North Dakota Teachers' Fund
For Retirement

ACTUARIAL VALUATION
July 1, 2001

October 5, 2001

Board of Trustees
North Dakota Teachers' Fund for Retirement
1930 Burnt Boat Rd.
P. O. Box 7100
Bismarck, ND 58507-7100

Dear Members of the Board:

Subject: Actuarial Valuation as of July 1, 2001

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the North Dakota Teachers' Fund for Retirement (TFFR) as of July 1, 2001.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion the results presented also comply with the North Dakota Century Code, and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries. Both are Enrolled Actuaries and Members of the American Academy of Actuaries, and both are experienced in performing valuations for large public retirement systems.

Actuarial Valuation

The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of TFFR, and to analyze changes in TFFR's condition. In addition, the report provides information required by TFFR in connection with Governmental Accounting Standards Board Statement No. 25 (GASB No. 25), and it provides various summaries of the data.

Valuations are prepared annually, as of July 1 of each year, the first day of TFFR's plan and fiscal year.

Financing Objectives

The member and employer contribution rates are established by statute, and both are currently set at 7.75%. The rates are intended to be sufficient to pay TFFR's normal cost and to amortize TFFR's unfunded actuarial accrued liability (UAAL) in level payments over a period of 20 years from the valuation date. The funding period is set by the Board of Trustees, and is considered reasonable by the actuary.

Progress Toward Realization of Financing Objectives

As of July 1, 2001, the employer contribution rate needed in order to meet these goals is 3.99%. This is less than the 7.75% rate currently required by law, so the current contribution rate is adequate. The margin between the rate mandated by law and the rate necessary to fund the UAAL in 20 years is 3.76 percentage points. This margin decreased from 6.28 percentage points last year, mainly because of the new legislation adopted in 2001. See below for a discussion of the new benefit provisions.

If the 7.75% contribution rate remains in place, and all actuarial assumptions are exactly realized, then the UAAL will be completely amortized in 3.2 years from July 1, 2001.

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) decreased from last year. The funded ratio at July 1, 2000 was 101.6%, while it is 96.4% as of July 1, 2001. This decrease is also due to the adoption of the new benefit provisions.

Benefit Provisions

The actuarial valuation reflects the benefit and contribution provisions set forth in the North Dakota Century Code. There were three changes made to these provisions since the previous actuarial valuation.

- An ad hoc COLA was provided for all retirees and beneficiaries. This increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement.
- A Conditional Annual Benefit Adjustment (CABA) of 0.75% to the retiree's current monthly benefit for this year and next year.
- The formula multiplier was increase from 1.88% to 2.00% effective July 1, 2001.

There are no ancillary benefits (such as cost-of-living increases to retirees) funded by a source independent of TFFR.

Assumptions and Methods

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 2000, following an analysis of the plan experience for the preceding five years. We believe the assumptions are internally consistent and are reasonably based on the actual experience of TFFR.

Data

Member data for retired, active, and inactive participants was supplied as of July 1, 2001, by the staff of the Retirement and Investment Office (RIO). 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 RIO staff and by the plan's auditors.

Sincerely,

J. Christian Conradi

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Senior Consultant

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Executive Summary

Item	2001	2000
Membership		
• Number of		
- Active Members	10,239	10,025
- Retirees and Beneficiaries	4,777	4,827
- Inactive, Vested	1,183	1,130
- Inactive, Nonvested	213	209
- Total	16,412	16,191
• Payroll	$342.2 million	$323.0 million
Statutory contribution rate		
• Employer	7.75%	7.75%
• Member	7.75%	7.75%
Assets		
• Market value	$1,290.7 million	$1,405.2 million
• Actuarial value	1,414.7 million	1,308.5 million
• Return on market value	-7.6%	11.6%
• Return on actuarial value	8.6%	13.3%
• Employer contributions	$26.3 million	$25.5 million
• External cash flow %	(0.6%)	(0.3%)
Actuarial Information		
• Normal cost %	10.29%	9.82%
• Unfunded actuarial accrued liability (UAAL)	$53.0 million	($20.6) million
• Funded ratio	96.4%	101.6%
• Funding period	3.2 years	0 years
Benchmark Contribution		
• 20-year funding rate	3.99%	1.47%
• Margin	3.76%	6.28%
Gains/(Losses)		
• Asset experience	$8.1 million	$55.6 million
• Liability experience	(11.4) million	(6.9) million
• Benefit changes	(93.9) million	N/A
• Assumption/method changes	N/A	96.1 million
• Total	$(97.2) million	$144.8 million

Introduction

The results of the July 1, 2001 actuarial valuation of the North Dakota Teachers' Fund for Retirement are presented in this report.

The purpose of any actuarial valuation report is to describe the financial condition of the Fund, to assess the adequacy of the current contributions, and to analyze changes in the funding requirements. In addition, this report presents information required by TFFR in connection with Governmental Accounting Standards Board Statement No. 25 (GASB No. 25).

Section C discusses the determination of the current funding requirements and funding periods. Section D analyzes the changes in (i) the unfunded actuarial accrued liability and (ii) the contribution requirement based on the 20-year funding period. This section also discusses the gains and losses resulting from differences between actual experience and the actuarial assumptions. Section E discusses the disclosure requirements of GASB No. 25.

