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**REPORT ON THE SIXTY-FIRST ANNUAL VALUATION
OF THE TEACHERS' AND STATE EMPLOYEES'
RETIREMENT SYSTEM OF NORTH CAROLINA
PREPARED AS OF DECEMBER 31, 2003**



October 12, 2004

Board of Trustees
Teachers' and State Employees'
Retirement System of North Carolina
325 North Salisbury Street
Raleigh, NC 27603

Members of the Board:

We submit herewith our report on the sixty-first annual valuation of the Teachers' and State Employees' Retirement System of North Carolina prepared as of December 31, 2003. The report has been prepared in accordance with North Carolina General Statute 135-6(o).

The system was amended effective July 1, 2004 to provide a 1.70% increase in the benefit to beneficiaries on the roll as of July 1, 2003 and to provide a prorated portion of a 1.70% increase for beneficiaries who retired after July 1, 2003 but before June 30, 2004. The cost of this amendment was covered by gains which developed during the 2002 valuation year.

The Appropriations Act of 200~~4~~⁵ sets contributions at 2.17% of payroll effective for the fiscal year ending June 30, 200~~5~~⁶. The valuation has been prepared in accordance with the parameters of Statement Nos. 25 and 27 of the Governmental Accounting Standards Board. The annual required contribution (ARC) under GASB for the 2005-2006 fiscal year is 1.70% of payroll which will liquidate the unfunded accrued liability within a 9-year period. On this basis, there is a preliminary reserve from undistributed gains equivalent to 0.47% of payroll. However, the System is owed 0.63% of employer contributions, the unpaid portion of the amount escrowed during the 2000/2001 fiscal year. Assuming that the undistributed gains are used to apply towards the amount owed to the System, there are no remaining undistributed gains to be used for benefit improvements.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

Edward A. Macdonald
Principal, Consulting Actuary

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**REPORT ON THE SIXTY-FIRST ANNUAL VALUATION OF THE
TEACHERS' AND STATE EMPLOYEES' RETIREMENT SYSTEM OF NORTH CAROLINA
PREPARED AS OF DECEMBER 31, 2003**

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of December 31, 2003, presents the results of the sixty-first actuarial valuation of the system. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below. The current valuation reflects the benefit increases granted to beneficiaries as of July 1, 2004 and amendments to the system effective through July 1, 2004.

**TABLE I
SUMMARY OF PRINCIPAL RESULTS**

VALUATION DATE	12/31/03	12/31/02
Active members included in valuation		
Number	303,768	296,377
Annual compensation	\$ 10,082,153,001	\$ 9,734,447,779
Beneficiaries		
Number	123,077	118,129
Annual allowances	\$ 2,147,805,407	\$ 2,004,346,901
Assets		
Actuarial value	\$ 45,117,507,733	\$ 43,226,837,217
Market value	46,350,333,984	40,584,635,407
Unfunded accrued liability	\$ (3,383,806,385)	\$ (3,362,853,828)
CONTRIBUTIONS FOR FISCAL YEAR ENDING	June 30, 2006	June 30, 2005
<u>Appropriations Act</u>		
Employer contribution rate		
Normal	6.73%	6.81%
Accrued liability	<u>(4.56)</u>	<u>(4.76)</u>
Total	2.17%	2.05%
Liquidation period	11 years	11 years
<u>GASB 25/27</u>		
Annual required contribution (ARC) of employer		
Normal	6.73%	6.81%
Accrued liability	<u>(5.03)</u>	<u>(5.17)</u>
Total	1.70%	1.64%
Liquidation period	9 years	9 years
Preliminary undistributed gains	0.47%	0.41%
Estimated adjustment for required Employer contributions not made	<u>(0.63%)</u>	<u>(1.05%)</u>
Reserve from undistributed gains	N/A	N/A

2. The valuation balance sheet showing the results of the valuation is given in Section III.
3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains during the valuation year are given in Section V and the rates of contribution payable by employers are given in Section VI.
4. Schedule B of this report outlines the full set of actuarial assumptions and methods employed. There have been no changes since the previous valuation. Schedule A of this report presents the development of the actuarial value of assets.
5. Schedule C gives a summary of the benefit and contribution provisions of the system.

SECTION II - MEMBERSHIP DATA

Data regarding the membership of the system for use as a basis for the valuation were furnished by the system's office. The following tables summarize the membership of the system as of December 31, 2003 upon which the valuation was based. Detailed tabulations of the data are given in Schedule D.

TABLE II

**THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS
INCLUDED IN THE VALUATION AS OF DECEMBER 31, 2003**

GROUP	NUMBER	ANNUAL COMPENSATION
Teachers	138,409	\$ 4,888,498,634
Employees	162,691	5,080,099,004
Law Enforcement Officers	<u>2,668</u>	<u>113,555,363</u>
Total	303,768	\$10,082,153,001

There are, in addition, 49,945 inactive members and 2,810 members who were excluded from the table because of insufficient data. The results of the valuation were adjusted to take these members into account.

