

## GABRIEL, ROEDER, SMITH & COMPANY

Consultants & Actuaries

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May 12, 2005

Mr. Stephen Edmonds Executive Director City of Austin Employees' Retirement System 418 E. Highland Mall Blvd. Austin, TX 78752

Dear Mr. Edmonds:

## Subject: Actuarial Valuation as of December 31, 2004

We are pleased to present our report on the actuarial valuation of the City of Austin Employees' Retirement System. Based upon this actuarial valuation as of December 31, 2004, it is our opinion that these results reasonably reflect the funded status of the System.

As you know, the employee and employer contribution rates are set by statute. It is expected that these contribution rates will remain level as a percentage of payroll. The funding objective of the plan is for the contribution rates to be sufficient to cover the normal cost of the plan and to amortize any unfunded actuarial accrued liabilities over a period not to exceed 30 years. Due to continued recognition of the significant asset losses from 2000, 2001 and 2002, the plan's contribution rate is not sufficient to amortize the System's unfunded liabilities. Therefore, the funding objective is not currently being met.

In addition to the actuarial valuation results, various accounting and statistical tables are also included which should help you compare the results of this plan year with prior years. The information presented in the trend data schedules of this report has been prepared by Gabriel, Roeder, Smith & Company. The information for years 1993 through 2000 was prepared by Watson Wyatt & Company. Information in these schedules prior to 1993 was determined by another actuarial firm.

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. These assumptions were last changed in 2002, following an analysis of the plan experience for the preceding five years. We believe the assumptions are internally consistent and are reasonable, based on the actual experience of COA ERS.

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

Mr. Stephen Edmonds May 12, 2005 Page 2

Member data for retired, active and inactive participants was supplied as of December 31, 2004, by the City of Austin Employees' Retirement System staff. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was also supplied by the City of Austin Employees' Retirement System staff.

The following tables contained in the actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company and will be included in the COA ERS 2004 actuarial section:

- Table 1Summary of Cost Items
- Table 2Analysis of Normal Cost by Component
- Table 3
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- Table 4Development of Actuarial Value of Assets
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- Table 16Definition of Terms
- Table 17 Distribution of All Active Participants by Age and Length of Service
- Table 18
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- Table 20 Distribution of Retired Members by Type of Benefit
- Table 21Schedule of Participating Employers
- Table 22Benefit Expenses by Type

We would like to thank you and your staff for their assistance in providing all necessary information to complete this valuation. Their courteous help is very much appreciated.

We look forward to discussing this actuarial valuation report with you at your convenience. Please do not hesitate to let us know if you have any questions or need additional information.

Sincerely,

W Maha Cat

Michael Carter, FSA, MAAA Senior Consultant

Lewis Ward

Lewis Ward Consultant

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## **EXECUTIVE SUMMARY**

The key results from the valuation of the City of Austin Employees' Retirement System as of December 31, 2004, may be summarized as follows:

	De	cember 31, 2004	Dee	cember 31, 2003
		(1)		(2)
• Members				
— Actives		7,489		7,432
- Retirees and beneficiaries		3,137		2,995
- Vested - terminated		612		624
— Total		11,238		11,051
Covered payroll	\$	326,590,164	\$	312,790,966
Normal cost	\$	48,513,730	\$	45,338,049
— As % of payroll		14.39%		14.32%
<ul> <li>Actuarial accrued liability</li> </ul>	\$	1,678,181,243	\$	1,551,830,802
Present actuarial value of assets	\$	1,356,797,448	\$	1,348,790,502
• Unfunded actuarial accrued liability (UAAL)	\$	321,383,795	\$	203,040,300
<ul> <li>Estimated yield on assets</li> </ul>				
— Actuarial value basis		2.74%		10.13%
— Market value basis		11.57%		23.77%
Contribution rate				
— Employee		8.00%		8.00%
— Employer		8.00%		8.00%
<ul> <li>Benefit and refund payments</li> </ul>	\$	87,814,171	\$	82,693,239
• Amortization period of unfunded actuarial accrued		Infinite		Infinite
liability				
GASB No. 25 disclosure				
— UAAL as a % of Payroll		98.4%		64.9%
— GASB funded ratio		80.8%		86.9%
- GASB Annual Required Contribution (ARC)*		12.27%		9.72%

\* December 31, 2004 ARC is based on 30-year amortization, December 31, 2003 ARC was based on 40-year amortization

## GABRIEL, ROEDER, SMITH & COMPANY

## **INTRODUCTION**

This December 31, 2004, actuarial valuation of the City of Austin Employees' Retirement System has been prepared by Gabriel, Roeder, Smith & Company. The primary purpose of the valuation is to value the liabilities of the System as of December 31, 2004, determine the funding period of any unfunded liability for the plan year beginning January 1, 2005, and to provide certain required disclosure information. We are pleased to have the privilege of working for the Board, and look forward to discussing the results with you at your convenience.

The last actuarial valuation of the City of Austin Employees' Retirement System was prepared as of December 31, 2003 by Gabriel, Roeder, Smith & Company. Valuations are prepared annually as of December 31<sup>st</sup>.

This valuation reflects the assumption changes adopted by the Board in October of 2002, as a result of the 2002 Experience Study. These changes were further modified effective December 31, 2002, by reducing the assumption for the interest crediting rate on employee contributions. The assumption was lowered from 8% to 6%.

Section C of this report provides the current funded status of the plan and reviews the valuation results. Assets are discussed in Section D, while Section E contains an analysis of the actuarial gains and losses during the past year.

Section F discusses some of the historical comparisons and statistical summaries for the plan. Governmental Accounting Standards Board Statement No. 25 (GASB No. 25) information in the report is discussed in Section G, and Section H provides a summary of the valuation results along with other comments.

Various tables supporting the report are contained in Sections I and J, including any change in benefit provisions since the last valuation.

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## FUNDED STATUS OF THE PLAN

The funded status of the plan is shown in Table 1, Table 2, and Table 3. Table 1 summarizes the various cost items from the current year's and prior year's actuarial valuations, while Table 2 provides an allocation of the normal cost by its various components. Table 3 shows the components of the actuarial liability.

Reviewing the composition of normal cost of the System, Table 2 indicates that the employer normal cost as of December 31, 2004, is 14.39% of pay. This compares with 14.32% of pay as of the last valuation of December 31, 2003. This normal cost is developed based on the entry-age-normal (EAN) actuarial cost method. As may be seen in Item 1, the normal cost for the retirement benefits is 10.01% of pay. The normal cost for the vested termination benefits is 1.74% and 1.99% for refunds of nonvested terminated employees. The normal cost for disability benefits is 0.30%, and the normal cost for death benefits is 0.35%.

Table 1 illustrates a number of the key actuarial items for the 2004 valuation. As mentioned above, the employer normal cost rate is 14.39% of covered payroll. The actuarial accrued liability is \$1,678.2 million as shown in Item 5 and as detailed in Table 3. The actuarial value of assets equals \$1,356.8 million, as shown in Item 6. Item 7 of Table 1 shows that the plan has a \$321.4 million unfunded liability (i.e. liabilities exceed plan assets) as of the valuation date. As of the last valuation (December 31, 2003), the System was underfunded by \$203 million.

The City and the employees are both currently contributing 8% of payroll. Combining the employees' contributions with the City contribution, the System has 16% of payroll to fund benefits. The current normal cost of the plan is 14.39%, which means that the System is receiving contributions in excess of the normal cost equal to 1.61% of pay (16.00% less 14.39%). These excess contributions are available to amortize any unfunded actuarial accrued liability. Based on these contribution rates, if all assumptions are exactly met then the current unfunded liability will never be fully amortized.

The GASB annual required contribution (ARC) is also shown on Table 1. The ARC for the 2005 plan year, as determined by the 2004 valuation, is 12.27%.

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## **CHANGE IN ASSETS**

Table 4 and Table 5 show the development of the actuarial value of assets. Item 6 of Table 4 shows that the actuarial value of assets as of December 31, 2004, is \$1,356.8 million.