Sections F through I discuss background information used in the preparation of this report--benefit provisions, actuarial assumptions and methods, financial information, and membership data.

All the tables referenced by the other sections appear in Section J.

Funding Status

Table 1 shows the development of the plan's liabilities and costs. Although the employer contribution rate is set at 7.75%, the Board has set a target funding period of 20 years from the valuation date.

The calculation of the 20-year funding cost (the benchmark rate) involves the following steps:

- The actuarial present value of future benefits is determined for the present members, including retired members, beneficiaries, inactive members and active members. This amounts to \$1,757.5 million. Table 3 shows the development of this total.

- The entry age normal funding method is used to allocate the actuarial present value of future benefits between that portion due for the current year (the normal cost), prior years (the actuarial accrued liability) and future years. Under the entry age normal cost method the current and future normal costs are determined as a level percentage of payroll. Table 4 shows an analysis of the normal cost. The amount needed to fund the current and future normal costs is 10.29% of payroll inclusive of member assessments. This is the total (member plus employer) contribution rate needed to pay for the average new member.

- A part of the normal cost is paid by the employee assessments of 7.75%, leaving 2.54% to be funded by the employers. I.e., the current year's employer normal cost is 2.54% of the valuation payroll. This is shown in Line 3 of Table 1.

- The actuarial accrued liability (the portion of the total liability attributed to prior years) is compared with the actuarial value of assets (See Section H). The difference is the unfunded actuarial accrued liability (UAAL), and this is amortized over 20 years assuming no future payroll growth. This adds \$5.2 million to the employer portion of the normal cost of \$9.2 million, for a total of \$14.4 million, and is equivalent to 3.99% of pay.

Another way of expressing this is that an employer contribution of 3.99% would be required to meet the 20-year funding schedule, determined as follows:

Normal cost	2.54%
Amortization payment	1.45%
Total	3.99%

The above calculations take the position that the 20-year funding period is fixed and the appropriate contribution is to be determined. The situation can be reversed by asking, if the current 7.75% employer rate is left in place, how long does it take to amortize the UAAL? As shown on Table 1, this period is 3.2 years.

Analysis of Changes

Tables 2a and 2b show the impact of a variety of changes on both the UAAL and on the 20-year funding requirement. Table 11 shows the detailed calculation of the asset gain/loss, while Table 12 shows the development of the liability gain/loss. (The gains and losses are due to differences between actual experience and anticipated experience determined using the actuarial assumptions.)

As shown on Table 2b, the UAAL increased from ($20.6) million to $53.0 million, an increase of $73.6 million. However, the benefit improvements enacted this year resulted in $93.9 million in additional UAAL. Therefore, other factors (asset and liability experience, contributions in excess of normal cost) offset this $93.9 million increase by $20.3 million.

The plan experienced a slight gain on the actuarial assets (due to an investment yield greater than 8.00% based on the actuarial value of assets). This decreased the UAAL by $8.1 million. This gain occurred, despite a significant loss on market value, because the actuarial value uses a five-year smoothing approach. There was a loss experienced from sources related to the liabilities, and this loss increased the UAAL by $11.4 million.

There were no changes in actuarial assumptions or actuarial methods during the last year.

Table 2a shows the impact from these same changes on the 20-year contribution requirement, expressed as a percent of payroll. The most significant item is the 304 basis point increase due to new legislation.

GASB No. 25 Disclosure

Governmental Accounting Standards Board (GASB) Statement No. 25 governs reporting for government-sponsored retirement plans.

This report includes three Tables--5a, 5b and 5c--showing information required to be reported under GASB No. 25. Table 5a shows a history of funding progress (a comparison of actuarial assets with the actuarial accrued liability and a comparison of UAAL with compensation).

Table 5b shows the Annual Required Contribution (ARC) as computed under GASB No. 25, and it shows what percent of this amount was actually received. For TFFR, the ARC is defined to be the actual statutory contribution rate, as long as this is not less than the 20-year funding cost. I.e., the ARC is computed as the larger of (i) the contribution produced by the actual statutory rate, or (ii) the normal cost plus a 20-year, level-installment amortization payment on the UAAL. Since the statutory rate has exceeded the 20-year amortization rate in each year, Table 5b shows that 100% of the ARC was made each year.

Table 5c shows other information that must be included in the notes section of the financial report. The auditor's notes should disclose the following events which may affect the comparability of the trend information shown in Tables 5a and 5b: the change in assumptions made at July 1, 2000, the benefit improvements and multiplier increases made at July 1, 1997, July 1, 1999 and July 1, 2001, and the change in the member contribution rate made at July 1, 1997. (See GASB No. 25, paragraph 40b.)

Benefit Provisions

Table 18 summarizes the provisions of TFFR used in this valuation. Table 19 is a historical record of prior legislative changes. The actuarial valuation reflects the benefit and contribution provisions set forth in the North Dakota Century Code. There were three changes made to these provisions since the previous actuarial valuation.

- An ad hoc COLA was provided for all retirees and beneficiaries. This increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement.
- A Conditional Annual Benefit Adjustment (CABA) of 0.75% to the retiree's current monthly benefit for this year and next year.
- The formula multiplier was increase from 1.88% to 2.00% effective July 1, 2001.