TABLE III

**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES
AND SURVIVORS ON THE ROLL AS OF DECEMBER 31, 2003**

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
<u>Beneficiaries Receiving Service Retirement Allowances</u>		
Teachers	51,459	\$ 1,150,755,286
Employees	53,223	737,401,894
Law Enforcement Officers	<u>1,707</u>	<u>44,165,648</u>
Total	106,389	\$ 1,932,322,828
<u>Beneficiaries Receiving Disability Retirement Allowances</u>		
Teachers	3,190	\$ 61,730,215
Employees	2,988	40,009,173
Law Enforcement Officers	<u>161</u>	<u>3,502,652</u>
Total	6,339	\$ 105,242,040
<u>Benefits to Survivors of Deceased Beneficiaries</u>		
Teachers	3,144	\$ 43,477,221
Employees	6,954	62,597,415
Law Enforcement Officers	<u>251</u>	<u>4,165,903</u>
Total	10,349	\$ 110,240,539
 Grand Total	 <u>123,077</u>	 <u>\$ 2,147,805,407</u>

SECTION III - VALUATION BALANCE SHEET

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of December 31, 2003 and, for comparison purposes, as of the immediately previous valuation date of December 31, 2002. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The development of the actuarial value of assets is presented in Schedule A.

TABLE IV

VALUATION BALANCE SHEET
SHOWING THE ASSETS AND LIABILITIES OF THE
TEACHERS' AND STATE EMPLOYEES'
RETIREMENT SYSTEM OF NORTH CAROLINA

ASSETS	DECEMBER 31, 2003	DECEMBER 31, 2002
Current actuarial value of assets:		
Annuity Savings Fund	\$ 7,129,851,440	\$ 6,767,321,423
Pension Accumulation Fund	<u>37,987,656,293</u>	<u>36,459,515,794</u>
Total current assets	\$ 45,117,507,733	\$ 43,226,837,217
Future member contributions to Annuity Savings Fund	\$ 5,898,080,946	\$ 5,727,430,260
Prospective contributions to Pension Accumulation Fund:		
Normal contributions	\$ 6,517,379,445	\$ 6,405,176,174
Unfunded accrued liability contributions	(3,383,806,385)	(3,362,853,828)
Undistributed gain contributions	<u>314,081,162</u>	<u>269,001,016</u>
Total prospective contributions	\$ 3,447,654,222	\$ 3,311,323,362
Total Assets	<u>\$ 54,463,242,901</u>	<u>\$ 52,265,590,839</u>
LIABILITIES		
Annuity Savings Fund:		
Past member contributions	\$ 7,129,851,440	\$ 6,767,321,423
Future member contributions	<u>5,898,080,946</u>	<u>5,727,430,260</u>
Total contributions to Annuity Savings Fund	\$ 13,027,932,386	\$ 12,494,751,683
Pension Accumulation Fund:		
Benefits currently in payment	\$ 19,273,002,725	\$ 17,993,715,435
Benefits to be paid to current active members	21,504,021,222	21,273,364,500
Reserve for increases in retirement allowances effective July 1, 2004 (July 1, 2003 for December 31, 2002 figure)	344,205,406	234,758,205
Reserve from undistributed gains	<u>314,081,162</u>	<u>269,001,016</u>
Total benefits payable from Pension Accumulation Fund	\$ 41,435,310,515	\$ 39,770,839,156
Total Liabilities	<u>\$ 54,463,242,901</u>	<u>\$ 52,265,590,839</u>

SECTION IV - COMMENTS ON VALUATION

The valuation balance sheet gives the following information with respect to the funds of the system as of December 31, 2003.

Annuity Savings Fund

The Annuity Savings Fund is the fund to which are credited contributions made by members together with interest thereon. When a member retires, the amount of his accumulated contributions is transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The assets credited to the Annuity Savings Fund on December 31, 2003, which represent the accumulated contributions of members to that date, amounted to \$7,129,851,440. The balance sheet also shows that the future contributions by members have a present value of \$5,898,080,946. The present value of both past and future contributions of members is therefore equal to \$13,027,932,386. The liabilities of this fund are also shown to be equal to \$13,027,932,386.

Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which the contributions made by employers are credited and from which are paid all benefits on account of beneficiaries and their survivors.

The current market related actuarial value of assets creditable to the Pension Accumulation Fund on December 31, 2003 amounted to \$37,987,656,293. The liabilities on account of active members amounted to \$21,504,021,222. In addition, the balance sheet indicates liabilities of \$19,273,002,725 on account of all benefits payable to beneficiaries and survivors as of December 31, 2003. The balance sheet also shows a reserve of \$344,205,406 to provide for the increases in retirement allowances effective July 1, 2004, and a reserve from undistributed gains of \$314,081,162. The total liabilities of the Pension Accumulation Fund, therefore, amounted to \$41,435,310,515. The difference between these liabilities and the current assets credited to this fund is \$3,447,654,222 which represents the present value of future contributions to be made by the employers. Of this amount, \$6,517,379,445 represents the present value of prospective normal contributions by the employers, \$(3,383,806,385) represents the present value of prospective accrued liability contributions by employers and the balance of \$314,081,162 represents the present value of prospective contributions on account of undistributed actuarial gains.