Table 4 develops the actuarial value of assets under the actuarial asset valuation method adopted by the Board in conjunction with the change to reporting the System's disclosure information under GASB No. 25. This method begins with the market value of assets and is modified by the "Excess (Shortfall)" between expected investment return and actual income. Only 20% of this Excess (Shortfall) is recognized in the valuation immediately following the year in which the Excess (Shortfall) occurs. The remaining 80% of the Excess (Shortfall) is deferred until future years, with an additional 20% recognized in each subsequent year until 100% of the difference is recognized in the fifth year.

The total deferral of all Excess (Shortfall) investment income for the year (shown in Item 2e) is (\$ 18.2) million. Table 5 shows the development of the Excess (Shortfall) of investment income for the past four years.

An analysis of the change in the System's market value of assets for the last two plan years and an estimate of the return on assets for the System are included in Table 6. The estimated average annual rate of return for the year ending December 31, 2004, assuming that income, revenue, and expenditures are evenly distributed throughout the year is 11.57% on a market value of assets basis. The rate of return for the year ending December 31, 2004, on an actuarial value basis was 2.74%. This compares with the actuarial assumed investment return of 7.75%.

Table 7 shows the development of the gain/(loss) on the actuarial value of assets for the prior plan year. As may be seen in Item 9, the System had a loss on an actuarial asset basis of (\$ 67) million in 2004. This compares to the \$ 29 million gain in 2003.

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## **ACTUARIAL GAINS AND LOSSES**

An important part of the change in unfunded actuarial accrued liability from year to year is due to the impact of actuarial gains and losses of the System. This section summarizes the combined asset and liability experience changes since the prior valuation on December 31, 2003.

As can be seen in Item 7 of Table 8, the expected value of the unfunded actuarial accrued liability as of December 31, 2004, is an underfunded position of \$207.6 million. This expected value reflects an assumed investment return assumption of 7.75% on the beginning of year unfunded actuarial accrued liability, normal cost, and contributions during 2004.

Since the actual unfunded actuarial accrued liability as of December 31, 2004 is \$ 321.4 million, it represents a total net loss for the period of \$113.8 million, as shown in Item 9 of Table 8. That is, the funded status is less than expected. The net actuarial loss includes an asset loss of (\$ 67.1) million as shown in Table 7 and a loss on the liability side equal to (\$ 46.7) million. The liability loss is broken out by source in Items 16-23 of Table 8. As can be seen on Table 8, the largest portion of the liability loss was due to higher than expected salary increases.

There have been no changes to the plan provisions since the prior year. Please see Table 15 for a more detailed description of the plan provisions.

The actuarial assumptions used in this valuation are the same as used in the prior year, except that the temporary assumption modification of a 0% general wage increase has been eliminated. These assumptions are detailed in Table 14.

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## HISTORICAL COMPARISONS AND STATISTICAL SUMMARIES

Various statistical data on the System is shown in the tables contained in Section J. In addition, Tables 9 through 12 of Section I contain certain actuarial trend information which may be of interest.

Table 9 relates the size of the unfunded actuarial accrued liability (UAAL) to three different measurements. In Columns 3 and 4 the UAAL is related to the covered payroll of the System. Columns 5 and 6 relate the UAAL to the actuarial value of assets, while Columns 7 and 8 relate the UAAL to the total actuarial liabilities of the System.

Tables 10 through 12 provide information which should be included in your annual report. Table 10 provides a schedule of active member valuation data. Table 11 provides a schedule of retirants and beneficiaries added to and removed from payments rolls. Solvency test results are presented in Table 12.

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## GASB NO. 25 DISCLOSURE

The Governmental Accounting Standards Board (GASB) has issued Statement No. 25 which provides the manner in which the actuarial condition of a public sector retirement plan is to be disclosed. COA ERS was required to comply with GASB No. 25 beginning January 1, 1997.

The required schedule of funding progress is shown in Table 13a. Table 13b is the schedule of annual required contributions required by GASB No. 25. Table 13c provides notes to the required supplementary information.

Assets used for GASB No. 25 disclosure are based on the actuarial value used for this valuation. Plan liabilities are based on the Entry Age Normal (EAN) funding method which is the same method used for determining plan liabilities for valuation purposes, as required by GASB No. 25.

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## SUMMARY AND CLOSING COMMENTS

It is our opinion that the results of this valuation provide a reasonable reflection of the funded status of the System. Due to the significant asset losses that occurred in 2000-2002, the System's contributions are not currently sufficient to amortize the unfunded liability of the System. In the absence of significant actuarial gains, the current contribution rates will not be sufficient to support the current benefit structure of the Plan.

The overall funded position of the System decreased from 86.9% at the prior valuation to 80.8% at this valuation.

It should also be noted that while the System's funded position declined since the prior valuation, the large asset losses (on a market value basis) from 2000, 2001 and 2002 have only been partially recognized. In the absence of any other actuarial gains or a continuation of the turn-around in the financial markets, the funded position of the System will most probably decrease for the next one to two years.

As noted above, in the absence of significant actuarial gains, either the contribution rates to the Plan will need to increase or the future benefits promised under the Plan will need to be reduced to a level that can be supported by the contribution rates.

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## SUMMARY OF COST ITEMS

	December 3	1, 2004	December 31	, 2003
		Cost as		Cost as
	Cost Item (1)	<u>% of Pay</u> (2)	Cost Item (3)	<u>% of Pay</u> (4)
1. Participants	(1)	(2)	(3)	(1)
a. Active	7,489		7,432	
b. Terminated vested	612		624	
c. Retired participants and beneficiaries	3,077		2,944	
d. Disabled	60		51	
e. Total	11,238		11,051	
2. Covered Payroll	\$ 326,590,164		\$ 312,790,966	
3. Averages for Active Participants				
a. Average age	43.3		42.8	
b. Average years of service	9.0		8.8	
c. Average pay	\$ 43,609		\$ 42,087	
4. Employer Normal Cost	\$ 48,513,730	14.39% *	\$ 45,338,049	14.32% *
5. Actuarial Accrued Liability				
a. Active participants	\$ 823,652,494		\$ 734,484,685	
b. Terminated vested participants	35,771,148		33,719,572	
c. Refunds of terminated nonvested participants	6,491,265		6,525,720	
d. Retired participants and beneficiaries	804,051,193		768,804,704	
e. Disabled participants	8,215,143		8,296,121	
f. Total	\$ 1,678,181,243	513.85%	\$ 1,551,830,802	496.12%
6. Present Actuarial Assets	\$ 1,356,797,448	415.44%	\$ 1,348,790,502	431.21%
7. Unfunded Actuarial Accrued Liability (UAAL)	\$ 321,383,795	98.41%	\$ 203,040,300	64.91%
8. Relative Size of UAAL				
a. As percent of actuarial assets	23.69%		15.05%	
b. As percent of covered payroll	98.41%		64.91%	
9. GASB Annual Required Contribution (ARC)**	12.27%		9.72%	

\* as % of expected payroll

\*\* December 31, 2004 ARC is based on 30-year amortization, December 31, 2003 ARC was based on 40-year amortization

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## ANALYSIS OF NORMAL COST BY COMPONENT

	Cost as	% of Pay
Benefit Component	December 31, 2004	December 31, 2003
(1)	(2)	(3)
1. Retirement Benefits	10.01%	9.83%
2. Vested Termination Benefits	1.74%	1.82%
3. Refunds of Nonvested Terminations	1.99%	2.04%
4. Disability Benefits	0.30%	0.31%
5. Death Benefits	0.35%	0.32%
6. Normal Cost	14.39%	14.32%

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## ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS AND CALCULATION OF ACTUARIAL ACCRUED LIABILITY