The two 0.75% increases are conditional. If the actuarial margin is a shortfall, i.e., is negative, by 60 basis points or more, or if the margin has been negative by 30 or more basis points for two years, the Board could elect to suspend the increase. The first increase is already in effect, and since the actuarial margin is positive this year, the July 1, 2002 increase can be paid as well. Note that, in determining whether or not an increase can be suspended, the Board must look to the margin in the preceding year's valuation report—or the two preceding year's reports—since the actuarial valuation for the current year would not be complete until after the increase had already gone into effect.

There are no ancillary benefits (such as cost-of-living increases to retirees) funded by a source independent of TFFR.

This valuation reflects benefits promised to members by TFFR statutes. There are no ancillary benefits - retirement type benefits not required by TFFR statutes but which might be deemed a TFFR liability if continued beyond the availability of funding by the current funding source.

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an investment return assumption. TFFR's Board adopts the assumptions used, taking into account the actuary's recommendations. This report is based upon the same assumptions and methods used in preparing last year's report. Assumptions were last changed in 2000, based upon an analysis of plan experience for the preceding five years.

The most significant assumptions are (i) the assumed investment return, currently set at 8%, and (ii) the assumption regarding future salary increases, which is based on a table that varies by service and averages about 5.3%. All actuarial assumptions and methods used are summarized in Table 17.

In addition to the actuarial assumptions, the actuary also makes use of an actuarial funding method to allocate costs to particular years. In common with many public-sector plans, TFFR uses the entry age normal method. This method produces a relatively level pattern of funding over time, and thereby provides equity between various generations of taxpayers. We continue to believe this method is appropriate for TFFR.

Finally, TFFR's Board selects the amortization method and the amortization period used in determining the benchmark rate to which the required 7.75% rate is compared. In determining the benchmark rate, the UAAL is amortized in level installments over an open 20-year period. I.e., the 20-year amortization payments are redetermined each year based on a new 20-year period.

Fund Assets

TFFR assets are held in trust, and are co-mingled for investment purposes with those of other North Dakota sponsored trusts. Investment decisions lie with the State Investment Board rather than with the TFFR Board, although the TFFR Board sets the investment policy, including the asset allocation guidelines. Asset information used in this valuation has been provided by the Retirement and Investment Office (RIO) staff and by the plan's auditors. Section J contains several tables which summarize, reconcile or analyze this information.

Table 7 presents a summary of the market value of assets held by the fund. About 79% of the assets are held in equities, real estate, or venture capital. This is an increase from 70% last year due to change in the Board's asset allocation policy. Table 8 shows a reconciliation of the assets from the beginning of the prior year to the valuation date.

Tables 9a and 9b show the development of the Actuarial Value of Assets (AVA). An actuarial value is used in order to dampen some of the year-to-year fluctuations which would occur if the market value were used instead. The method used phases in differences between actual and expected earnings 20% per year. (Expected earning are determined using market value and the 8.00% investment return assumption. Actual earnings are net of all investment and administrative expenses.)

Table 10 shows an estimate of the Fund's yield for the year. This is shown on (i) the market value of assets (reflecting all realized and unrealized gains and losses), and (ii) the actuarial value of assets. While the dollar-weighted market yield this year is about -7.6%, the yield on the actuarial value is 8.6%. The difference between these is due to the smoothing effect of the AVA.

Table 11 determines the asset gain or loss for the year, based on the difference between the actual fund yield and the assumed rate of 8%. The impact of this gain has already been discussed in Section D. Finally, Table 13 shows a history of cash flows to the trust.

Membership Data

Membership data was provided on computer files sent by e-mail by the RIO staff. Data for active members includes sex, birthdate, service, salary (for the prior year) and accumulated assessments. Data for inactive, nonretired members was similar, but also includes the members' unreduced benefit. For retired members, data includes status (service retiree, disabled retiree or beneficiary), sex, birthdate, pension amount, form of payment, beneficiary sex and birthdate if applicable, and date of retirement.

While not verifying the correctness of the data at the source, we performed various tests to ensure the internal consistency of the data and its overall reasonableness.

Membership statistics are summarized in Table 6a. Table 6b summarizes certain active member data, and the age/service distribution of active members is shown in Table 15. Tables 16a and 16b show the distribution of retirees by option and by benefit amount.

The number of active members increased by 2.1% since last year, from 10,025 to 10,239. This increase may be temporary, however, since it is probably due to members retiring in July, who otherwise would have retired in May or June, in order to get the new 2.00% multiplier. Note that normally the actual number of active members during the year will be somewhat higher than the valuation count, since the July 1 count excludes May and June retirees, but does not include new teachers joining the system for the next school year.

Total payroll increased 5.9% since last year. For all comparative purposes, payroll is the amount supplied by the RIO staff (i.e., the 2000-2001 member pay). However, this figure is increased by one year's pay increase to determine the member's rate of pay at July 1, 2001. Pay is assumed to change only at the beginning of a school/fiscal year.

Average age and average service of the active members increased this year. Average age increased from 43.9 years to 44.4 years, while average service increased from 14.1 years to 14.4 years. This extends a long pattern of the membership aging. Since 1992, the average age of a member has increased almost 3 years.