The retirement act provides that the contributions of employers shall consist of a normal contribution and an accrued liability contribution. G.S. 135-8(d)(2) of the retirement act provides that the normal contribution rate is to be determined as the uniform percentage of the earnable compensation of the average new entrant throughout his entire period of active service and is to be determined after each valuation. The valuation indicates that the uniform normal percentage contribution rate should be set at 6.73% of compensation.

The present valuation indicates that if the employer contribution rate is set at 2.17% of payroll in accordance with the Appropriations Act of 2004, the accrued liability rate would be equal to (4.56%) of payroll effective July 1, 2005. The required employer contribution is 1.70% which will liquidate the unfunded accrued liability within a 9-year period.

SECTION V - COMMENTS ON EXPERIENCE AND GAINS

The unfunded accrued liability has decreased to \$(3,384) million from \$(3,363) million since the prior valuation. The significant items which affected the unfunded accrued liability were; amendments effective July 1, 2004 which increased the unfunded accrued liability by \$344 million and the 2003 adjustment towards market value of assets which decreased the unfunded accrued liability by \$308 million.

The valuation results indicates that there is a preliminary reserve from undistributed gains equivalent to 0.47% of payroll. However, the System is owed 0.63% of employer contributions, the unpaid portion of the amount escrowed during the 2000/2001 fiscal year. Assuming the undistributed gains are used to apply towards the amount owed to the System, there are no remaining undistributed gains to provide for benefit improvements. Each 1.0% increase in retirement allowances as of July 1, 2005 to beneficiaries on the retirement roll on July 1, 2004 and a prorated portion of each 1.0% increase as of July 1, 2005 for beneficiaries who retired after July 1, 2004 but before June 30, 2005 is equivalent to 0.32% of payroll. The cost of each 0.01% increase in the defined benefit formula with a corresponding increase in retirement allowances to all current benefit recipients is 0.40% of payroll.

SECTION VI - RATES OF PAYMENT TO PENSION ACCUMULATION FUND

The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Pension Accumulation Fund and the Death Benefit Fund under the provisions of the retirement act. The following table shows the rates of contribution payable by employers as determined from the Appropriations Act and the present valuation for the 2005/2006 fiscal year.

TABLE V**RATES OF CONTRIBUTION PAYABLE BY EMPLOYERS
FOR THE 2005/2006 FISCAL YEAR
BASED ON THE APPROPRIATIONS ACT
AND THE VALUATION AS OF DECEMBER 31, 2003**

CONTRIBUTION	RATE
Normal	6.73%
Actuarial Accrued Liability	<u>(4.56)</u>
Total	2.17%

SECTION VII - ACCOUNTING INFORMATION

1. Statement Nos. 25 and 27 of the Governmental Accounting Standards Board (GASB) set forth certain items of information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF DECEMBER 31, 2003**

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	123,077
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	52,755
Active Participants	<u>303,768</u>
Total	479,600

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
12/31/98	\$31,847,438,198	\$30,354,221,675	\$(1,493,216,523)	104.9%	\$7,994,825,684	(18.68)%
12/31/99*	36,119,250,376	32,787,108,267	(3,332,142,109)	110.2	8,437,649,280	(39.49)
12/31/00*	39,773,747,165	35,248,769,986	(4,524,977,179)	112.8	9,001,353,605	(50.27)
12/31/01	42,104,086,026	37,713,663,200	(4,390,422,826)	111.6	9,494,602,568	(46.24)
12/31/02	43,226,837,217	39,863,983,389	(3,362,853,828)	108.4	9,734,447,779	(34.55)
12/31/03	45,117,507,733	41,733,701,348	(3,383,806,385)	108.1	10,082,153,001	(33.56)

* These numbers have been revised since the previous valuation to reflect the requirements enacted by the legislature.

3. Following is the calculation of the annual pension cost and net pension obligation for the fiscal year ending June 30, 2004.

Annual Pension Cost and Net Pension Obligation for Fiscal Year Ending 6/30/2004

(a) Employer annual required contribution	\$ 22,084,000
(b) Interest on net pension obligation	7,444,000
(c) Adjustment to annual required contribution	<u>(15,377,000)</u>
(d) Annual pension cost: (a) + (b) + (c)	\$ 14,151,000
(e) Employer contributions made for fiscal year ending 6/30/2004	<u>53,135,000</u>
(f) Increase (decrease) in net pension obligation: (d) – (e)	\$ (38,984,000)
(g) Net pension obligation beginning of fiscal year	<u>102,675,000</u>
(h) Net pension obligation end of fiscal year: (f) + (g)	\$ 63,691,000

TREND INFORMATION

<u>Year Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Percentage of APC Contributed</u>	<u>Net Pension Obligation</u>
June 30, 2002	\$179,903,000	154.0%	\$111,273,000
June 30, 2003	(8,598,000)	0.0	102,675,000
June 30, 2004	14,151,000	375.5	63,691,000

4. The annual required contribution (ARC) of the employer as a percentage of payroll, determined in accordance with the parameters of GASB 25/27, is shown below. The accrued liability rate is based on amortization of the unfunded actuarial accrued liability of \$(3,383,806,385) over a 9-year period from the valuation date.