	Dee	cember 31, 2004 (1)	Dec	cember 31, 2003 (2)
A. Present Value of Future Benefits				
1. Active participants				
a. Retirement benefits	\$	1,003,036,006	\$	904,079,832
b. Deferred termination benefits		100,080,209		105,104,263
c. Refund of nonvested terminations		31,665,183		33,458,871
d. Disability benefits		16,269,627		17,664,738
e. Death benefits		21,479,728		15,933,889
f. Total	\$	1,172,530,753	\$	1,076,241,593
2. Retired participants				
a. Service retirements and beneficiaries	\$	804,051,193	\$	768,804,704
b. Disability retirements		8,215,143		8,296,121
c. Total	\$	812,266,336	\$	777,100,825
3. Inactive participants				
a. Vested terminations with deferred benefits	\$	35,771,148	\$	33,719,572
b. Nonvested terminations with refunds payable		6,491,265		6,525,720
c. Total	\$	42,262,413	\$	40,245,292
4. Total actuarial present value of future benefits	\$	2,027,059,502	\$	1,893,587,710
B. Present Value of Future Pay	\$	2,418,722,075	\$	2,311,065,498
C. Normal Cost Rate		14.39%		14.32%
D. Present Value of Future Normal Costs	\$	348,878,259	\$	341,756,908
E. Actuarial Accrued Liability for Active Members				
1. Present value of future benefits (Item A.1.f.)	\$	1,172,530,753	\$	1,076,241,593
2. Less present value of future normal costs (Item D)		348,878,259		341,756,908
3. Actuarial accrued liability	\$	823,652,494	\$	734,484,685
F. Total Actuarial Accrued Liability (Item A.2.c + Item A.3.c + Item E.3)	\$	1,678,181,243	\$	1,551,830,802

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## DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

Item	Valuation as of cember 31, 2004
(1)	 (2)
1. Excess (shortfall) of investment income for current year and previous three years (see Table 5):	
a. Current year	\$ 47,286,825
b. Current year -1	164,524,777
c. Current year -2	(205,130,274)
d. Current year -3	(181,365,035)
2. Deferral of excess (shortfall) of investment income for:	
a. Current year (80% deferral)	\$ 37,829,460
b. Current year - 1 (60% deferral)	98,714,866
c. Current year - 2 (40% deferral)	(82,052,110)
d. Current year - 3 (20% deferral)	(36,273,007)
e. Total deferred for year	\$ 18,219,209
3. Market value of plan assets, end of year	\$ 1,375,016,657
4. Preliminary actuarial value of plan assets, end of year (Item 3 - Item 2.e)	\$ 1,356,797,448
5. Actuarial value of assets corridor	
a. 80% of market value of assets, end of year	\$ 1,100,013,326
b. 120% of market value of assets, end of year	\$ 1,650,019,988
6. Final actuarial value of plan assets, end of year	
(Item 4, but not less than Item 5.a., or greater than Item 5.b.)	\$ 1,356,797,448

## GABRIEL, ROEDER, SMITH & COMPANY

City of Austin Employees' Retirement System 5

TABLE

CALCULATION OF EXCESS INVESTMENT INCOME FOR ACTUARIAL VALUE OF ASSETS

Plan Year Ending December 31,

Itam		1000		2003	0		2001	
IICIII		7004		CUU2		2002	1007	
(1)		(2)		(3)		(4)	(5)	
1. Net Investment Income								
a. Interest and Dividends	$\boldsymbol{\diamond}$	32,165,731	↔	30,655,364	↔	32,348,029	\$ 39,315,709	602'
b. Realized and unrealized gains and losses*		113,465,673		215,414,069		(145,341,052)	(118,202,326)	,326)
c. Administrative expenses		(1,554,864)		(1,552,770)		(1,641,675)	(1,305,222)	(222)
d. Total	$\boldsymbol{\diamond}$	144,076,540	$\boldsymbol{\diamond}$	244,516,663	$\boldsymbol{\diamond}$	\$ (114,634,698)	\$ (80,191,839)	(683)
2. Market value of assets, beginning of year	\$ 1,	\$ 1,259,556,169	\$1	\$ 1,042,376,123	\$1	\$ 1,172,088,538	\$ 1,271,215,828	,828
3. Contributions during year	$\boldsymbol{\diamond}$	59,213,119	$\boldsymbol{\diamond}$	55,356,622	$\boldsymbol{\diamond}$	60,166,320	\$ 51,069,055	,055
4. Benefits and refunds paid during year	$\boldsymbol{\diamond}$	(87,814,171)	↔	(82,693,239)	$\boldsymbol{\diamond}$	(75,244,037)	\$ (70,004,506)	,506)
5. Other	$\boldsymbol{\diamond}$	(15,000)	$\boldsymbol{\diamond}$	I	↔	I	<del>\$</del>	I
6. Expected net investment income at		7.75%		7.75%		7.75%	œ	8.00%
a. Market value of assets, beginning of year	$\boldsymbol{\diamond}$	97,615,603	$\boldsymbol{\diamond}$	80,784,150	$\boldsymbol{\diamond}$	90,836,862	\$ 101,697,266	,266
b. Contributions		2,294,508		2,145,069		2,331,445	2,042,762	.,762
c. Benefits and refunds		(3,119,233)		(2,937,333)		(2,672,731)	(2,566,832)	,832)
d. Other		(1,163)		ı		ı		
e. Total	$\boldsymbol{\diamond}$	96,789,715	↔	79,991,886	\$	90,495,576	\$ 101,173,196	,196
7. Excess investment income for year (Item 1.d Item 6.e.)	↔	47,286,825	$\boldsymbol{\diamond}$	164,524,777	\$	\$ (205,130,274)	\$ (181,365,035)	(035)

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\*Includes investment expenses

COA ERS 2004 Comprehensive Annual Financial Report

CHANGE IN NET ASSETS
----------------------

		Valuation Period En	ding December 31,
		2004	2003
		(1)	(2)
1.	Assets in plan at beginning of year (A)	\$ 1,259,556,169	\$ 1,042,376,123
2.	Employer contributions	26,940,941	24,907,480
3.	Employee contributions	32,272,178	30,449,142
4.	Benefit payments made	82,702,062	78,216,523
5.	Refunds of contributions	5,112,109	4,476,716
6.	Expenses paid from trust	1,554,864	1,552,770
7.	Investment return	145,631,404	246,069,433
8.	Other	(15,000)	0
9.	Assets in plan at end of year ( <b>B</b> ) (1 + 2 + 3 - 4 - 5 - 6 + 7 + 8)	\$ 1,375,016,657	\$ 1,259,556,169
10.	Approximate rate of return on average invested assets		
	a. Net investment income $(7 - 6 = \mathbf{I})$	\$ 144,076,540	\$ 244,516,663
	b. Estimated yield based on (2I/(A + B - I))	11.57%	23.77%

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## ACTUAL VERSUS EXPECTED ACTUARIAL ASSETS

		Plan Year Ending		g	
Item	De	December 31, 2004		December 31, 2003	
(1)		(2)		(3)	
1. Actuarial assets, beginning of year	\$	1,348,790,502	\$	1,250,851,348	
2. Contributions during year	\$	59,213,119	\$	55,356,622	
3. Benefits paid during year	\$	(82,702,062)	\$	(78,216,523)	
4. Refunds paid during year	\$	(5,112,109)	\$	(4,476,716)	
5. Other	\$	(15,000)	\$	0	
6. Assumed net investment income at		7.75%		7.75%	
a. Beginning of year assets	\$	104,531,264	\$	96,940,979	
b. Contributions		2,294,508		2,145,069	
c. Benefits		(2,937,646)		(2,778,316)	
d. Refunds		(181,586)		(159,017)	
e. Other		(1,163)		0	
f. Total	\$	103,705,377	\$	96,148,715	
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$	1,423,879,827	\$	1,319,663,446	
8. Actuarial assets, end of year	\$	1,356,797,448	\$	1,348,790,502	
9. Asset gain/(loss) (Item 8 - Item 7)	\$	(67,082,379)	\$	29,127,056	