Tables

Development of Employer Cost

		July 1, 2001 (1)	July 1, 2000 (2)
1.	Payroll		
	a. Supplied by System	$ 342,200,962	$ 323,038,133
	b. Adjusted for one year's pay increase	359,899,825	340,084,619
2.	Present value of future pay	$ 2,816,631,574	$ 2,732,024,606
3.	Normal cost rate (payable monthly)		
	a. Total normal cost rate	10.29%	9.82%
	b. Less: member assessment rate	-7.75%	-7.75%
	c. Employer normal cost rate	2.54%	2.07%
4.	Employer normal cost (Item 3c * Item 1b)	$ 9,141,456	$ 7,039,752
5.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 1,167,780,230	$ 1,017,321,988
	b. Less: present value of future normal costs (Item 3a * Item 2)	(289,831,389)	(268,284,816)
	c. Actuarial accrued liability	$ 877,948,841	$ 749,037,172
6.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 551,566,966	$ 504,234,358
	b. Inactive members	38,157,992	34,627,952
	c. Active members (Item 5c)	877,948,841	749,037,172
	d. Total	$ 1,467,673,799	$ 1,287,899,482
7.	Actuarial value of assets	$ 1,414,682,399	$ 1,308,532,218
8.	Unfunded actuarial accrued liability (UAAL) (Item 6d - Item 7)	$ 52,991,400	$ (20,632,736)
9.	Funding period set by Board	20 years	20 years
10.	Current employer contribution rate	7.75%	7.75%
11.	Benchmark contribution (20-year funding cost)		
	a. Amortization payment of UAAL (level payments)	$ 5,208,950	$ (2,028,157)
	b. Employer normal cost (Item 4)	9,141,456	7,039,752
	c. Contribution requirement (a+b)	14,350,406	5,011,595
	d. Contribution as percentage of payroll (11c/1b)	3.99%	1.47%
12.	Funding period based on current employer contribution requirement (assuming no payroll growth)	3.2 years	0 years

Analysis of Change in 20-Year Funding Cost

Item	20-Year Funding Cost as a Percentage of Payroll as of July 1, 2001	20-Year Funding Cost as a Percentage of Payroll as of July 1, 2000
(1)	(2)	(3)
1. Prior valuation	1.47%	6.09%
2. Increases/(decreases) due to:		
a. Open amortization	0.02%	(0.09%)
b. Growth in covered payroll	0.03%	(0.11%)
c. Employer contributions received at 7.75%, rather than 1.47%	(0.66%)	(0.23%)
d. Liability experience	0.31%	0.20%
e. Investment experience	(0.22%)	(1.61%)
f. Assumption changes	0.00%	0.64%
g. Change in asset method	0.00%	(3.42%)
h. Legislative changes	3.04%	0.00%
i. Total	2.52%	(4.62%)
3. Current valuation (1. + 2.i.)	3.99%	1.47%
4. Statutory employer contribution rate	7.75%	7.75%
5. Margin available (4. - 3.)	3.76%	6.28%

Analysis of Change in UAAL

Item	Unfunded Actuarial Accrued Liability ($ in millions) as of July 1, 2001	Unfunded Actuarial Accrued Liability ($ in millions) as of July 1, 2000
(1)	(2)	(3)
1. Prior valuation	$ (20.6)	$ 135.3
2. Increases/(decreases) due to:		
a. Amortization payments	$ (23.6)	$ (11.1)
b. Investment experience	(8.1)	(55.6)
c. Assumption changes	-	22.4
d. Liability experience	11.4	6.9
e. Change in asset method	-	(118.5)
f. Legislative changes		
(i) Ad hoc COLA ($1/$2)	32.3	-
(ii) 0.75% increase for two years	7.7	-
(iii) Benefit multiplier change (2.00%)	53.9	-
g. Total	$ 73.6	$ (155.9)
3. Current valuation (1. + 2.g.)	$ 53.0	$ (20.6)

Actuarial Present Value of Future Benefits

		July 1, 2001 (1)	July 1, 2000 (2)
1.	Active members		
	a. Retirement benefits	$ 1,037,795,218	$ 895,396,341
	b. Deferred termination benefits	40,691,764	35,876,756
	c. Refunds	53,863,733	54,361,784
	d. Death benefits	17,789,915	15,966,954
	e. Disability benefits	17,639,600	15,720,153
	f. Total	$ 1,167,780,230	$ 1,017,321,988
2.	Retired members		
	a. Service retirement	$ 509,514,874	$ 470,730,520
	b. Disability retirement	6,366,580	5,241,578
	c. Beneficiaries	35,685,512	28,262,260
	d. Total	$ 551,566,966	$ 504,234,358
3.	Inactive members		
	a. Vested terminations	$ 37,494,490	$ 33,951,075
	b. Nonvested terminations	663,502	676,877
	c. Total	$ 38,157,992	$ 34,627,952
4.	Total actuarial present value of future benefits	$ 1,757,505,188	$ 1,556,184,298

Analysis of Normal Cost

	July 1, 2001 (1)	July 1, 2000 (2)
1. Gross normal cost rate (payable monthly)		
a. Retirement benefits	7.11%	6.68%
b. Deferred termination benefits	0.29%	0.22%
c. Refunds	2.40%	2.46%
d. Death benefits	0.20%	0.19%
e. Disability benefits	0.29%	0.27%
f. Total	10.29%	9.82%
2. Less: member assessment rate	7.75%	7.75%
3. Employer normal cost rate	2.54%	2.07%
4. Effectiveness of member assessments		
a. Member rate	7.75%	7.75%
b. Less: cost of refunds	-2.40%	-2.46%
c. Net member rate available for benefits	5.35%	5.29%
d. Effectiveness rate (4c/4a)	69.03%	68.26%