**2005/2006 FISCAL YEAR
ANNUAL REQUIRED CONTRIBUTION (ARC)
BASED ON THE VALUATION AS OF DECEMBER 31, 2003**

<u>ANNUAL REQUIRED CONTRIBUTION (ARC)</u>	<u>RATE</u>
Normal	6.73%
Accrued liability	<u>(5.03)</u>
Total	1.70%

5. Additional information as of December 31, 2003 follows.

Valuation date	12/31/03
Actuarial cost method	Entry age
Amortization method	Level dollar open
Remaining amortization period	9 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.25%
Projected salary increases*	5.45-12.08%
*Includes inflation at	3.75%
Cost-of-living adjustments	N/A

SCHEDULE A**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
FOR THE YEAR ENDING DECEMBER 31, 2003**

1.	Actuarial Value of Assets as of December 31, 2002	\$ 43,226,837,217
2.	2003 Net Cash Flow	
	a. Contributions	695,068,051
	b. Disbursements	<u>2,192,276,007</u>
	c. Net Cash Flow: (a) - (b)	(1,497,207,956)
3.	Expected Investment Return: [(1) x .0725] + [(2)c x .03625]	3,079,671,909
4.	Expected Actuarial Value of Assets as of December 31, 2003: (1) + (2)c + (3)	44,809,301,170
5.	Market Value of Assets as of December 31, 2003	46,350,333,984
6.	Excess of Market Value over Expected Actuarial Value of Assets: (5) - (4)	1,541,032,814
7.	20% Adjustment towards Market Value: (6) x .20	308,206,563
8.	Actuarial Value of Assets as of December 31, 2003: (4) + (7)	45,117,507,733
9.	Rate of investment return on actuarial value	7.98%
10.	Rate of investment return on market value	18.23%

SCHEDULE B**STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS**

Assumptions are based on the experience investigation prepared as of December 31, 1999 and adopted by the Board of Trustees on December 14, 2000.

INTEREST RATE: 7.25% per annum, compounded annually.

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

GENERAL EMPLOYEES

Annual Rates of

Age	Withdrawal* and Vesting		Death		Disability		Service Retirement**	
	Male	Female	Male	Female	Male	Female	Male	Female
	25	.0800	.0800	.0005	.0003	.0001	.0001	
30	.0800	.0789	.0006	.0003	.0004	.0004		
35	.0637	.0653	.0009	.0005	.0010	.0010		
40	.0435	.0451	.0012	.0007	.0029	.0018		
45	.0350	.0363	.0022	.0010	.0049	.0033		
50	.0450	.0350	.0039	.0017	.0084	.0050	.3000	.3000
55	.0450	.0350	.0061	.0025	.0144	.0088	.3000	.3500
60			.0092	.0042	.0240	.0138	.2000	.2000
65			.0156	.0071			.5000	.5000
69			.0248	.0109			.2500	.2500

TEACHERS

Annual Rates of

Age	Withdrawal* and Vesting		Death		Disability		Service Retirement**	
	Male	Female	Male	Female	Male	Female	Male	Female
	25	.0500	.0600	.0004	.0002	.0001	.0002	
30	.0500	.0600	.0005	.0003	.0001	.0003		
35	.0500	.0415	.0007	.0004	.0003	.0006		
40	.0316	.0275	.0009	.0006	.0007	.0010		
45	.0222	.0220	.0014	.0008	.0014	.0018		
50	.0350	.0300	.0025	.0014	.0023	.0032	.2500	.3000
55	.0350	.0300	.0043	.0021	.0047	.0055	.3000	.4000
60			.0066	.0034	.0077	.0102	.2000	.2000
65			.0101	.0058			.4000	.4000
69			.0156	.0087			.2000	.2000

* Higher rates of withdrawal are used during the first 3 years of membership in the system.

** An additional 20% of general employees and an additional 30% of teachers are assumed to retire in the year when first eligible for unreduced service retirement. Special rates are used for early service retirement.

LAW ENFORCEMENT OFFICERS

Annual Rates of

Age	Withdrawal and Vesting	Death		Disability		Service Retirement*
		Ordinary	Accidental	Ordinary	Accidental	
25	.0769	.00040	.00004	.0032	.0001	
30	.0547	.00051	.00006	.0040	.0003	
35	.0336	.00071	.00008	.0052	.0008	
40	.0223	.00102	.00011	.0068	.0011	
45	.0151	.00174	.00019	.0100	.0010	
50	.0200	.00316	.00035	.0168	.0008	.1500
55		.00509	.00057			.2000
60		.00755	.00084			.1500
65		.01248	.00139			.7500
69		.02001	.00222			.1500

* An additional 40% are assumed to retire in the year when first eligible for unreduced service retirement. Special rates are used for early service retirement.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Age	Annual Rate of Salary Increase	
	Teachers and General Employees	Law Enforcement Officers
25	10.64%	8.62%
30	11.90	7.79
35	9.01	6.96
40	7.28	6.50
45	6.54	6.29
50	6.21	6.21
55	6.01	6.00
60	5.70	5.95
64	5.48	5.91
65	5.47	5.91
69	5.45	5.88

DEATH AFTER RETIREMENT: According to the 1983 Group Annuity Mortality Tables set forward one year. For male teachers the table is set back one year. Special mortality tables are used for the period after disability retirement.

