(3,556,673)	(74,500,706)
December 31, 2004	36,681,697	(5,773,805)	4,012,944	34,920,836	36,681,697	(1,760,861)	(76,261,567)	-	18.49780	(4,012,944)	(76,261,567)
December 31, 2005	35,897,345	(5,910,271)	4,107,791	34,094,865	35,897,345	(1,802,480)	(78,064,047)	-	18.49780	(4,107,791)	(78,064,047)
December 31, 2006	37,939,358	(6,049,964)	5,865,455	37,754,849	37,939,358	(184,509)	(78,248,556)	-	13.30912	(5,865,455)	(78,248,556)
December 31, 2007	40,299,506	(6,064,263)	5,879,319	40,114,562	40,299,506	(184,944)	(78,433,500)	-	13.30912	(5,879,319)	(78,433,500)

Amortization Period: Open 30 years, unless fixed rate amortizes in less than 30 years.

Amortization Method: Level Percentage of Projected Payroll.



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## San Mateo County Employees' Retirement Association

### Section 7 Actuarial Gains or Losses

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An analysis of actuarial gains or losses was performed in conjunction with the January 1, 2004, January 1, 2006 and January 1, 2008 actuarial valuations.

The results of our analysis of the financial experience of the System in the three most recent actuarial valuations are presented in Table 13. Each gain or loss shown represents our estimate of how much the given type of experience caused the UAAL to change in the two-year period since the previous actuarial valuation.

Gains and losses due to demographic sources are approximate. Demographic experience is analyzed in greater detail in our periodic assumption studies.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 13 Analysis of Actuarial Gains or Losses**

(All dollar amounts in millions)\*

	Gain (Loss) for Period		
	2006-2007	2004-2005	2002-2003
<b>Investment Income.</b> Investment income was greater (less) than expected.	\$93.7	\$ 54.5	\$ (64.0)
<b>Pay Increases.</b> Pay increases were less (greater) than expected.	(15.2)	23.0	16.1
<b>Age and Service Retirements.</b> Members retired at older (younger) ages or with less (greater) final average pay than expected.	2.8	(6.2)	(14.5)
<b>Disability Retirements.</b> Disability claims were less (greater) than expected.	(0.4)	(0.3)	(0.5)
<b>Death-in-Service Benefits.</b> Survivor claims were less (greater) than expected.	0.0	0.9	(0.5)
<b>Withdrawal from Employment.</b> More (less) reserves were released by withdrawals than expected.	7.4	(8.1)	14.0
<b>Death after Retirement.</b> Retirees died younger (lived longer) than expected.	<u>(12.8)</u>	<u>(8.3)</u>	<u>0.4</u>
<b>Total Gain or (Loss) during Period from Financial Experience.</b>	\$75.6	\$ 55.5	\$ (49.0)
<b>Nonrecurring Items:</b>			
Changes in actuarial assumptions and plan amendments caused a gain (loss).	(43.6)	(17.9)	(0.9)
Change in actuarial asset valuation method caused a gain (loss).	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<b>Composite Gain (Loss) during Period.</b>	\$32.0	\$ 37.6	\$ (49.9)

\* Effects related to losses are shown in parentheses. Numerical results are expressed as a decrease (increase) in the UAAL.

## Seattle City Employees' Retirement System Actuarial Valuation

### Section 8 Impact of Future Contingent COLAS

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As discussed in Section 1, increased Cost-of-Living Adjustments (COLA's) will become effective when the funding ratio increases to a certain level. Since it is unknown at what point in the future this will occur, the cost of these COLA's is not included in the actuarial valuation. To give the Board an idea of the potential impact of these changes, Table 14 shows the cost if these adjustments were to have been adopted on January 1, 2008. The actual cost will vary depending on when the System reaches the required level of funding.

When the System reaches the 100% funding ratio, the 70% Floor COLA will become effective.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table 14**      **Summary of Impact of Future Contingent COLAs**  
(All dollar amounts in millions)

	January 1, 2008 Actuarial Valuation	
	Current Provisions	With Potential Change
Floor COLA	65%	70%
Funding Ratio Threshold	N/A	100%
Normal Cost Rate (with Expenses)	13.32%	13.41%
<i>Change from valuation</i>		0.09%
Actuarial Accrued Liability	\$2,294.6	\$2,324.8
<i>Change from valuation</i>		\$30.2

*NOTE: The information shown above is based on the benefit provisions that were adopted by the City Council but which will not become effective until SCERS reaches a 100% Funding Ratio. This information is for disclosure purposes only and assumes that the benefits were effective on January 1, 2008.*

# Seattle City Employees' Retirement System Actuarial Valuation

## Appendix A Actuarial Procedures and Assumptions

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This section of the report describes the actuarial procedures and assumptions used in this valuation. The assumptions used in this valuation were adopted by the SCERS Board at their May, 2008 meeting.