Schedule of Funding Progress
(As required by GASB #25)

Valuation Date (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
July 1, 1996	$733.3	$851.6	$118.3	86.1%	$281.2	42.1%
July 1, 1997	$823.4	$977.1	$153.6	84.3%	$294.1	52.2%
July 1, 1998	$928.0	$1,033.0	$105.0	89.8%	$298.4	35.2%
July 1, 1999	$1,053.1	$1,188.4	$135.3	88.6%	$314.6	43.0%
July 1, 2000	$1,308.5	$1,287.9	($20.6)	101.6%	$323.0	-6.4%
July 1, 2001	$1,414.7	$1,467.7	$53.0	96.4%	$342.2	15.5%

Note : Dollar amounts in millions

Schedule of Employer Contributions
(As required by GASB #25)

Fiscal Year	Annual Required Contribution	Percentage Contributed
1996	$18,988,538	100%
1997	$19,693,130	100%
1998	$23,326,328	100%
1999	$24,257,091	100%
2000	$25,527,734	100%
2001	$26,289,206	100%

Notes to Required Supplementary Information
(as required by GASB #25)

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

Valuation date	July 1, 2001
Actuarial cost method	Entry Age Normal
Amortization method	Level payment, open
Remaining amortization period	20 years [1]
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	4.00% to 13.00%
*Includes inflation at	3.00%
Cost-of-living adjustments	None

[1] Statutory 7.75% employer contribution rate produces 3.2 years funding period

Membership Data

		July 1, 2001 (1)		July 1, 2000 (2)
1.	**Active members**			
a.	Males	2,993		2,960
b.	Females	7,246		7,065
c.	Total members	10,239		10,025
d.	Total payroll supplied by System	$ 342,200,962		$ 323,038,133
e.	Average salary	33,421		32,223
f.	Average age	44.4		43.9
g.	Average service	14.4		14.1
h.	Total assessments with interest	$ 413,904,272		$ 372,328,403
i.	Average assessments with interest	40,424		37,140
2.	**Vested inactive members**			
a.	Number	1,183		1,130
b.	Total annual deferred benefits	$ 6,104,236	(1)	$ 5,900,961
c.	Average annual deferred benefit	5,160	(1)	5,222
3.	**Nonvested inactive members**			
a.	Number	213		209
b.	Employee assessments with interest due	$ 663,502		$ 676,877
c.	Average refund due	3,115		3,239
4.	**Service retirees**			
a.	Number	4,264		4,348
b.	Total annual benefits	$ 52,384,927	(1)	$ 52,049,392
c.	Average annual benefit	12,285	(1)	11,971
5.	**Disabled retirees**			
a.	Number	70		62
b.	Total annual benefits	$ 675,225	(1)	$ 586,536
c.	Average annual benefit	9,646	(1)	9,460
6.	**Beneficiaries**			
a.	Number	443		417
b.	Total annual benefits	$ 3,953,835	(1)	$ 3,565,623
c.	Average annual benefit	8,925	(1)	8,551

(1) Benefit amount before benefit increases effective 7/1/2001.

Historical Summary of Active Member Data

	Active Members		Covered Payroll		Average Salary			
Year Ending June 30,	Number	Percent Increase	Amount in $ Millions	Percent Increase	$ Amount	Percent Increase	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1992	9,707	1.2%	250.9	6.7%	25,850	5.5%	41.7	12.8
1993	9,808	1.0%	260.4	3.8%	26,549	2.7%	42.2	13.2
1994	9,653	-1.6%	262.4	0.8%	27,187	2.4%	42.4	13.3
1995	9,663	0.1%	268.7	2.4%	27,803	2.3%	42.6	13.4
1996	9,797	1.4%	281.2	4.7%	28,708	3.3%	42.9	13.6
1997	10,010	2.2%	294.1	4.6%	29,382	2.3%	43.4	14.0
1998	9,896	-1.1%	298.4	1.5%	30,156	2.6%	43.5	14.0
1999	10,046	1.5%	314.6	5.4%	31,318	3.9%	44.0	14.4
2000	10,025	-0.2%	323.0	2.7%	32,223	2.9%	43.9	14.1
2001	10,239	2.1%	342.2	5.9%	33,421	3.7%	44.4	14.4

Plan Net Assets
(Assets at Market or Fair Value)