## GABRIEL, ROEDER, SMITH & COMPANY

## ACTUARIAL GAIN OR LOSS AS OF DECEMBER 31, 2004

CALCULATION OF TOTAL ACTUARIAL GAIN OR LOSS	2004	2003
1. Unfunded actuarial accrued liability (UAAL) as of prior year	\$ 203,040,300	\$ 189,347,298
2. Actual normal cost paid during year	48,460,017	47,612,726
3. Subtotal (1 + 2)	\$ 251,500,317	\$ 236,960,024
4. Interest at prior valuation's rate of 7.75%	17,613,449	16,519,409
5. Contributions during year	(59,213,119)	(55,356,622)
6. Interest on contributions for one-half year	(2,294,508)	(2,069,894)
7. Expected UAAL as of December 31st, $(3 + 4 + 5 + 6)$	\$ 207,606,139	\$ 197,992,919
8. Actual UAAL as of December 31st	321,383,795	203,040,300
9. Actuarial gain/(loss) for the period (7 - 8)	\$ (113,777,656)	\$ (5,047,381)
SOURCE OF GAINS AND LOSSES		
10. Asset gain/(loss) (See Table 7)	\$ (67,082,379)	\$ 29,127,056
11. Total liability gain/(loss) for the period (9-10)	(46,695,277)	(34,174,437)
12. Gain/(loss) due to benefit enhancements	0	0
13. Gain/(loss) due to retiree ad hoc increases	0	0
14. Gain/(loss) due to assumption changes	0	0
15. Liability experience gain/(loss) (11 - 12 - 13 - 14)	\$ (46,695,277)	\$ (34,174,437)
SOURCE OF LIABILITY GAINS AND LOSSES		
16. Salary Increases	\$ (32,761,267)	\$ 4,443,986
17. Service Retirement	1,505,296	(4,411,938)
18. Withdrawal	(12,624,441)	(15,449,722)
19. Disability Retirement	(262,883)	(210,940)
20. Active Mortality	(280,027)	(81,348)
21. Retiree Mortality	3,661,495	(2,718,396)
22. New Entrants	(3,036,234)	(4,198,798)
23. Other (Data)	(2,897,216)	(11,547,281)
24. Total Liability Experience Gain/(Loss)	\$ (46,695,277)	\$ (34,174,437)

GABRIEL, ROEDER, SMITH & COMPANY

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# **RELATIVE SIZE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**

aria		$\mathbf{b}$		~	~	~	~	~	~	~	~				
Actuarial	Accrued	Liability	(8)	(10.6%)	(16.4%)	(7.0%)	(13.5%)	(2.9%)	(8.5%)	(5.8%)	(1.5%)	3.6%	13.1%	13.1%	19.2%
Actuarial	Accrued	Liability	(1)	\$ 362,978,334	404,388,706	541,173,346	622,974,043	832,140,284	877,817,668	1,044,488,860	1,212,618,545	1,360,269,609	1,440,198,646	1,551,830,802	1,678,181,243
Percent	of Present	Assets	(9)	(6.6%)	(14.1%)	(6.5%)	(11.9%)	(2.8%)	(%6.2)	(5.5%)	(1.5%)	3.7%	15.1%	15.1%	23.7%
	Present	Assets	(5)	\$ 410,546,517	470,664,195	579,092,507	707,317,679	856,422,516	952,634,480	1,105,121,657	1,230,971,746	1,311,288,668	1,250,851,348	1,348,790,502	1,356,797,448
Percent of	Covered	Payroll	(4)	(22.5%)	(34.1%)	(16.1%)	(38.2%)	(11.1%)	(34.1%)	(24.8%)	(0.8%)	15.5%	58.8%	64.9%	98.4%
	Covered	Payroll	(3)	\$ 171,738,189	194,588,280	235,227,565	221,001,903	219,207,826	219,326,742	244,538,110	268,635,564	316,793,390	322,007,672	312,790,966	326,590,164
(Overfunded)	Actuarial Accrued	Liability	(2)	(38,568,183)	(66,275,489)	(37, 919, 161)	(84,343,636)	(24, 282, 232)	(74,816,812)	(60,632,797)	(18,353,201)	48,980,941	189,347,298	203,040,300	321,383,795
Valuation	as of	December 31	(1)	1990	1991	1993	1995	1997	1998	1999	2000	2001	2002	2003	2004
	(Overfunded)	Valuation (Overfunded) as of Actuarial Accrued Covered	Valuation (Overfunded) as of Actuarial Accrued Covered December 31 Liability Payroll	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll(1)(2)(3)	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll(1)(2)(3)1990(38,568,183)\$ 171,738,189	Valuation         (Overfunded)           as of         Actuarial Accrued         Covered           December 31         Liability         Payroll           (1)         (2)         (3)           1990         (38,568,183)         \$ 171,738,189           1991         (66,275,489)         194,588,280	Valuation         (Overfunded)           as of         Actuarial Accrued         Covered           December 31         Liability         Payroll           (1)         (2)         (3)           1990         (38,568,183)         \$ 171,738,189           1991         (66,275,489)         194,588,280           1993         (37,919,161)         235,227,565	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(2)$ $(3)$ $(3)$ $(2)$ $(3)$ $(3)$ $(3)$ $(3)$ $(3)$ $(2)$ $(3$	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2$	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3,568,183)$ $(1)$ $(2)$ $(3,568,183)$ $(1)$ $(2)$ $(3,568,183)$ $(1)$ $(2)$ $(3,568,183)$ $(1)$ $(2)$ $(3,7919,161)$ $(2)$ $(37,919,161)$ $(235,227,565)$ $(1)$ $(37,919,161)$ $(235,227,565)$ $(1)$ $(37,919,161)$ $(235,227,565)$ $(1)$ $(24,282,232)$ $(21,001,903)$ $(1)$ $(24,282,232)$ $(219,207,826)$ $(1)$ $(74,816,812)$ $(219,326,742)$ $(1)$ $(74,816,812)$ $(219,326,742)$	Valuation(Overfunded)as ofActuarial AccruedCovered $December 31$ LiabilityPayroll $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(2)$ $(2)$ $(3)$ $(2)$	(Overfunded)         Actuarial Accrued       Covered         Liability       Payroll         (2)       (3)         (38,568,183)       \$ 171,738,189         (66,275,489)       194,588,280         (66,275,489)       194,588,280         (37,919,161)       235,227,565         (84,343,636)       221,001,903         (84,343,636)       221,001,903         (74,816,812)       219,207,826         (74,816,812)       219,326,742         (60,632,797)       244,538,110         (18,353,201)       268,635,564	Valuation(Overfunded)as ofActuarial AccruedCovered $December 31$ LiabilityPayroll $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$ $(2)$ $(1)$ $(2)$	Valuation(Overfunded)as ofActuarial AccruedCoveredDecember 31LiabilityPayroll(1)(2)(3)(1)(2)(3)(1)(2)(3)(1)(2)(3),568,183)\$ 171,738,1891991(66,275,489)194,588,2801993(37,919,161)235,227,5651995(84,343,636)235,227,5651997(24,282,232)219,207,8261998(74,816,812)219,207,8261999(60,632,797)219,326,7421999(60,632,797)219,326,7421999(60,632,797)219,326,7421999(60,632,797)219,326,7421999(60,632,797)219,326,7421999(60,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(80,632,797)219,326,7421999(74,816,812)219,326,7421999(80,641)316,793,390200148,980,941316,793200218	Valuation(Overfunded)as of $Actuarial Accrued$ $Covered$ $as of$ $Actuarial Accrued$ $Covered$ $December 31$ Liability $Payroll$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(3)$ $(1)$ $(2)$ $(37,919,161)$ $(292)$ $(37,919,161)$ $(235,227,565)$ $(1992)$ $(84,343,636)$ $(231,001,903)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(84,343,636)$ $(219,207,826)$ $(1992)$ $(18,353,201)$ $(244,538,110)$ $(2000)$ $(18,353,201)$ $(268,635,564)$ $(2001)$ $48,980,941$ $(316,793,390)$ $(2002)$ $189,347,298$ $(222,007,672)$ $(203)$ $(203,040,300)$ $(312,790,966)$

## GABRIEL, ROEDER, SMITH & COMPANY

## **Actuarial Section**

## COA ERS 2004 Comprehensive Annual Financial Report

Year Ending	Active		Average	Percent
December 31	Participants	Covered Payroll	Salary	Increase
(1)	(2)	(3)	(4)	(5)
1990	6,626	\$171,738,189	\$25,918	4.9% *
1991	6,968	194,588,280	27,926	7.7%
1993	7,761	235,227,565	30,309	4.2% *
1995	7,190	221,001,903	30,737	0.7% *
1997	6,798	219,207,826	32,246	2.4% *
1998	6,311	219,326,742	34,753	7.8%
1999	6,512	244,538,110	37,552	8.1%
2000	6,894	268,635,564	38,967	3.8%
2001	7,713	316,793,390	41,073	5.4%
2002	7,647	322,007,672	42,109	2.5%
2003	7,432	312,790,966	42,087	-0.1%
2004	7,489	326,590,164	43,609	3.6%

## SCHEDULE OF ACTIVE MEMBER VALUATION DATA

\* Average annual increase/(decrease) over two-year period.