The actuarial assumptions used in the valuation are intended to estimate the future experience of the members of the System and of the System itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the System's benefits. Table A-1 summarizes the actuarial assumptions.

Table A-2 presents expected annual salary increases for various years of service. Tables A-3 through A-6 show rates of decrement for service retirement, disablement, mortality, and other terminations of employment. Table A-7 shows probabilities of vesting upon termination.

### Actuarial Cost Method

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the unfunded actuarial accrued liability or UAAL. The UAAL is amortized as a level percentage of the projected salaries of present and future members of the System.

<b>Records and Data</b>	The data used in the valuation consist of financial information; records of age, sex, service, salary, and contribution rates and account balances of contributing members; and records of age, sex, and amount of benefit for retired members and beneficiaries. All of the data were supplied by the System and are accepted for valuation purposes without audit.
<b>Replacement of Terminated Members</b>	The ages at entry and distribution by sex of future members are assumed to average the same as those of the present members they replace. If the number of active members should increase, it is further assumed that the average entry age of the larger group will be the same, from an actuarial standpoint, as that of the present group. Under these assumptions, the normal cost rates for active members will not vary with the termination of present members.
<b>Employer Contributions</b>	At the time of this valuation, the total employer contribution rate for normal costs and amortization of the UAAL was 8.03% of members' salaries.
<b>Administrative Expense</b>	The annual contribution assumed to be necessary to meet general administrative expenses of the system, excluding investment expenses, is 0.40% of members' salaries. This figure is included in the calculation of the normal cost rate.
<b>Valuation of Assets</b>	All assets are valued at market as of the valuation date, January 1, 2008.
<b>Investment Earnings</b>	The annual rate of investment earnings of the assets of the System is assumed to be 7.75%. This rate is compounded annually and is net of investment expenses.
<b>Postretirement Benefit Increases</b>	Postretirement benefit increases include: <ul style="list-style-type: none"><li>■ Automatic 1.5% Annual COLA – This benefit applies to all members.</li><li>■ 65% Restoration of Purchasing Power (ROPP) – The member's benefit is the greater of 65% of the annual initial benefit adjusted for CPI or their applicable benefit. This minimum benefit is available to all retirees and beneficiaries. The financial impact of the ROPP benefit is valued assuming an annual price inflation rate of 3.5%.</li></ul>

<b>Postretirement Benefit Increases (continued)</b>	Additional contingent COLA increases that were adopted in 2001, but not effective until the System reaches at least a 100% funding ratio, are not included in the valuation results.
<b>Future Salaries</b>	Table A-2 illustrates the rates of future salary increases assumed for the purpose of the valuation. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 4.0% per annum rate of increase in the general wage level of the membership.
<b>Service Retirement</b>	Table A-3 shows the annual assumed rates of retirement among members eligible for service retirement or reduced retirement. Separate rates are also used during the first year a member is eligible for service retirement.
<b>Disablement</b>	The rates of disablement used in this valuation are illustrated in Table A-4. It is assumed that one-third of all disabilities are duty related and two-thirds occur while off duty.
<b>Mortality</b>	The mortality rates used in this valuation are illustrated in Table A-5. A written description of each table used is included in Table A-1.
<b>Other Terminations of Employment</b>	The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table A-6. Note that this assumption only applies to members who terminate and are not yet eligible for retirement.
<b>Probability of Refund</b>	<p>Terminating members may forfeit a vested right to a deferred benefit if they elect a refund of their accumulated contributions. Table A-7 gives the assumed probability, at selected ages, that a terminating member will elect to receive a refund of his accumulated contributions instead of a deferred benefit.</p> <p>If a member terminates with more than 20 years of service, there is assumed to be a 20% probability that the member will elect a refund.</p> <p>Note that the probability of refund assumption only applies to members who terminate with a vested benefit and are not yet eligible for retirement.</p>
<b>Interest on Member Contributions</b>	Interest on member contributions is assumed to accrue at a rate of 5.75% per annum, compounded annually.