ADMINISTRATIVE EXPENSES: 0.10% of payroll.

MARRIAGE ASSUMPTION: 100% married with the husband four years older than his wife.

VALUATION METHOD: Entry age normal cost method. Entry age is established on an individual basis.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule A. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value.

SCHEDULE C**SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS**

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

"Average final compensation" as used in the summary means the average annual compensation during the four consecutive years of membership service which afford the highest such average. "Membership service" means service represented by regular contributions. "Prior service" means service prior to July 1, 1941 for which credit is allowed. "Creditable service" means the sum of prior service plus membership service. Creditable service may also include certain special purchased service.

BENEFITS**Service Retirement Allowance****Condition for Allowance**

A service retirement allowance is payable to any member who retires from service after he has attained age 60 and completed 5 years of membership service (age 55 and 5 years of creditable service) or completed 30 years of creditable service.

Amount of Allowance

On service retirement on or after age 65 (55), or after age 60 and completion of 25 years of creditable service, or after completion of 30 years of creditable service, a member receives a retirement allowance equal to 1.82% of his average final compensation multiplied by the number of years of his creditable service.

If a member who is not a law enforcement officer has not attained age 65 or has not completed 25 or more years of creditable service at the time of his retirement, his allowance is reduced 1/4 of 1% for each month by which his age at retirement is less than age 65.

In no event will a member whose creditable service commenced on or before June 30, 1963 receive a smaller retirement allowance than he would have received under the benefit provisions of the system in effect on that date.

Early Service Retirement Allowance**Condition for Allowance**

An early service retirement allowance is payable to any member who retires from service after he has attained age 50 and completed 20 (15) years of creditable service but prior to becoming eligible for a service retirement allowance.

Amount of Allowance

The member's early service retirement allowance is equal to 1.82% of his average final compensation multiplied by the number of years of his creditable service at his date of retirement reduced by the lesser of:

(i) $5/12$ ($1/3$) of 1% for each month by which his age is less than 60 (55), plus $1/4$ of 1% for each month by which his age is less than 65.

(ii) 5% times the difference between 30 years and his creditable service at retirement.

Deferred Service Retirement Allowance

Any member who separates from service prior to becoming eligible for a service retirement allowance or an early service retirement allowance after completing 5 or more years of membership service and who leaves his total accumulated contributions in the system may receive a deferred retirement allowance, beginning at age 60 (55), computed in the same way as a service retirement allowance, or, if the member has 20 or more years of service, at age 50 computed in the same way as an early service retirement allowance, on the basis of his creditable service and compensation to the date of separation.

Return of Contributions

Upon the withdrawal of a member without a retirement allowance and upon his request, his contributions are returned to him, together with accumulated regular interest thereon if he has at least 5 years of membership service.

Upon the death of a member before retirement, his contributions, together with the full accumulated regular interest thereon, are paid to his estate or to person(s) designated by the member unless the designated beneficiary, if eligible, elects the survivor's alternate benefit described below.

Survivor's Alternate Benefit

Upon the death of a member in service who has attained age 60(55) and has completed 5 years of membership (creditable) service or completed 20 years of creditable service, his designated beneficiary may elect to receive a benefit equal to that which would have been payable under the provisions of Option 2 had the member retired on the first day of the month following his death and elected such option, in lieu of the member's accumulated

contributions, provided the member had not instructed the Board of Trustees in writing that he did not wish the alternate benefit to apply.

Death After Retirement

Upon the death of a beneficiary who did not retire under an effective election of Option 2 or Option 3, an amount equal to the excess if any, of his accumulated contributions at retirement over the retirement allowance payments received is paid to a designated person or to the beneficiary's estate.

Upon the death of the survivor of a beneficiary who retired under an effective election of Option 2 or Option 3, an amount equal to the excess, if any, of the beneficiary's accumulated contributions at retirement over the total retirement allowance payments received is paid to such other person designated by the beneficiary or to the beneficiary's estate.

Optional Arrangements at Retirement

In lieu of the full retirement allowance, any member may elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1 - A member retiring prior to July 1, 1993, may elect that at his death within 10 years from his retirement date, an amount equal to his accumulated contributions at retirement, less 1/120 for each month he has received a retirement allowance, is paid to his estate, or to a person(s) designated by the member, or

Option 2 - At the death of the member his allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his retirement, or

Option 3 - At the death of the member one-half of his allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his retirement.

Option 4 - A member may elect to receive a retirement allowance in such amount that, together with his Social Security benefit, he will receive approximately the same income per annum before and after the earliest age at which he becomes eligible to receive the Social Security benefit.

Option 5 - A member retiring prior to July 1, 1993 may elect to receive a reduced retirement allowance under the provisions of Option 2 or Option 3 in conjunction with the provisions of Option 1.

Option 6 - A member may elect either Option 2 or Option 3 with the added provision that in the event the designated beneficiary predeceases the member, the retirement allowance payable to the member after the designated beneficiary's death shall be equal to the retirement allowance which would have been payable had the member not elected the option.