GABRIEL, ROEDER, SMITH & COMPANY

# SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

	A verage Annual Allo wances	(6)	\$ 16,344	20,772	20,796	23,116	24,693	25,327	26,058	26,243	26,178
	% Increase in Annual Allowances	(8)	16.4% *	20.1% *	11.7%	21.9%	14.5%	7.9%	10.5%	8.4%	4.5%
Rolls-End of Year	Annual Allowances	(1)	\$ 27,032,976	38,989,044	43,567,620	53,097,238	60,817,825	65,647,094	72,520,159	78,596,302	82,121,249
Rolls-F	Number	(9)	1,654	1,877	2,095	2,297	2,463	2,592	2,783	2,995	3,137
Removed from Rolls	Annual Allo wances	(5)	\$ 1,214,255	1,192,120	830,604	1,152,275	1,403,412	2,046,233	2,534,050	1,502,757	1,741,624
Remove	Number	(4)	88	105	25	57	75	95	118	59	85
Added to Rolls	, Al	(3)	\$ 4,787,640	7,714,560	5,409,180	10,757,697	5,552,629	5,278,490	7,754,803	7,706,066	5,619,478
Adde	Number	(2)	279	328	243	259	241	224	309	271	227
	Year Ending December 31	(1)	1995	1997	1998	1999	2000	2001	2002	2003	2004

## GABRIEL, ROEDER, SMITH & COMPANY

**Actuarial Section** 

\* A verage annual increase/(decrease) over two-year period.

## COA ERS 2004 Comprehensive Annual Financial Report

**TABLE 11** 

**TABLE 12** 

# SOLVENCY TEST

	Agg	Aggregated Accrued Liabilities for	bilities for				
	Active and		Active and Inactive		Portions o	Portions of Accrued Liabilities Covered	ies Covered
	Inactive		Members			by Reported Assets	its
	Members	Retirees and	(Employer	Reported			(5)/
Valuation Date	Contributions	Beneficiaries	Financed Portion)	Assets	(5)/(2)	(5)/[(2)+(3)]	[(2)+(3)+(4)]
(1)	(2)	(3)	(4)	(5)	(9)	(1)	(8)
December 31, 1995	169,715,854	281,857,452	171,400,737	707,317,679	100.0%	100.0%	100.0%
December 31, 1997	157,311,099	385,407,128	289,422,057	856,422,516	100.0%	100.0%	100.0%
December 31, 1998	178,757,374	442,732,833	256,327,461	952,634,480	100.0%	100.0%	100.0%
December 31, 1999	230,542,295	536,835,240	277,111,325	1,105,121,657	100.0%	100.0%	100.0%
December 31, 2000	221,908,346	629,257,941	361,452,258	1,230,971,746	100.0%	100.0%	100.0%
December 31, 2001	248,579,180	654,307,118	457,383,311	1,311,288,668	100.0%	100.0%	96.4%
December 31, 2002	265,812,595	718,187,586	456,198,465	1,250,851,348	100.0%	100.0%	86.9%
December 31, 2003	252,182,701	777,100,825	522,547,276	1,348,790,502	100.0%	100.0%	86.9%
December 31, 2004	261,905,526	812,266,336	604,009,381	1,356,797,448	100.0%	100.0%	80.8%

## GABRIEL, ROEDER, SMITH & COMPANY

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## SCHEDULE OF FUNDING PROGRESS (As required by GASB #25)

J ()												
UAAL as % of Payroll (4)/(6) (7)	(22.5%)	(34.1%)	(16.1%)	(38.2%)	(11.1%)	(34.1%)	(24.8%)	(6.8%)	15.5%	58.8%	64.9%	98.4%
UAAI Payı												
Annual Covered Payroll (6)	\$171.7	194.6	235.2	221.0	219.2	219.3	244.5	268.6	316.8	322.0	312.8	326.6
I	0.7											
Funded Ratio (2)/(3) (5)	113.1%	116.4%	107.0%	113.5%	102.9%	108.5%	105.8%	101.5%	96.4%	86.9%	86.9%	80.8%
Funde (2)	11	11	10	11	10	10	10	10	6	80	80	80
larial ility · (2)												
ed Liab L) (3) - L) (3) -	(38.6)	(66.3)	(37.9)	(84.3)	(24.3)	(74.8)	(9.09)	(18.4)	49.0	189.3	203.0	321.4
Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	÷											
ا ب	•											
vctuarial Accrued Liability (AAL) (3)	363.0	404.4	541.2	623.0	832.1	877.8	4.5	2.6	0.3	0.2	1.8	8.2
tuarial A iability (. (3)		40	54	62	83	87	1,044.5	1,212.6	1,360.3	1,440.2	1,551.8	1,678.2
<	\$											
Actuarial Value of Assets (AVA) (2)	5	L	1	3	4	9	1	0	3	6	8	8
Actuarial Value of Assets (AVA) (2)	410.5	470.7	579.1	707.3	856.4	952.6	1,105.1	1,231.0	1,311.3	1,250.9	1,348.8	1,356.8
Ac of A	\$											
Ę	, 1990	, 1991	, 1993	, 1995	, 1997	, 1998	, 1999	, 2000	, 2001	, 2002	, 2003	, 2004
Valuation Date (1)	December 31, 1990	December 31, 1991	December 31, 1993	December 31, 1995	December 31, 1997	December 31, 1998	December 31, 1999	December 31, 2000	December 31, 2001	ıber 31	December 31, 2003	December 31, 2004
	Decen	December 31, 2002	Decen	Decen								
G	ABR	IEL, I	ROED	DER, S	MITI	H & C	OMP	ANY				

## COA ERS 2004 Comprehensive Annual Financial Report

## SCHEDULE OF EMPLOYER CONTRIBUTIONS (as required by GASB #25)

	Annual	
Fiscal	Required	Percentage
Year	Contribution	Contributed
(1)	(2)	(3)
1992	\$14,266,156	100.00%
1993	\$15,653,339	100.00%
1994	\$17,005,695	100.00%
1995	\$16,983,178	100.00%
1996	\$15,738,068	100.00%
1997	\$15,313,819	100.00%
1998	\$16,126,014	100.00%
1999	\$18,224,558	100.00%
2000	\$21,531,859	100.00%
2001	\$24,831,016	100.00%
2002	\$26,375,274	100.00%
2003	\$30,660,538	81.05%
2004	\$32,733,243	82.30%

## GABRIEL, ROEDER, SMITH & COMPANY

## NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	December 31, 2004
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Pay, open
Payroll growth rate for amortization	3.50%
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.75%
Projected salary increases	4.00% to 14.00%
*Includes inflation at	3.50%
Cost-of-living adjustments	None assumed

## GABRIEL, ROEDER, SMITH & COMPANY

## A. ACTUARIAL ASSUMPTIONS

1. Investment Return Rate

7.75% per annum, compounded annually.

- 2. Mortality
  - a. Nondisabled

Rate of Decrement: 1994 Group Annuity Mortality Table for males and females. No age setbacks.

b. Disabled

Mortality tables from Revenue Ruling 96-7 for males and females disabled after December 31, 1994. No age setbacks.