Item (1)	June 30, 2001 (2)	June 30, 2000 (3)
1. Cash and Cash Equivalents	$ 6,057,326	$ 6,297,658
2. Receivables:		
a. Assessments and contributions	$ 6,616,070	$ 6,168,802
b. Investment income	7,926,311	6,601,965
c. Due from other funds	0	0
d. Total receivables	$ 14,542,381	$ 12,770,767
3. Investments		
a. Invested cash and other	$ 23,529,222	$ 27,586,864
b. Domestic equities	519,292,298	486,964,999
c. International equities	290,358,103	299,999,158
d. Domestic fixed income	176,348,931	317,377,186
e. International fixed income	65,436,592	70,985,139
f. Real estate	139,409,884	141,679,262
g. Private equity	56,875,159	43,099,955
h. Total investments	$ 1,271,250,189	$ 1,387,692,563
4. Invested securities lending collateral	$ 53,013,503	$ 104,357,294
5. Total assets	$ 1,344,863,399	$ 1,511,118,282
6. Liabilities		
a. Investment expenses payable	$ 1,014,555	$ 1,352,612
b. Accrued expenses	134,634	126,369
c. Due to other funds	38,567	35,567
d. Securities lending collateral	53,013,503	104,357,294
e. Total liabilities	$ 54,201,259	$ 105,871,842
7. Total market value of assets available for benefits (Item 5 - Item 6)	$ 1,290,662,140	$ 1,405,246,440
8. Asset allocation (investments)		
a. Invested cash and other	1.9%	2.0%
b. Domestic equities	40.8%	35.1%
c. International equities	22.8%	21.6%
d. Domestic fixed income	13.9%	22.9%
e. International fixed income	5.1%	5.1%
f. Real estate	11.0%	10.2%
g. Private equity	4.5%	3.1%
h. Total investments	100.0%	100.0%

Reconciliation of Plan Net Assets

	Year Ending June 30, 2001 (1)	Year Ending June 30, 2000 (2)
1. Value of assets at beginning of year	$ 1,405,246,440	$ 1,262,584,076
2. Revenue for the year		
a. Contributions and assessments		
i. Employee assessments	$ 26,289,672	$ 25,528,245
ii. Employer contributions	26,289,206	25,527,734
iii. Purchased service credit	1,942,467	2,509,576
iv. Interest and penalties	1,162	6,222
v. Total	$ 54,522,507	$ 53,571,777
b. Income		
i. Interest, dividends, and other income	$ 40,130,364	$ 40,154,926
ii. Investment expenses	(4,901,760)	(4,947,423)
iii. Net	$ 35,228,604	$ 35,207,503
c. Net realized and unrealized gains (losses)	$ (142,367,325)	$ 111,269,923
d. Total revenue	$ (52,616,214)	$ 200,049,203
3. Expenditures for the year		
a. Refunds	$ 3,127,841	$ 2,788,019
b. Benefit payments	57,740,914	53,583,271
c. Administrative and miscellaneous expenses	1,099,331	1,015,549
d. Total expenditures	$ 61,968,086	$ 57,386,839
4. Increase in net assets (Item 2 - Item 3)	$ (114,584,300)	$ 142,662,364
5. Value of assets at end of year (Item 1 + Item 4)	$ 1,290,662,140	$ 1,405,246,440

Determination of Excess Earnings to be Deferred

	Year ended :	June 30, 1998	June 30, 1999	June 30, 2000	June 30, 2001
		(1)	(2)	(3)	(4)
1.	MVA at beginning of year	$1,001,037,886	$1,133,469,244	$1,262,584,076	$1,405,246,440
2.	Net new investments				
	a. Contributions	$ 47,411,761	$ 49,158,925	$ 53,571,777	$ 54,522,507
	b. Benefits and refunds paid	(46,378,425)	(48,997,740)	(56,371,290)	(60,868,755)
	c. Subtotal	$ 1,033,336	$ 161,185	$ (2,799,513)	$ (6,346,248)
3.	MVA at end of year	$1,133,469,244	$1,262,584,076	$1,405,246,440	$1,290,662,140
4.	Net MVA earnings (3 - 1 - 2)	$ 131,398,022	$ 128,953,647	$ 145,461,877	$ (108,238,052)
5.	Assumed investment return rate	8.00%	8.00%	8.00%	8.00%
6.	Expected return	$ 80,124,364	$ 90,683,987	$ 100,894,746	$ 112,165,865
7.	Excess return (4 - 6)	$ 51,273,658	$ 38,269,660	$ 44,567,131	$ (220,403,917)
8.	Excess return deferral percent	20%	40%	60%	80%
9.	Amount deferred	$ 10,254,732	$ 15,307,864	$ 26,740,279	$ (176,323,134)

Note: MVA is market value of assets

Development of Actuarial Value of Assets

1.	Market value of assets as of valuation	$	1,290,662,140
2.	Deferred amounts for fiscal year ending June 30,		
	a. 2001	$	(176,323,134)
	b. 2000	$	26,740,279
	c. 1999	$	15,307,864
	d. 1998	$	10,254,732
	e. Total	$	(124,020,259)
3.	Actuarial value of assets (1) - (2)	$	1,414,682,399

Estimation of Yields

	Year Ending June 30, 2001 (1)	Year Ending June 30, 2000 (2)
A. Market value yield		
1. Beginning of year market assets	$ 1,405,246,440	$ 1,262,584,076
2. Investment income (including realized and unrealized gains and losses)		
a. Interest and dividends net of investment expenses	$ 35,228,604	$ 35,207,503
b. Realized and unrealized gains/(losses)	(142,367,325)	111,269,923
c. Total investment income based on market value	$ (107,138,721)	$ 146,477,426
3. End of year market assets	$ 1,290,662,140	$ 1,405,246,440
4. Estimated dollar weighted market value yield	-7.6%	11.6%
B. Actuarial value yield		
1. Beginning of year actuarial assets	$ 1,308,532,218	$ 1,053,101,487
2. Investment income (based on asset valuation method)		
a. Interest and dividends net of investment expenses	$ 35,228,604	$ 35,207,503
b. Realized and unrealized gains/(losses)	78,367,156	105,505,915
c. Less: administrative expenses	(1,099,331)	(1,015,549)
d. Net investment income based on asset valuation method	$ 112,496,429	$ 139,697,869
3. End of year actuarial assets	$ 1,414,682,399	$ 1,189,999,843
4. Estimated actuarial value yield	8.6%	13.3%