**Post-Retirement Increases
in Allowances**

Future increases in allowances may be granted if the Consumer Price Index rises, provided the liabilities on account of such increases do not increase the total employer rate of contribution.

CONTRIBUTIONS

REGULAR CONTRIBUTIONS

By Members

Each member contributes 6% of his compensation.

By Employers

Employers make annual contributions consisting of a normal contribution and an accrued liability contribution. The normal contribution covers the liability on account of current service and is determined by the actuary after each valuation.

The accrued liability contribution covers the liability on account of service rendered before the establishment of the retirement system and the liability on account of increases in benefits for service rendered prior to the effective date of any amendment.

SCHEDULE D**TABLE 1**

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF DECEMBER 31, 2003**

Age	Number	Men		Women	
		Number	Amount	Number	Amount
16	1		\$ 2,845		
17	1		28,236		
18	3		22,337	3	\$ 11,506
19	38		360,128	31	260,818
20	91		998,203	90	816,276
21	225		2,839,146	249	2,751,221
22	380		5,349,451	847	10,590,274
23	789		12,846,951	2,380	36,741,111
24	1,194		22,580,492	3,479	68,629,477
25	1,417		30,573,511	4,022	89,571,573
26	1,616		38,687,357	4,149	98,699,083
27	1,681		42,016,391	4,307	108,236,307
28	1,754		46,492,467	4,212	109,777,800
29	1,926		53,538,308	4,512	121,951,126
30	2,038		58,037,532	4,379	120,776,052
31	2,121		63,337,838	4,495	126,036,617
32	2,307		70,667,831	4,778	135,787,571
33	2,571		80,281,166	5,379	154,238,968
34	2,484		81,432,673	5,249	151,407,542
35	2,359		78,918,778	5,043	145,912,683
36	2,308		77,028,264	4,857	140,476,177
37	2,220		76,035,625	4,861	140,516,222
38	2,371		80,919,440	4,807	137,453,082
39	2,436		84,441,797	5,176	148,810,590
40	2,532		87,942,895	5,442	158,291,519
41	2,639		94,279,198	5,452	162,725,733
42	2,591		91,966,641	5,856	175,556,606
43	2,609		94,992,247	6,074	186,167,669
44	2,672		98,334,586	6,119	191,643,551
45	2,771		101,807,157	6,221	195,314,080
46	2,762		104,020,423	6,676	220,561,560
47	2,943		112,181,983	6,929	236,839,325
48	2,879		112,076,615	6,911	243,206,825
49	2,983		120,029,708	7,016	254,190,120
50	3,085		127,152,338	7,392	274,736,546
51	3,109		130,741,166	7,345	281,629,148
52	3,019		132,091,027	6,960	270,964,868
53	2,838		122,596,946	6,502	250,967,698
54	2,694		116,559,612	5,907	223,421,215
55	2,700		117,114,986	5,566	210,061,130
56	2,572		111,447,080	5,265	193,834,571
57	2,606		116,159,372	5,444	201,296,763
58	1,776		74,843,478	3,701	134,027,823
59	1,732		74,602,433	3,339	120,678,346
60	1,547		67,762,076	3,010	106,816,815

TABLE 1
THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF DECEMBER 31, 2003

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
61	1,427	\$ 62,281,894	2,487	\$ 85,701,811
62	1,071	46,615,055	1,710	58,211,315
63	680	29,335,152	1,194	40,308,775
64	558	26,450,292	811	27,729,760
65	468	21,640,050	631	21,031,539
66	297	13,617,974	391	12,815,639
67	229	9,535,238	278	8,620,394
68	177	7,490,757	209	6,357,563
69	153	6,564,197	189	5,704,728
70	122	5,273,970	115	3,309,040
71	83	3,280,734	95	2,464,267
72	75	3,152,278	62	1,586,101
73	58	2,924,163	54	1,730,737
74	55	1,873,292	37	879,923
75	36	1,282,853	25	671,997
76	25	1,059,644	20	538,744
77	15	521,164	20	566,568
78	7	208,325	8	195,323
79	12	349,467	10	158,954
80	3	63,024	5	111,577
81	12	371,362	1	2,491
82	4	132,111	4	114,300
83	4	115,848	1	15,170
84	2	53,145	1	48,448
85	4	254,114	2	102,153
86	3	52,373	2	48,385
87			2	63,765
88			2	42,337
	94,970	\$ 3,460,637,210	208,798	\$ 6,621,515,791

TABLE 2

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY SERVICE
AS OF DECEMBER 31, 2003**