			Rates of	Mortality		
		Nondi	sabled			
	Rate of D	ecrement	Post-Re	tirement	Disa	abled
Age	Male	Female	Male	Female	Male	Female
20	.000507	.000284	.000507	.000284	.024583	.009650
25	.000661	.000291	.000661	.000291	.027457	.011974
30	.000801	.000351	.000801	.000351	.030661	.014843
35	.000851	.000478	.000851	.000478	.034184	.017654
40	.001072	.000709	.001072	.000709	.038373	.020579
45	.001578	.000973	.001578	.000973	.043033	.023988
50	.002579	.001428	.002579	.001428	.048004	.027961
55	.004425	.002294	.004425	.002294	.053120	.032594
60	.007976	.004439	.007976	.004439	.058118	.037993
65	.014535	.008636	.014535	.008636	.063669	.044287
70	.023730	.013730	.023730	.013730	.073284	.051331

Rates of Mortality

## GABRIEL, ROEDER, SMITH & COMPANY

3. <u>Retirement Rates</u>: The following rates of retirement are assumed for members eligible to retire.

Age	Rates of F	Retirement
	Males	Females
45 & under	35.0%	35.0%
46	35.0%	27.5%
47	35.0%	27.5%
48	40.0%	27.5%
49	45.0%	27.5%
50	45.0%	27.5%
51	45.0%	35.0%
52	45.0%	35.0%
53	45.0%	35.0%
54	40.0%	35.0%
55	40.0%	35.0%
56	35.0%	30.0%
57	35.0%	30.0%
58	35.0%	35.0%
59	35.0%	35.0%
60	35.0%	40.0%
61	35.0%	15.0%
62	50.0%	42.5%
63	30.0%	35.0%
64	30.0%	25.0%
65	45.0%	35.0%
66	25.0%	25.0%
67	25.0%	25.0%
68	20.0%	25.0%
69	20.0%	25.0%
70 & older	100.0%	100.0%

## GABRIEL, ROEDER, SMITH & COMPANY

## 4. Rates of Decrement Due to Withdrawal

			Ma	ales		
			Years of	f Service	-	
Age	0	1	2	3	4	5+
25	0.2214	0.1936	0.1860	0.1568	0.1402	0.0923
30	0.2013	0.1760	0.1691	0.1425	0.1274	0.0839
35	0.1915	0.1674	0.1491	0.1171	0.1002	0.0680
40	0.1736	0.1518	0.1296	0.1008	0.0883	0.0529
45	0.1570	0.1372	0.1158	0.0925	0.0844	0.0385
50	0.1444	0.1263	0.1100	0.0912	0.0837	0.0268
55	0.1368	0.1196	0.1123	0.0958	0.0835	0.0208
60	0.1406	0.1229	0.1216	0.1053	0.0835	0.0233

			Females			
			Years of	f Service	•	
Age	0	1	2	3	4	5+
25	0.2181	0.2038	0.1956	0.1873	0.1281	0.1256
30	0.2118	0.1980	0.1899	0.1818	0.1233	0.1130
35	0.2105	0.1968	0.1837	0.1567	0.1079	0.0827
40	0.1939	0.1812	0.1649	0.1394	0.0990	0.0649
45	0.1728	0.1615	0.1495	0.1309	0.0990	0.0594
50	0.1454	0.1359	0.1341	0.1251	0.1004	0.0546
55	0.1399	0.1333	0.1269	0.1168	0.1067	0.0560
60	0.1478	0.1408	0.1340	0.1289	0.1238	0.0596

## GABRIEL, ROEDER, SMITH & COMPANY

## 5. Disability Rates\*

Sample rates are shown below:

\_

	Rates of Decrement Due to Disability				
Age	All Participants				
20	.00014				
25	.00019				
30	.00031				
35	.00052				
40	.00092				
45	.00209				
50	.00379				
55	.00490				
60	.00911				

\* Rates are for disability due to all causes, occupational disability rates are assumed to be 10% of all causes rates.

## 6. Rates of Salary Increase

Years of Service	Promotional Rate of Increase	Total Annual Rate of Increase Including 3.50% Inflation Component and 0.50% Productivity Component
0	10.00%	14.00%
1	8.50%	12.50%
2	6.75%	10.75%
3	4.25%	8.25%
4	3.75%	7.75%
5	2.25%	6.25%
6	1.75%	5.75%
7	1.50%	5.50%
8	1.50%	5.50%
9	1.50%	5.50%
10	1.00%	5.00%
11 - 19	0.75%	4.75%

## GABRIEL, ROEDER, SMITH & COMPANY

## 7. DROP Participation:

It was assumed that 20% of retiring active members would elect a "Back-end" DROP.

## 8. <u>Married Percentage</u>:

100% of the active members are assumed to be married. Spouses are assumed to be the same age as the member.

## 9. Normal Form of Payment:

It is assumed that all retiring members will elect the Life only form of payment.

## 10. Interest Crediting Rate on Employee Contributions:

It is assumed that the interest credit rate on employee contributions will be 6.0%.

## B. <u>ACTUARIAL VALUE OF ASSETS</u>

The actuarial value of assets is equal to the market value of assets less a five-year phase in of the Excess (Shortfall) between expected investment return and actual income with the resulting value not being less than 80% or more than 120% of the market value of assets.

## C. <u>ACTUARIAL FUNDING METHOD</u>

The funding period required to amortize the unfunded actuarial accrued liability is determined using the entry-age normal actuarial cost method. This method assigns the System's total actuarial present value of future benefits to various periods. The actuarial accrued liability is assigned to years prior to the valuation, the normal cost is assigned to the year following the valuation. The remaining costs are assigned to future years.

The normal cost is determined on an individual basis. The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the actuarial value of assets.

## GABRIEL, ROEDER, SMITH & COMPANY

## SUMMARY OF BENEFIT PROVISIONS OF THE RETIREMENT PLAN AS OF DECEMBER 31, 2004

## A. <u>EFFECTIVE DATE</u>

January 1, 1941.

## B. ELIGIBILITY AND PARTICIPATION

Any regular and permanent employee of the City of Austin, excluding all civil service commissioned police officers and firefighters, the Mayor and members of the City Council and all part-time employees who work less than 75 percent of a normal work week.

## C. <u>MEMBERSHIP SERVICE</u>

The period of time during which an eligible employee pays into and keeps on deposit the contribution prescribed to be paid by the employee into the System.

## D. AVERAGE FINAL COMPENSATION

The average of the monthly compensation up to \$16,666 (\$12,500 for persons who first become members after 1995), for the 36 calendar months of highest compensation during the last 120 months prior to termination.

## E. <u>MEMBER AND EMPLOYEE CONTRIBUTION RATES</u>:

The City currently contributes 8.00% of pay for each active member. Each active member contributes 8.00% of pay. These contributions are made under a pre-tax 401(h) pick-up arrangement.

## F. <u>RETIREMENT BENEFITS</u>

## 1. Normal Retirement

- a. <u>Eligibility</u>: A participant may retire upon attaining age 62, or 23 years of service, or attaining age 55 with 20 years of service.
- b. <u>Monthly Benefit</u>: 3.00% of average final compensation times years of service.
- c. <u>Payment Form</u>: Benefits are paid as a monthly life annuity to the participant, with a provision that should the participant die prior to receiving monthly payments whose sum is greater than or equal to the participant's accumulated employee contributions, then the participant's beneficiary shall receive a lump sum equal to the excess of the participant's accumulated employee contributions with interest over the sum of the monthly payments received.

## GABRIEL, ROEDER, SMITH & COMPANY

## SUMMARY OF BENEFIT PROVISIONS OF THE RETIREMENT PLAN AS OF DECEMBER 31, 2004 (Continued)

## d. Optional Forms of Payment:

- i) Joint and contingent annuity with either 100%, 66 2/3%, or 50% of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring partici-pant, with the provision that, should the contingent annuitant predecease the participant, the monthly annuity will revert to the amount that would have been payable under the normal form of payment,
- ii) Joint and 66 2/3% last survivor provides a reduced retirement income payable as long as both the member and the joint annuitant are alive, and upon the death of either the member or the joint annuitant, the benefit reduces to 2/3 of such amount for the remainder of the life of the last survivor,
- iii) Period certain and life annuity with 15 years of payments guaranteed, or
- iv) Life annuity with modified cash refund.
- e. <u>Deferred Retirement Option Program (DROP)</u>: A member may elect to retroactively participate in the System's DROP (ie. a Back End DROP). The member would receive a lump sum payment equal to 90% of the sum of the monthly annuities the participant would have received if the member had retired at the DROP entry date. No COLA's are included but changes in the benefit multiplier are reflected.
- 2. <u>Early Retirement:</u> Currently there are no reduced retirement benefits under the plan. See Normal Retirement.