History of Investment Return Rates

Plan Year Ending June 30 of	Market	Actuarial
(1)	(2)	(3)
1990	6.7%	7.7%
1991	7.5%	5.8%
1992	12.4%	6.5%
1993	14.7%	8.1%
1994	1.2%	7.0%
1995	13.6%	9.1%
1996	15.6%	11.3%
1997	18.5%	12.6%
1998	13.2%	12.6%
1999	11.5%	13.5%
2000	11.6%	13.3%
2001	-7.6%	8.6%

Investment Experience Gain or Loss

Item	Valuation as of July 1, 2001	Valuation as of July 1, 2000
(1)	(2)	(3)
1. Actuarial assets, beginning of year	$ 1,308,532,218	$ 1,053,101,487
2. Total assessments and contributions during year	$ 54,522,507	$ 53,571,777
3. Benefits and refunds paid	$ (60,868,755)	$ (56,371,290)
4. Assumed net investment income at 8%		
a. Beginning of year assets	$ 104,682,577	$ 84,248,119
b. Assessments and contributions	2,180,900	2,142,871
c. Benefits and refunds paid	(2,434,750)	(2,254,852)
d. Total	$ 104,428,727	$ 84,136,138
5. Expected actuarial assets, end of year (Sum of Items 1 through 4)	$ 1,406,614,697	$ 1,134,438,112
6. Actual actuarial assets, end of year	$ 1,414,682,399	$ 1,189,999,843 *
7. Asset gain (loss) for year (Item 6 - Item 5)	$ 8,067,702	$ 55,561,731

* Before asset method change

Total Experience Gain or Loss

Item (1)	Valuation as of July 1, 2001 (2)	Valuation as of July 1, 2000 (2)
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ (20,632,736)	$ 135,271,019
2. Normal cost for the year (employer and employee)	$ 33,396,310	$ 32,511,019
3. Less: contributions and assessments for the year	$ (54,522,507)	$ (53,571,777)
4. Interest at 8 %		
a. On UAAL	$ (1,650,619)	$ 10,821,682
b. On normal cost	1,335,852	1,300,441
c. On contributions	(2,180,900)	(2,142,871)
d. Total	$ (2,495,667)	$ 9,979,252
5. Expected UAAL (Sum of Items 1 - 4)	$ (44,254,600)	$ 124,189,513
6. Actual UAAL	$ 52,991,400	$ (20,632,736)
7. Total gain (loss) for the year(Item 5 - Item 6)	$ (97,246,000)	$ 144,822,250
B. Source of gains and losses		
8. Asset gain (loss) for the year (Table 11)	$ 8,067,702	$ 55,561,731
9. Liability gain (loss) for the year	$ (11,390,559)	$ (6,863,462)
10. Change in benefit provisions	$ (93,923,143)	N/A
11. Change in actuarial assumptions	N/A	$ (22,408,394)
11. Change in asset method	N/A	$ 118,532,375
12. Total	$ (97,246,000)	$ 144,822,250

History of Cash Flow

Year Ending June 30, (1)	Contributions[1] (2)	Benefit Payments (3)	Refunds (4)	Administrative Expenses (5)	Total (6)	External Cash Flow for the Year[2] (7)	Market Value of Assets (8)	External Cash Flow as Percent of Market Value (9)
1992	34,326,788	(26,164,266)	(2,782,003)	(768,580)	(29,714,849)	4,611,939	556,086,158	0.8%
1993	35,474,901	(27,710,231)	(2,614,160)	(780,865)	(31,105,256)	4,369,645	642,418,007	0.7%
1994	36,106,560	(34,093,075)	(2,293,299)	(719,777)	(37,106,151)	(999,591)	649,345,245	-0.2%
1995	37,214,707	(36,001,717)	(2,186,791)	(788,743)	(38,977,251)	(1,762,544)	736,009,925	-0.2%
1996	38,552,876	(38,546,098)	(2,644,413)	(858,258)	(42,048,769)	(3,495,893)	847,339,136	-0.4%
1997	40,157,287	(39,522,935)	(2,590,766)	(832,223)	(42,945,924)	(2,788,637)	1,001,037,886	-0.3%
1998	47,411,761	(43,706,492)	(2,671,933)	(789,830)	(47,168,255)	243,506	1,133,469,244	0.0%
1999	49,158,925	(46,120,317)	(2,877,423)	(944,654)	(49,942,394)	(783,469)	1,262,584,076	-0.1%
2000	53,571,777	(53,583,271)	(2,788,019)	(1,015,549)	(57,386,839)	(3,815,062)	1,405,246,440	-0.3%
2001	54,522,507	(57,740,914)	(3,127,841)	(1,099,331)	(61,968,086)	(7,445,579)	1,290,662,140	-0.6%

[1] Column (2) includes employee assessments and employer contributions, as well as any purchased service credits during the year.
[2] Column (7) = Column (2) - Column (6).