Years of Service	Number	Men		Women	
			Amount	Number	Amount
0	4,719	\$	35,160,448	9,342	\$ 69,977,235
1	9,913		217,295,865	21,361	415,515,850
2	7,196		217,673,621	16,394	434,061,563
3	6,821		216,225,856	16,252	445,307,748
4	6,017		195,582,040	14,401	397,550,391
5	5,272		176,648,441	12,748	364,879,125
6	4,694		163,282,614	11,033	328,491,254
7	4,205		148,254,754	10,198	317,295,838
8	3,619		133,895,611	7,682	244,664,057
9	3,500		129,884,064	7,180	235,455,484
10	3,564		134,859,735	6,386	216,279,418
11	2,728		109,695,892	5,853	205,381,559
12	2,646		105,518,455	5,065	182,386,129
13	2,152		89,058,961	4,331	159,093,236
14	2,468		100,185,335	5,142	188,337,207
15	2,352		95,461,876	5,451	199,014,122
16	2,139		93,816,528	4,800	183,812,262
17	1,872		84,848,762	3,883	154,793,246
18	1,729		81,103,187	3,794	151,629,674
19	1,889		87,388,757	3,912	157,786,168
20	1,757		82,681,552	3,445	144,212,613
21	1,401		68,377,762	2,551	110,231,279
22	1,231		59,902,192	2,550	112,285,631
23	1,176		58,644,931	2,977	127,428,974
24	1,314		67,678,276	3,495	149,004,605
25	1,387		72,078,967	3,545	159,134,075
26	1,359		73,849,995	3,243	151,550,409
27	1,270		70,108,656	2,855	139,771,558
28	1,124		64,815,303	2,587	131,497,665
29	928		54,504,193	2,392	127,044,713
30	724		43,480,398	1,598	85,929,834
31	439		27,783,309	782	42,949,470
32	360		25,036,554	500	28,072,169
33	253		17,954,840	354	20,034,848
34	221		16,796,107	229	13,114,720
35	140		10,483,133	149	8,491,217
36	128		9,605,566	102	5,800,520
37	82		6,247,329	77	4,338,838
38	63		5,259,978	49	2,649,740
39	34		2,643,492	31	1,881,361
40	28		2,314,777	16	893,510
41	15		1,288,604	12	715,297
42	14		1,289,097	9	515,863
43	10		895,447	14	804,402
44	5		352,177	7	312,180
45	2		125,078	2	109,334

TABLE 2

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY SERVICE
AS OF DECEMBER 31, 2003**

CONTINUED

Years of Service	Number	Men		Women	
			Amount	Number	Amount
46	3	\$	199,905	2	\$ 104,173
47	1		89,606	4	377,648
48	2		137,124	3	154,929
49				2	81,806
50	1		35,621		
51	1		34,455	3	119,591
52				1	74,104
53	2		101,984		
54				1	32,777
55				1	30,833
56				2	53,539
Total	94,970	\$	3,460,637,210	208,798	\$ 6,621,515,791

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2003**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

Age	Men		Women	
	Number	Amount	Number	Amount
13	1	\$ 2,289		
17			1	\$ 2,977
18			1	3,448
19	1	16,275	1	20,747
20	2	26,848	1	8,769
21	3	25,277	3	42,966
22	1	3,798	3	32,084
23	1	10,496	5	25,468
24	1	11,257	2	33,150
25	1	18,582	6	64,467
26	3	36,463	4	46,086
27	8	137,009	4	26,172
28	1	21,401	4	59,649
29	6	73,591	2	30,111
30	3	30,601	6	46,183
31	1	9,163	6	63,717
32	6	53,309	9	87,834
33	8	79,198	9	69,096
34	6	42,132	8	91,863
35	10	120,610	10	85,339
36	7	46,532	10	88,320
37	11	56,990	10	79,842
38	12	137,502	20	206,923
39	10	82,702	15	174,266
40	14	135,845	15	139,918
41	13	95,333	23	157,609
42	18	162,396	17	134,984
43	24	222,852	25	244,463
44	12	103,328	22	169,369
45	23	160,130	24	186,477
46	14	111,715	27	165,539
47	26	265,866	22	247,051
48	30	552,417	54	762,178
49	70	1,330,494	79	1,190,301
50	117	2,409,043	170	2,944,751
51	240	5,404,645	379	7,774,966
52	342	8,382,826	605	14,542,658
53	478	12,534,619	921	23,518,444
54	642	17,789,245	1,253	32,158,339
55	781	22,658,983	1,510	38,994,528

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2003**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
56	1,020	\$ 29,897,370	1,738	\$ 44,745,252
57	1,297	37,758,331	2,015	51,583,253
58	974	28,810,726	1,502	37,650,598
59	993	30,315,311	1,562	38,335,016
60	1,061	30,817,413	1,963	46,033,269
61	1,303	36,701,889	2,621	56,100,829
62	1,247	31,235,529	2,517	47,593,882
63	1,453	31,859,933	2,800	46,157,906
64	1,449	30,921,288	2,825	44,594,690
65	1,576	32,380,631	2,804	43,521,791
66	1,644	32,095,502	3,074	44,218,607
67	1,559	31,503,404	2,929	42,416,367
68	1,585	32,289,210	2,945	41,492,006
69	1,500	29,591,645	2,915	40,880,757
70	1,441	29,225,966	2,557	34,340,634
71	1,391	27,640,601	2,577	34,769,806
72	1,396	27,742,087	2,531	33,188,374
73	1,380	27,843,830	2,515	33,440,881
74	1,316	26,454,765	2,356	30,884,725
75	1,202	23,564,989	2,335	28,747,543
76	1,104	21,218,319	2,269	27,649,201
77	1,048	19,270,259	2,101	25,503,811
78	951	17,894,348	2,017	23,186,579
79	897	16,043,957	1,914	20,997,189
80	754	12,820,266	1,736	18,755,058
81	720	12,356,192	1,573	16,992,647
82	625	11,821,593	1,600	16,854,335
83	644	10,426,637	1,440	15,522,062
84	475	7,252,143	1,337	13,353,466
85	419	6,396,604	1,126	11,122,043
86	308	4,608,631	1,027	10,438,135
87	278	3,823,846	895	9,103,066
88	222	2,948,890	800	8,062,611
89	184	2,529,112	711	8,035,958
90	152	2,307,897	623	6,632,039
91	108	1,431,422	525	5,735,077