<b>Portability</b>	The cost of portability with other public retirement systems is not included in this valuation.
<b>Probability of Marriage</b>	We assumed 60% of the active members are married or have a registered domestic partner.
<b>Commencement for Terminated Vested Members</b>	Vested members who terminate but elect to leave their contributions in the System are assumed to commence receiving benefits at age 62.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table A-1 Summary of Valuation Assumptions as of January 1, 2008**

I. Economic assumptions		
A. Price inflation		3.50%
B. General wage increases		4.00
C. Investment return		7.75
D. Increase in membership		0.00
E. Interest on member accounts		5.75
II. Demographic assumptions		
A. Salary increases due to promotion and longevity		Table A-2
B. Retirement		Table A-3
C. Disablement		Table A-4
D. Mortality among contributing members		Table A-5
Men	50% of the rates from the 1994 Group Annuity Mortality (GAM) Table for Males, with ages set forward one year.	
Women	75% of the rates from the 1994 GAM Table for Females, with ages set forward one year.	
E. Mortality among service retired members and beneficiaries		Table A-5
Men	1994 GAM Table for Males, with ages set forward one year.	
Women	1994 GAM Table for Females, with no age adjustment.	
F. Mortality among disabled members		Table A-5
	1992 Railroad Retirement Board Disabled Annuitants Ultimate Mortality Table, with ages set back four years (minimum rate of 2%).	
G. Other terminations of employment		Table A-6
H. Probabilities of vesting on termination		Table A-7

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table A-2 Future Salaries**

<b>Annual Rate of Increase</b>		
<b>Years of Service</b>	<b>Promotion and Longevity</b>	<b>Total</b>
0 to 1	5.75%	9.98%
1 to 2	4.75	8.94
2 to 3	3.75	7.90
3 to 4	2.75	6.86
4 to 5	2.25	6.34
9 to 10	1.00	5.04
14 to 15	0.50	4.52
19 to 20	0.29	4.30
24 to 25	0.25	4.26
29 to 30	0.25	4.26
35 or more	0.25	4.26

## Seattle City Employees' Retirement System Actuarial Valuation

**Table A-3 Retirement**

Age	Annual Probability					
	Men			Women		
	Eligible for Full Benefits			Eligible for Full Benefits		
	Eligible for Reduced Benefits	Less than 30 years of service	30 years or more of service	Eligible for Reduced Benefits	Less than 30 years of service	30 years or more of service
Less than 50	0.0%	10.0%	8.0%	0.0%	10.0%	10.0%
50	6.0	10.0	10.0	5.0	10.0	12.0
51	6.0	10.0	10.0	5.0	10.0	12.0
52	6.0	12.0	12.0	5.0	12.0	12.0
53	6.0	10.0	12.0	5.0	12.0	12.0
54	6.0	10.0	12.0	5.0	12.0	15.0
55	6.0	12.0	15.0	5.0	12.0	20.0
56	6.0	10.0	12.0	5.0	12.0	15.0
57	6.0	10.0	12.0	5.0	12.0	15.0
58	6.0	10.0	15.0	6.0	15.0	15.0
59	7.0	12.0	15.0	8.0	15.0	15.0
60	10.0	18.0	20.0	10.0	18.0	20.0
61	15.0	18.0	20.0	14.0	18.0	20.0
62	18.0	35.0	35.0	24.0	35.0	35.0
63	15.0	25.0	25.0	15.0	25.0	25.0
64	15.0	25.0	25.0	15.0	25.0	25.0
65		50.0	50.0		50.0	50.0
66		30.0	30.0		30.0	30.0
67		30.0	30.0		30.0	30.0
68		30.0	30.0		30.0	30.0
69		30.0	30.0		30.0	30.0
70		*	*		*	*

\* Immediate retirement is assumed for every person age 70 or over.

## Seattle City Employees' Retirement System Actuarial Valuation

**Table A-4    Disablement\***

Age	Annual Rates	
	Men	Women
20	.00%	.00%
25	.00	.00
30	.05	.05
35	.05	.05
40	.07	.07
45	.07	.07
50	.10	.10
55	.10	.10
60	.10	.10
65	.00	.00

*\*It is assumed that one-third of all disabilities are duty related and two-thirds are non-duty related.*