## G. **DISABILITY RETIREMENT**

- 1. <u>Eligibility</u>: If the employee is terminated by reason of a total and permanent disability which prevents the employee from engaging in any substantial gainful employment. If the employee has less than five years of service, the disability must be job related.
- 2. <u>Monthly Benefit</u>: Same as Normal Retirement benefit using pay and service at date of disability.
- 3. <u>Form of Payment</u>: The normal form of payment that is available to a member taking normal retirement and the optional forms of payments described in F.1.d.i) and F.1.d.ii) above.

## GABRIEL, ROEDER, SMITH & COMPANY

## SUMMARY OF BENEFIT PROVISIONS OF THE RETIREMENT PLAN AS OF DECEMBER 31, 2004 (Continued)

## H. <u>VESTING OF BENEFITS</u>

## 1. Vesting

An employee is vested according to the following schedule:

Years of	Vested		
Vesting Service	Percentage		
Less than 5	0%		
5 or more	100%		

## 2. Benefits Upon Vesting

A vested participant is entitled to the retirement benefit payable at normal retirement earned to the date of participant's termination multiplied by his/her vested percentage, or a refund of the employee's accumulated employee contributions with interest.

## I. <u>DEATH IN SERVICE</u>

- 1. <u>Eligibility:</u> All active members.
- 2. <u>Benefit:</u> The amount of the benefit payable to the beneficiary is:
  - a. Employee eligible for retirement at date of death:

The surviving spouse if any may elect to receive an annuity equal to the monthly benefit as if the member had retired under any retirement option that would have been available to the member at the end of the month in which the member died. If there is no surviving spouse, then the beneficiary may elect to receive a 15 years certain and life annuity. The surviving spouse or beneficiary instead of electing the annuity may elect to receive a benefit equal to twice the member's accumulated employee contributions with interest.

b. Employee not eligible for retirement at date of death:

A benefit equal to twice the member's accumulated employee contributions with interest.

## GABRIEL, ROEDER, SMITH & COMPANY

## SUMMARY OF BENEFIT PROVISIONS OF THE RETIREMENT PLAN AS OF DECEMBER 31, 2004 (Continued)

## J. <u>RETIREE LUMP-SUM DEATH BENEFIT</u>

Upon death of a retired member a \$10,000 lump-sum death benefit is payable. This benefit is also payable upon the death of an active member eligible for retirement whose surviving spouse or beneficiary elects to receive an annuity.

## K. COST-OF-LIVING ADJUSTMENT (COLA)

On January 1 of each year the Board may approve a cost-of-living increase for those retirees who retired on or before December 31 of the previous year. The maximum increase which can be approved is 6%. The amount of the increase is set by the Board upon recommendation by the System's actuary that such an increase will not make the Fund financially unsound, and the adjustment is not inconsistent with the Code. The increase is prorated for any benefit which has been in effect for less than a year, with the proration being 1/12 for each monthly payment received during the prior year.

## L. <u>13<sup>th</sup> CHECK</u>

Once each year the Board may approve a 13<sup>th</sup> check to be paid to those members currently in payment status. The additional check would be equal to a percentage of the member's monthly annuity with a maximum percentage of 100%.

## M. LEGISLATED PLAN CHANGES ENACTED BY 1995 LEGISLATURE

## 1. <u>2.3% Multiplier</u>

The benefit multiplier was increased from 2.2% per year of service to 2.3% per year of service effective October 1995.

## 2. <u>2.3% Retiree Gross-up</u>

Effective October 1995, current retirees received an increase in their benefit amount to bring their retirement benefit amount up to what it would be currently if they had retired under the 2.3% multiplier.

## GABRIEL, ROEDER, SMITH & COMPANY

#### 3. <u>\$10,000 Retiree Lump-Sum Death Benefit</u>

The Lump-sum death benefit payable upon the death of a retiree was increased from \$2,000 to \$10,000.

#### 4. Plan Participation Begins at Date of Hire

The six-month service requirement for participation was eliminated. Current active members were granted service for the six-month period between their date of hire and their date of participation.

#### N. LEGISLATED PLAN CHANGES ENACTED BY 1997 LEGISLATURE

#### 1. <u>2.6% Multiplier</u>

The benefit multiplier was increased from 2.3% per year of service to 2.6% per year of service effective October 1997.

#### 2. <u>2.6% Retiree Gross-up</u>

Effective October 1997, current retirees received an increase in their benefit amount to bring their retirement benefit amount up to what it would be currently if they had retired under the 2.6% multiplier.

#### 3. Military Service Purchase

Increased the number of months of military service that may be purchased from 24 to 48.

#### 4. Noncontributory Service Purchase

Allowed an employee to purchase noncontributory service for the following periods of time: (1) while employee was on workers' compensation leave, (2) while employee was on an authorized leave of absence, and (3) while employee performed service for the employer in a position for which the service was not otherwise creditable. The employee pays the full actuarial cost of the service purchase.

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#### 5. Employer Purchase of Unreduced Retirement Eligibility

Allowed the employer to purchase the amount of service required to qualify an employee for an unreduced retirement benefit at age 55. To be eligible for the purchase, the employee must never have been a highly compensated employee within the meaning of IRC Section 414(q). The cost of the service purchase is the full actuarial cost of both the benefit and the retirement eligibility.

#### O. LEGISLATED PLAN CHANGES ENACTED BY 1999 LEGISLATURE

#### 1. <u>2.7% Multiplier</u>

The benefit multiplier was increased from 2.6% per year of service to 2.7% per year of service effective October 1999.

#### 2. <u>2.7% Retiree Gross-up</u>

Effective October 1999, current retirees received an increase in their benefit amount to bring their retirement benefit amount up to what it would be currently if they had retired under the 2.7% multiplier.

#### 3. 23 & Out Provision

The service requirement at which a participant may retire with an unreduced retirement benefit was decreased from 25 years of creditable service to 23 years of creditable service.

4. <u>Pop-Up Provisions for Certain Joint and Survivor Payment Options</u>

Certain optional forms of payment which extend coverage to a joint annuitant (Options I, II, and III) were amended so that, should the contingent annuitant predecease the participant, the monthly annuity will revert to the amount that would have been payable under the normal form of payment.

#### GABRIEL, ROEDER, SMITH & COMPANY

## 5. <u>13<sup>th</sup> Check</u>

The Board was given the ability to make an additional payment to members in payment status in the form of a 13<sup>th</sup> check. The additional payment would be a percentage of the current monthly payment with a maximum percentage of 100%.

#### P. BENEFIT ENHANCEMENTS ENACTED BY THE BOARD OF TRUSTEES IN 2000

1. <u>"415 Restoration of Retirement Income Plan"</u>

Certain highly compensated members may have their retirement annuity limited because of Section 415(b)(1) of the Internal Revenue Code. A plan amendment effective January 1, 2000, provides for COA ERS to pay a benefit payment that exceeds the maximum benefit limitation imposed by the Internal Revenue Code from a separate, non-qualified, pay-as-you-go "Restoration of Retirement Income Plan".

2. <u>2.98% Multiplier</u>

The benefit multiplier was increased from 2.7% per year of service to 2.98% per year of service effective April 2000.

#### 3. 2.98% Retiree Gross-up

Effective April 2000, current retirees received an increase in their benefit amount to bring their retirement benefit amount up to what it would be currently if they had retired under the 2.98% multiplier.

4. <u>"Pop-up" Benefit Amendment</u>

The "pop-up" benefit is extended to retirees who selected the actuarial equivalent of Life Annuity option with underlying options of I, II, or III.