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2003**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
92	63	\$ 799,093	390	\$ 4,441,123
93	69	838,082	340	3,848,052
94	46	588,385	274	3,309,941
95	43	396,950	225	2,714,607
96	18	253,067	151	1,780,285
97	14	143,058	119	1,386,290
98	11	149,414	85	1,016,096
99	5	97,472	61	726,584
100	4	34,902	40	461,945
101	3	127,357	37	391,538
102			21	248,889
103	1	3,726	12	98,714
104			10	67,640
105			1	15,221
106			4	48,318
107			1	1,240
108	1	2,707	1	3,897
109	1	7,189		
110	1	11,219		
111			1	16,189
112			1	11,364
Total	38,903	\$ 838,614,919	77,835	\$ 1,203,948,448
Maximum	9,909	\$ 206,622,183	33,699	\$ 503,876,265
Cash Refund	3,138	57,264,078	11,338	139,819,222
100% J&S	6,626	137,391,967	2,274	24,525,606
50% J&S	3,438	80,994,693	2,007	29,634,895
Soc Sec Level	6,927	170,514,007	14,181	310,036,764
Odd Surv	30	1,004,987	16	295,903
100% J&S Popup	4,219	93,104,533	2,474	39,754,555
50% J&S Popup	2,900	75,625,513	3,213	61,857,657
Beneficiaries	1,716	16,092,958	8,633	94,147,581

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2003**

Age	Men		Women	
	Number	Amount	Number	Amount
39	1	\$ 7,217		
40	1	17,955	1	\$ 13,276
41	1	13,138	1	10,635
42	5	80,114	3	37,461
43	2	21,834	11	149,087
44	3	25,688	7	78,216
45	7	109,589	18	246,298
46	21	370,170	14	252,525
47	21	390,578	27	388,580
48	35	687,013	50	968,003
49	39	750,751	58	1,213,493
50	42	819,561	64	1,308,253
51	44	896,050	94	2,046,311
52	49	1,189,112	121	2,908,037
53	54	1,211,618	133	3,136,031
54	74	1,560,584	133	3,310,621
55	69	1,475,927	145	3,416,538
56	100	2,150,316	143	3,256,876
57	110	2,589,132	170	3,446,337
58	78	1,638,141	122	2,511,756
59	75	1,405,614	142	2,708,455
60	62	1,166,157	151	2,738,679
61	76	1,616,004	163	3,088,793
62	84	1,554,683	147	2,492,958
63	77	1,404,989	129	1,901,562
64	94	1,640,775	120	1,708,044
65	64	1,035,333	129	1,789,602
66	60	959,743	136	1,951,549
67	60	1,065,507	84	1,131,771
68	72	1,095,591	108	1,385,498
69	59	939,729	91	1,297,213
70	56	807,975	91	1,138,098
71	54	875,401	79	908,828
72	49	731,736	79	908,477
73	38	569,955	70	831,832
74	51	742,670	77	902,882

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2003**

DISABILITY RETIREMENTS

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
75	49	\$ 612,053	87	\$ 995,126
76	49	602,308	75	820,892
77	45	579,402	83	839,032
78	49	639,621	88	950,197
79	49	664,318	71	557,968
80	44	529,381	68	758,442
81	57	760,375	76	701,640
82	35	418,158	51	537,629
83	31	405,797	61	641,287
84	22	356,432	52	511,717
85	28	287,453	34	308,741
86	18	223,039	41	522,060
87	9	80,719	36	397,053
88	11	89,576	25	266,355
89	5	72,962	19	162,093
90	5	42,284	17	153,802
91	2	41,160	16	184,012
92	6	28,251	10	123,352
93	2	26,813	1	8,945
94	2	25,651	5	45,696
95			1	17,062
96			1	5,966
97			2	18,665
98			2	18,615
102			1	11,015
Total	2,305	\$ 40,102,103	4,034	\$ 65,139,937
Maximum	1,187	\$ 24,019,153	2,713	\$ 48,843,048
Cash Refund	373	5,524,549	901	10,526,730
100% J&S	204	2,290,458	96	980,843
50% J&S	282	3,934,051	119	1,451,270
Soc Sec Level	10	243,148	23	610,139
Odd Surv			2	29,081
100% J&S Popup	68	878,911	46	559,477
50% J&S Popup	181	3,211,835	134	2,139,349