## Seattle City Employees' Retirement System Actuarial Valuation

**Table A-5 Mortality**

Age	Annual Probability				
	Contributing Members		Members Retired for Service and Beneficiaries of Members		Disabled Members
	Men	Women	Men	Women	Men & Women
22	.03%	.02%	.06%	.03%	2.00%
27	.04	.02	.08	.03	2.00
32	.04	.03	.08	.04	2.00
37	.05	.04	.09	.06	2.00
42	.07	.07	.14	.08	2.00
47	.11	.09	.21	.11	2.00
52	.18	.14	.36	.17	2.00
57	.32	.25	.63	.29	2.00
62	.58	.50	1.15	.58	2.00
67	1.00	.89	1.99	1.08	3.40
72	N/A	N/A	3.12	1.65	5.52
77	N/A	N/A	5.02	2.84	8.56
82	N/A	N/A	8.25	4.92	12.75
87	N/A	N/A	12.70	8.40	18.30
92	N/A	N/A	19.84	14.20	25.43

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table A-6 Other Terminations of Employment Among Members Not Eligible to Retire**

Years of Service	Annual Rates for Men	Annual Rates for Women
0 to 1	11.0%	13.0%
1 to 2	10.0	12.0
2 to 3	9.0	10.0
3 to 4	8.0	9.0
4 to 5	7.0	8.0
5 to 6	6.0	7.0
6 to 7	5.3	6.3
7 to 8	4.6	5.7
8 to 9	4.0	5.1
9 to 10	3.5	4.5
10 to 11	3.1	4.0
11 to 12	2.8	3.5
12 to 13	2.5	3.0
13 to 14	2.3	2.6
14 to 15	2.0	2.3
15 to 16	1.8	2.0
16 to 17	1.6	1.8
17 to 18	1.4	1.5
18 to 19	1.3	1.3
19 to 20	1.1	1.1
20 to 21	1.0	1.0
21 to 22	0.9	0.9
22 to 23	0.9	0.9
23 to 24	0.8	0.8
24 to 25	0.8	0.8
25 to 26	0.7	0.7
26 to 27	0.7	0.7
27 to 28	0.6	0.6
28 to 29	0.6	0.6
29 to 30	0.5	0.5
30 and up	0.5	0.5

## Seattle City Employees' Retirement System Actuarial Valuation

**Table A-7 Probability of Refund**

Age	Probabilities of Refund upon Termination*
25	85.0%
30	75.0
35	65.0
40	55.0
45	45.0
50	40.0
55	35.0
60	30.0

*\*If service is 20 or more years at termination,  
probability of refund is equal to 20%.*



## Seattle City Employees' Retirement System Actuarial Valuation

### Appendix B Provisions of Governing Law

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All actuarial calculations are based upon our understanding of the provisions governing the Seattle City Employees' Retirement System, Chapter 4.36 of the Seattle City Code. The benefit and contribution provisions are summarized briefly below, along with corresponding references to the City code. This summary encompasses the major provisions of the System; it does not attempt to cover all of the detailed provisions.

#### Effective Date

The effective date of the retirement system was July 1, 1929.  
(Section 4.36.080)

#### Members' Contribution Rate

The members' contribution rate is currently 8.03% of salary. Certain members who were contributing at a lower rate on June 23, 1972 continue to contribute at a lower rate.  
(Section 4.36.110A)

#### City Contribution Rate

The City contribution rate is the amount that is actuarially determined to be necessary to fund that portion of the retirement allowances not covered by the members' contributions. This amount shall be at least the members' contribution rate and is currently 8.03%.  
(Sections 4.36.110C and 4.36.170)

#### Final Compensation

Final compensation is based on highest average compensation (excluding overtime) during any consecutive 24 months.  
(Sections 4.36.040C and 4.36.050B)

#### Service Retirement

*Eligibility* 30 years of service;  
Age 52 and 20 years of service;  
Age 57 and 10 years of service; or  
Age 62 and 5 years of service.

*Normal Form* Straight life benefit.

*Optional Forms* Actuarial equivalent according to the mortality and interest basis adopted by the Retirement Board for such purposes.

**Service Retirement  
(continued)**

*Amount of Allowance* The total monthly allowance is generally 2% times final compensation times total years of creditable service.

However, if the member does not qualify in one of the following ways, the 2% factor is reduced by 0.1% for each year that retirement precedes the earliest date the member would be:

- (a) any age with 30 years of service;
- (b) age 51-59, providing the member's age and years of service total 80 or more;
- (c) age 60 or older with 20 years of service; or
- (d) age 65 or older with 5 years of service.

The reduction is somewhat less than 0.1% for members with less than 20 years of service.

For those hired on or after January 1, 1988, creditable service excludes the first six months of service.