## Q. <u>BENEFIT ENHANCEMENTS ENACTED BY THE BOARD OF TRUSTEES IN 2001</u>

None

#### GABRIEL, ROEDER, SMITH & COMPANY

#### R. <u>BENEFIT ENHANCEMENTS ENACTED BY THE BOARD OF TRUSTEES IN 2002</u>

#### 1. <u>3.00% Multiplier</u>

Benefit multiplier was increased from 2.98% per year of service to 3.00% per year of service effective January 2002.

#### 2. <u>3.00% Retirees Gross-up</u>

Effective January 2002, current retirees received an increase in their benefit amount to bring their retirement benefit amount up to what it would be currently if they had retired under the 3.00% multiplier.

#### 3. Deferred Retirement Option Program

A "Back End" DROP was added as an optional form of retirement effective in 2002. The retiring member may elect to retroactively participate in a DROP. The member would receive a lump sum payment equal to 90% of the sum of the monthly annuities the participant would have received if the member had retired at the DROP entry date. No COLA's are included but changes in the benefit multiplier are reflected.

#### 4. Purchase of Permissive Time

A member may purchase up to five years of Permissive Time. The purchase price charged to the member is the anticipated actuarial cost to the System for the additional service. Minimum purchase is one month with a maximum of 60 months (5 years) or the number of months needed to reach first eligibility for retirement whichever is less.

#### 5. Conversion of Unused Sick Leave

At retirement an employee may elect to purchase Creditable Service for unused sick leave. The purchase price is equal to 16.0% of the employee's highest annual rate of pay multiplied by the number of years of service conversion. An employee must already be eligible for retirement to purchase the service.

#### GABRIEL, ROEDER, SMITH & COMPANY

#### S. <u>BENEFIT ENHANCEMENTS ENACTED BY THE BOARD OF TRUSTEES IN 2003</u>

#### 1. <u>"Pop-up" Benefit Amendment</u>

"Pop-up" benefit was extended to any Joint and Survivor option (including level income options), other than Joint and Last Survivor.

#### 2. <u>Permissive Time Amendment</u>

Permissive Time resolution was amended removing the provision that restricts members from purchasing Permissive Time in excess of the amount needed to reach first retirement eligibility.

#### T. BENEFIT ENHANCEMENTS ENACTED BY THE BOARD OF TRUSTEES IN 2004

None

#### GABRIEL, ROEDER, SMITH & COMPANY

# **DEFINITION OF TERMS**

#### 1. Actuarial Cost Method

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

## 2. Present Value of Future Benefits

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

## 3. Normal Cost

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

#### 4. Actuarial Accrued Liability

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

#### 5. Entry Age Actuarial Cost Method

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

#### 6. Unfunded Actuarial Accrued Liability

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

#### 7. Actuarial Value of Assets

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

## GABRIEL, ROEDER, SMITH & COMPANY

City of Austin Employees' Retirement System Actuarial Valuation - December 31, 2004

#### DEFINITION OF TERMS (Continued)

#### 8. Actuarial Gain or Loss

From one valuation to the next, if the experience of the plan differs from that anticipated by the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust had a yield of 12% based on actuarial value, while the assumed yield on the actuarial value of assets was 7.75%.

#### GABRIEL, ROEDER, SMITH & COMPANY

## STATISTICAL TABLES

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## GABRIEL, ROEDER, SMITH & COMPANY

**TABLE 17** 

# DISTRIBUTION OF ALL ACTIVE PARTICIPANTS BY AGE AND LENGTH OF SERVICE AS OF **DECEMBER 31, 2004**

A verage A nnual Salary	26,214	31,456	36,059	41,192	45,209	47,542	49,757	48,803	47,307	45,420	43,609
Number of Employ ees	174	532	917	1,028	1,366	1,373	1,063	716	256	64	7,489
35+	0	0	0	0	0	0	0	7	0	0	7
30-34	0	0	0	0	0	1	9	9	4	-	18
25-29	0	0	0	0	9	24	41	44	5	1	121
20-24	0	0	0	9	127	189	130	73	27	3	555
15-19	0	0	1	ΓL	219	242	209	125	51	13	937
10-14	0	1	78	218	257	279	208	149	54	19	1,263
5-9	7	95	287	286	343	257	215	138	54	15	1,692
4	18	85	116	101	113	101	70	54	25	4	687
ε	24	06	110	96	06	94	68	50	14	2	638
0	19	84	111	83	69	64	41	30	12	0	513
	33	59	ΓL	60	59	43	27	14	ŝ	0	377
0	78	118	137	101	83	79	48	31	5	9	686
Attained Age	Under 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 & Over	All Ages

## GABRIEL, ROEDER, SMITH & COMPANY

**Actuarial Section** 

## COA ERS 2004 Comprehensive Annual Financial Report

# DISTRIBUTION OF ALL ACTIVE PARTICIPANTS BY SERVICE AND CURRENT RATE OF PAY AS OF DECEMBER 31, 2004

Completed Years of Service	Number of Employees	al Average Salary
0	686	\$ 34,016
1	377	36,357
2	513	37,090
3	638	37,638
4	687	40,619
5-9	1,692	41,867
10-14	1,263	48,896
15-19	937	51,298
20-24	555	53,392
25-29	121	58,288
30-34	18	64,867
35+	2	 44,481
All Years	7,489	\$ 43,609

GABRIEL, ROEDER, SMITH & COMPANY

# AVERAGE BENEFIT PAYMENT AMOUNT

Year Ending	Average Monthly Benefit Payment
December 31, 1993	\$1,148
December 31, 1995	\$1,362
December 31, 1997	\$1,731
December 31, 1998	\$1,733
December 31, 1999	\$1,926
December 31, 2000	\$2,058
December 31, 2001	\$2,111
December 31, 2002	\$2,172
December 31, 2003	\$2,187
December 31, 2004	\$2,182

## GABRIEL, ROEDER, SMITH & COMPANY

# DISTRIBUTION OF RETIRED MEMBERS BY TYPE OF BENEFIT

Benefit Type	Number of Participants*
Life Only	839
100% Joint & Survivor	818
50% Joint & Survivor	190
66 2/3% Joint & Survivor	181
66 2/3% Joint & Last Survivor	41
Life Only Level Income	247
66 2/3% Joint & Survivor Level Income	188
15 Year Certain & Life	88
Joint & 100% Survivor Level Income	160
75% Joint & Survivor	1
75% Joint & Last Survivor	2
75% Joint & Survivor Level Income	1
5 Year Certain & Life	1
10 Year Certain & Life	2

\*The counts reflect only current retired members. Beneficiaries and disabled retirees are not included.

GABRIEL, ROEDER, SMITH & COMPANY

City of Austin Employees' Retirement System Actuarial Valuation - December 31, 2004

# SCHEDULE OF PARTICIPATING EMPLOYERS

The City of Austin and the City of Austin Employees' Retirement System are the only participating employers in the plan.

#### GABRIEL, ROEDER, SMITH & COMPANY

	Retiree		
Year Ending	Annuities*	Refunds	Death Benefits
December 31, 1993	\$16,438,998	\$3,277,066	\$708,755
December 31, 1994	\$20,715,787	\$4,340,500	\$575,988
December 31, 1995	\$23,205,043	\$7,991,565	\$486,267
December 31, 1996	\$28,179,046	\$7,854,935	\$822,568
December 31, 1997	\$32,515,281	\$6,123,471	\$1,224,799
December 31, 1999	\$48,073,639	\$4,867,018	\$1,751,643
December 31, 2000	\$58,111,905	\$4,945,186	\$1,184,034
December 31, 2001	\$64,597,837	\$3,991,123	\$1,415,546
December 31, 2002	\$70,360,017	\$3,957,964	\$928,730
December 31, 2003	\$76,556,386	\$4,476,716	\$1,660,137
December 31, 2004	\$81,428,117	\$5,112,109	\$1,273,945

\*Includes lump sum payments due to DROP and Partial Lump Sum Option (PLSO) elections.

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