*Maximum Allowance* The retirement allowance of any member shall be limited to 60% of final compensation.

*Minimum Allowance* A monthly benefit based on twice the actuarial value of accumulated member contributions. This is not subject to the 60% of final compensation maximum.

(Sections 4.36.200, 4.36.210 and 4.36.260)

<b>Disability Retirement</b>	<i>Eligibility</i>	Ten years of service credited within the 15 years preceding disability retirement. If disablement occurs in the course of City employment, there is no service requirement.
	<i>Normal Form</i>	Modified cash refund annuity. An optional survivor's benefit is available if the spouse is the beneficiary.
	<i>Amount of Allowance</i>	The total monthly disability allowance is the greater of: <ul style="list-style-type: none"> <li>(a) 1.5% times final compensation times completed years of creditable service; and</li> <li>(b) 1.5% times final compensation times total years of creditable service that could have been earned to age 62, but not to exceed one-third of final compensation.</li> </ul>
	<i>Maximum Allowance</i>	The maximum disability allowance is 60% of final compensation.
	<i>Minimum Allowance</i>	The minimum disability allowance is \$140 per month. (Sections 4.36.220 and 4.36.230)

<b>Death Benefits</b>	<i>Retired Members</i>	Death benefits to retired members are payable according to the form of retirement allowance elected.
	<i>Active Members</i>	<ul style="list-style-type: none"> <li>(a) Payment to the beneficiary of accumulated contributions, including interest; or</li> <li>(b) If the member had completed 10 years of service at the time of death, a surviving spouse or a registered domestic partner may elect to receive, in place of (a) above, either: <ul style="list-style-type: none"> <li>(1) a monthly allowance for life equal to the benefit the spouse would have received had the member just retired with a 100% contingent annuitant option in force; or</li> <li>(2) a cash payment of no more than one-half of the member's accumulated contributions, along with a correspondingly reduced retirement allowance.</li> </ul> </li> </ul> <p style="text-align: center;">(Section 4.36.270)</p>

<b>Withdrawal Benefits</b>	<i>Form</i>	Payment of accumulated contributions, with interest. (Section 4.36.190)
<b>Vested Withdrawal Benefits</b>	<i>Eligibility</i>	Five years of service.
	<i>Amount of Allowance</i>	Same as service retirement benefit.
	<i>Benefits Commence</i>	Age 52, if 20 or more years of service;  Age 57, if 10 - 19 years of service; or  Age 62, otherwise. (Section 4.36.200)
<b>Postretirement Benefit Increases</b>	<i>Provisions</i>	Effective January 1, 2007, the City Council adopted a 65% Restoration of Purchasing Power benefit and an automatic 1.5% annual COLA to all members.  If the System reaches a 100% funding ratio, the restoration amount increases to 70%. (Sections 4.36.155 and 4.36.215)
<b>Death Benefit System</b>	<i>Eligibility</i>	Mandatory for all active members; optional for retired members.
	<i>Benefits</i>	\$2,000 upon the death of an active member or a participating retired member.
	<i>Assessment</i>	Members pay an assessment of \$12 per year; the City pays a matching amount. If these assessments are not adequate, additional amounts may be transferred from the interest earnings in the retirement fund. (Sections 4.36.320 and 4.36.330)
<b>Additional Contributions</b>	<i>Provisions</i>	Members may voluntarily make contributions in excess of the regular 8.03% rate.
	<i>Retirement Benefit</i>	A monthly annuity which is the actuarial equivalent of accumulated additional contributions with interest.
	<i>Other Benefits</i>	Accumulated additional contributions, with interest, generally become payable upon termination other than retirement. (Sections 4.36.030 and 4.36.210)

## Seattle City Employees' Retirement System Actuarial Valuation

### Appendix C Valuation Data

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This valuation is based upon the membership of the system as of January 1, 2007. Membership data were supplied by the System and accepted for valuation purposes without audit. However, extensive tests were performed to ensure that the data are sufficiently accurate for valuation purposes.

The data for all contributing members, former contributing members, and their survivors are summarized in Table C-1.

Tables C-2 through C-4 present distributions of members receiving service retirement benefits, members receiving disability retirement benefits, and survivors receiving benefits. Shown in the tables are the numbers of persons receiving benefits, the total annual benefits received (including payments for the annual bonus), and the average annual benefit per recipient.

Table C-5 contains summaries of the data for contributing members. Values shown in the tables are the numbers of members and their total and average annual salaries.

The valuation also includes liabilities attributable to members who have terminated employment but have neither retired nor withdrawn their contributions. There are 2,050 such members.

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Table C-1 Summary of Membership Data**

	Contributing Members			Annuitants		
	Number	Annual Salaries (\$1,000)	Average Annual Salaries	Number	Annual Benefits (\$1,000)	Average Annual Benefits
January 1, 2008	8,842	529,062	59,835	5,201	102,772	19,760
January 1, 2006	8,521	468,096	54,934	5,011	83,988	16,761
January 1, 2004	8,382	441,562	52,680	4,876	74,341	15,246
January 1, 2002	8,758	418,908	47,831	4,733	61,801	13,058
January 1, 2000	8,669	382,620	44,137	4,681	55,542	11,865
January 1, 1999	7,779	333,984	42,934	4,644	52,482	11,301
January 1, 1998	7,926	329,028	41,512	4,649	50,394	10,840
January 1, 1996	8,078	314,448	38,926	4,619	44,271	9,585



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**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Inactive Lives**

**Table C-2 Members Receiving Service Retirement Benefits as of January 1, 2008**

	<u>&lt;50</u>	<u>50-54</u>	<u>55-59</u>	<u>60-64</u>	<u>65-69</u>	<u>70-74</u>	<u>75-79</u>	<u>80-84</u>	<u>85-89</u>	<u>90+</u>	<u>Totals</u>
<b>Number of Persons</b>											
Male	0	27	206	490	479	423	319	326	291	102	2,663
Female	1	25	185	315	248	200	163	166	160	104	1,567
<b>Total</b>	<b>1</b>	<b>52</b>	<b>391</b>	<b>805</b>	<b>727</b>	<b>623</b>	<b>482</b>	<b>492</b>	<b>451</b>	<b>206</b>	<b>4,230</b>
<b>Annual Benefits in Thousands</b>											
Male	0	837	6,311	13,947	12,221	9,236	6,730	6,512	5,009	1,557	62,360
Female	18	681	5,197	7,256	4,657	3,463	2,435	1,951	1,523	883	28,064
<b>Total</b>	<b>18</b>	<b>1,518</b>	<b>11,508</b>	<b>21,203</b>	<b>16,878</b>	<b>12,699</b>	<b>9,165</b>	<b>8,463</b>	<b>6,532</b>	<b>2,440</b>	<b>90,424</b>
<b>Average Annual Benefits</b>											
Male		31,000	30,636	28,463	25,514	21,835	21,097	19,975	17,213	15,265	23,417
Female	18,000	27,240	28,092	23,035	18,778	17,315	14,939	11,753	9,519	8,490	17,909
<b>Total</b>	<b>18,000</b>	<b>29,192</b>	<b>29,432</b>	<b>26,339</b>	<b>23,216</b>	<b>20,384</b>	<b>19,015</b>	<b>17,201</b>	<b>14,483</b>	<b>11,845</b>	<b>21,377</b>



**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Inactive Lives**

**Table C-3 Members Receiving Disability Retirement Benefits as of January 1, 2008**

	<u>&lt;50</u>	<u>50-54</u>	<u>55-59</u>	<u>60-64</u>	<u>65-69</u>	<u>70-74</u>	<u>75-79</u>	<u>80-84</u>	<u>85-89</u>	<u>90+</u>	<u>Totals</u>
<b>Number of Persons</b>											
Male	1	4	3	6	4	4	4	6	4	2	38
Female	4	11	6	1	4	2	2	0	3	1	34
Total	5	15	9	7	8	6	6	6	7	3	72
<b>Annual Benefits in Thousands</b>											
Male	26	59	43	86	43	44	49	51	36	16	453
Female	52	196	125	8	37	21	22	0	22	6	489
Total	78	255	168	94	80	65	71	51	58	22	942
<b>Average Annual Benefits</b>											
Male	26,000	14,750	14,333	14,333	10,750	11,000	12,250	8,500	9,000	8,000	11,921
Female	13,000	17,818	20,833	8,000	9,250	10,500	11,000		7,333	6,000	14,382
Total	15,600	17,000	18,667	13,429	10,000	10,833	11,833	8,500	8,286	7,333	13,083



**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Inactive Lives**

**Table C-4 Survivors Receiving Retirement Benefits as of January 1, 2008\***

	<u>&lt;50</u>	<u>50-54</u>	<u>55-59</u>	<u>60-64</u>	<u>65-69</u>	<u>70-74</u>	<u>75-79</u>	<u>80-84</u>	<u>85-89</u>	<u>90+</u>	<u>Totals</u>
Number of Persons											
Male	0	7	3	4	7	1	6	2	7	3	40
Female	9	11	23	45	37	53	100	166	191	152	787
Total	9	18	26	49	44	54	106	168	198	155	827
Annual Benefits in Thousands											
Male	0	93	30	83	61	9	55	16	42	17	406
Female	110	177	319	738	486	839	1,271	2,181	2,276	1,495	9,892
Total	110	270	349	821	547	848	1,326	2,197	2,318	1,512	10,298
Average Annual Benefits											
Male		13,286	10,000	20,750	8,714	9,000	9,167	8,000	6,000	5,667	10,150
Female	12,222	16,091	13,870	16,400	13,135	15,830	12,710	13,139	11,916	9,836	12,569
Total	12,222	15,000	13,423	16,755	12,432	15,704	12,509	13,077	11,707	9,755	12,452

\* In addition, 27 male survivors are receiving \$312,743 and 45 female survivors are receiving \$781,819 in Option B or Option C benefits for a certain period only.

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Active Lives**

**Table C-5 Distribution of Employees and Salaries as of January 1, 2008**

**Number of Employees - By Age Group - Males**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0		22	47	37	34	34	24	23	10	10	2		243
1	1	32	62	66	50	42	34	38	25	9	2	2	363
2	1	11	37	38	54	41	35	27	24	11	3		282
3-4		13	46	65	82	73	81	55	33	17	5	2	472
5-9		3	38	121	160	196	186	180	134	67	20	7	1,112
10-14			1	9	79	106	100	119	84	43	17	7	565
15-19					14	82	133	145	113	64	15	8	574
20-24						12	70	117	141	53	14	5	412
25-29						1	47	112	126	59	10	1	356
30-34							5	45	65	61	12	3	191
35-39								3	26	40	19	4	92
40+									2	7	12	4	25
<b>Totals</b>	<b>2</b>	<b>81</b>	<b>231</b>	<b>336</b>	<b>473</b>	<b>587</b>	<b>715</b>	<b>864</b>	<b>783</b>	<b>441</b>	<b>131</b>	<b>43</b>	<b>4,687</b>

**Monthly Salaries in Thousands - By Age Group - Males**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0		77	188	162	145	176	108	135	56	61	14		1,122
1	2	102	242	291	245	214	174	205	114	41	7	8	1,645
2	1	35	144	169	267	178	174	106	114	59	5		1,252
3-4		31	180	295	386	360	420	252	177	89	18	2	2,210
5-9		5	137	543	863	1,018	984	952	700	341	100	20	5,663
10-14			5	34	407	571	538	604	484	236	83	32	2,994
15-19					71	440	719	838	625	346	80	38	3,157
20-24						68	412	684	830	308	82	27	2,411
25-29						5	282	695	788	356	56	6	2,188
30-34							27	252	385	355	67	16	1,102
35-39								17	177	232	113	18	557
40+									11	43	66	20	140
<b>Totals</b>	<b>3</b>	<b>250</b>	<b>896</b>	<b>1,494</b>	<b>2,384</b>	<b>3,030</b>	<b>3,838</b>	<b>4,740</b>	<b>4,461</b>	<b>2,467</b>	<b>691</b>	<b>187</b>	<b>24,441</b>



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**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Active Lives**

**Table C-5 Distribution of Employees and Salaries as of January 1, 2008**

**Average Monthly Salaries - By Age Group - Males**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0		3,500	4,000	4,378	4,265	5,176	4,500	5,870	5,600	6,100	7,000		4,617
1	2,000	3,188	3,903	4,409	4,900	5,095	5,118	5,395	4,560	4,556	3,500	4,000	4,532
2	1,000	3,182	3,892	4,447	4,944	4,341	4,971	3,926	4,750	5,364	1,667		4,440
3-4		2,385	3,913	4,538	4,707	4,932	5,185	4,582	5,364	5,235	3,600	1,000	4,682
5-9		1,667	3,605	4,488	5,394	5,194	5,290	5,289	5,224	5,090	5,000	2,857	5,093
10-14			5,000	3,778	5,152	5,387	5,380	5,076	5,762	5,488	4,882	4,571	5,299
15-19					5,071	5,366	5,406	5,779	5,531	5,406	5,333	4,750	5,500
20-24						5,667	5,886	5,846	5,887	5,811	5,857	5,400	5,852
25-29						5,000	6,000	6,205	6,254	6,034	5,600	6,000	6,146
30-34							5,400	5,600	5,923	5,820	5,583	5,333	5,770
35-39								5,667	6,808	5,800	5,947	4,500	6,054
40+									5,500	6,143	5,500	5,000	5,600
Totals	1,500	3,086	3,879	4,446	5,040	5,162	5,368	5,486	5,697	5,594	5,275	4,349	5,215



**Table C-5  
(continued)**

**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Active Lives**

**Table C-5 Distribution of Employees and Salaries as of January 1, 2008**

**Number of Employees - By Age Group - Females**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	1	17	48	27	28	34	25	19	10	6			215
1	1	27	62	62	50	39	34	30	32	9			346
2		19	34	49	40	34	31	31	21	9			268
3-4	1	11	42	73	63	43	55	35	25	21	5		374
5-9		5	39	97	136	150	158	151	93	60	18	10	917
10-14				15	57	83	98	76	60	38	17	1	445
15-19				1	32	101	132	135	134	66	13	7	621
20-24					2	17	97	132	140	58	5	2	453
25-29							41	100	99	49	18	2	309
30-34							4	46	67	32	9	5	163
35-39									14	18	4		36
40+										5	3		8
Totals	3	79	225	324	408	501	675	755	695	371	92	27	4,155

**Monthly Salaries in Thousands - By Age Group - Females**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	2	54	178	124	134	154	110	89	59	26			930
1	2	76	241	264	232	176	145	139	154	33			1,462
2		46	106	190	178	147	132	171	100	32			1,102
3-4	1	23	137	325	296	220	248	164	110	92	9		1,625
5-9		13	138	419	641	760	774	787	430	276	50	17	4,305
10-14				54	266	393	494	401	300	179	64	1	2,152
15-19				3	125	508	641	708	665	309	64	23	3,046
20-24					6	76	496	718	760	316	27	7	2,406
25-29							223	520	494	261	96	9	1,603
30-34							19	210	338	171	36	21	795
35-39									63	101	22		186
40+										21	13		34
Totals	5	212	800	1,379	1,878	2,434	3,282	3,907	3,473	1,817	381	78	19,646



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**Seattle City Employees' Retirement System  
Actuarial Valuation**

**Active Lives**

**Table C-5 Distribution of Employees and Salaries as of January 1, 2008**

**Average Monthly Salaries - By Age Group - Females**

Nearest Year of Service	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Totals
0	2,000	3,176	3,708	4,593	4,786	4,529	4,400	4,684	5,900	4,333			4,326
1	2,000	2,815	3,887	4,258	4,640	4,513	4,265	4,633	4,813	3,667			4,225
2		2,421	3,118	3,878	4,450	4,324	4,258	5,516	4,762	3,556			4,112
3-4	1,000	2,091	3,262	4,452	4,698	5,116	4,509	4,686	4,400	4,381	1,800		4,345
5-9		2,600	3,538	4,320	4,713	5,067	4,899	5,212	4,624	4,600	2,778	1,700	4,695
10-14				3,600	4,667	4,735	5,041	5,276	5,000	4,711	3,765	1,000	4,836
15-19				3,000	3,906	5,030	4,856	5,244	4,963	4,682	4,923	3,286	4,905
20-24					3,000	4,471	5,113	5,439	5,429	5,448	5,400	3,500	5,311
25-29							5,439	5,200	4,990	5,327	5,333	4,500	5,188
30-34							4,750	4,565	5,045	5,344	4,000	4,200	4,877
35-39									4,500	5,611	5,500		5,167
40+										4,200	4,333		4,250
<b>Totals</b>	<b>1,667</b>	<b>2,684</b>	<b>3,556</b>	<b>4,256</b>	<b>4,603</b>	<b>4,858</b>	<b>4,862</b>	<b>5,175</b>	<b>4,997</b>	<b>4,898</b>	<b>4,141</b>	<b>2,889</b>	<b>4,728</b>







<b>Actuarially Equivalent</b>	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
<b>Amortization Payment</b>	That portion of the pension plan contribution that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability or (UAAL).
<b>Entry Age Actuarial Cost Method</b>	A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.
<b>Normal Cost</b>	That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.
<b>Projected Benefits</b>	Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.
<b>Surplus Funding</b>	The excess of the Actuarial Value of Assets over the Actuarial Accrued Liability.
<b>Unaccrued Benefit</b>	The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.
<b>Unfunded Actuarial Accrued Liability</b>	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.