Actuarial Balance Sheet

	July 1, 2001 (1)	July 1, 2000 (2)
A. Assets		
1. Current assets		
a. At market value	$ 1,290,662,140	$ 1,405,246,440
b. Adjustment for actuarial value	124,020,259	(96,714,222)
c. Actuarial value of assets	$ 1,414,682,399	$ 1,308,532,218
2. Actuarial present value of future contributions		
a. Member assessments	$ 218,288,947	$ 211,731,907
b. Employer normal costs	71,542,442	56,552,909
c. Unfunded actuarial accrued liability	52,991,400	(20,632,736)
d. Total	$ 342,822,789	$ 247,652,080
3. Total (1c + 2d)	$ 1,757,505,188	$ 1,556,184,298
B. Liabilities - present value of future benefits		
1. Retirees and beneficiaries	$ 551,566,966	$ 504,234,358
2. Inactive members	38,157,992	34,627,952
3. Active members	1,167,780,230	1,017,321,988
4. Total	$ 1,757,505,188	$ 1,556,184,298

Solvency Test

	July 1, 2001 (1)	July 1, 2000 (2)
1. Actuarial accrued liability (AAL)		
a. Active member contributions	$ 413,904,272	$ 372,328,403
b. Retirees and beneficiaries	551,566,966	504,234,358
c. Active and inactive members (employer financed)	502,202,561	411,336,721
d. Total	$ 1,467,673,799	$ 1,287,899,482
2. Actuarial value of assets	$ 1,414,682,399	$ 1,308,532,218
3. Cumulative portion of AAL covered		
a. Active member contributions	100.0%	100.0%
b. Retirees and beneficiaries	100.0%	100.0%
c. Active and inactive members (employer financed)	89.4%	100.0%

Distribution of Active Members by Age and by Years of Service
As of 07/01/2001

	Years of Credited Service													
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35-39 Count & Avg. Comp.	40 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0
20-24	149 $17,613	57 $19,697	1 $21,586	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	207 $18,206
25-29	171 $20,235	191 $23,145	190 $25,254	143 $24,325	93 $25,728	96 $26,370	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	884 $23,848
30-34	76 $20,969	71 $24,550	57 $25,365	103 $26,423	96 $27,042	577 $29,118	125 $31,798	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	1,105 $27,942
35-39	37 $22,585	59 $25,617	33 $27,383	36 $27,229	38 $27,326	224 $30,337	522 $33,188	194 $33,772	0 $0	0 $0	0 $0	0 $0	0 $0	1,143 $31,444
40-44	44 $20,571	56 $22,074	27 $26,259	23 $25,916	25 $30,396	167 $32,226	191 $33,933	568 $35,196	326 $34,521	0 $0	0 $0	0 $0	0 $0	1,427 $33,157
45-49	38 $20,581	43 $26,903	33 $25,638	16 $31,690	20 $27,691	137 $31,759	143 $34,325	172 $37,666	876 $37,067	561 $36,914	0 $0	0 $0	0 $0	2,039 $35,686
50-54	29 $20,161	26 $26,085	29 $26,281	15 $33,363	15 $27,677	85 $31,151	114 $35,685	97 $37,833	235 $39,709	952 $38,853	476 $38,505	0 $0	0 $0	2,073 $37,614
55-59	14 $24,642	11 $27,467	10 $26,077	6 $29,898	4 $31,402	24 $29,465	50 $36,244	36 $35,970	96 $38,857	133 $40,107	420 $39,221	181 $40,464	1 $30,689	986 $38,458
60-64	3 $30,514	3 $26,401	3 $34,246	1 $28,540	2 $17,679	9 $41,861	19 $33,876	11 $43,403	35 $37,700	28 $37,903	53 $41,189	95 $42,921	57 $37,048	319 $39,461
65-69	0 $0	1 $22,105	2 $23,736	0 $0	2 $30,404	2 $32,051	1 $53,756	2 $31,281	7 $44,110	3 $39,977	4 $22,825	2 $47,636	20 $40,787	46 $37,866
70 & Over	1 $9,856	2 $19,025	0 $0	0 $0	0 $0	2 $23,983	0 $0	1 $32,553	1 $9,709	2 $43,957	0 $0	1 $6,477	0 $0	10 $23,252
Total	562 $19,986	520 $23,674	385 $25,708	343 $26,215	295 $27,043	1,323 $30,011	1,165 $33,705	1,081 $35,670	1,576 $37,071	1,679 $38,296	953 $38,904	279 $41,230	78 $37,925	10,239 $33,421

Schedule of Retired Members by Type of Benefit

Type of Benefit/ Form of Payment (1)	Number (2)		Annual Benefits Amount [1] (3)		Average Monthly Benefit (4)
Service :					
Straight Life	2,566	$	23,659,546	$	768
100% J&S	872		14,674,560		1,402
50% J&S	301		4,860,889		1,346
5 Years C&L	31		343,411		923
10 Years C&L	140		1,671,746		995
Level	354		7,174,775		1,689
Subtotal:	4,264	$	52,384,927		1,024
Disability:					
Straight Life	50	$	492,346	$	821
100% J&S	10		85,121		709
50% J&S	7		66,317		789
5 Years C&L	2		24,021		1,001
10 Years C&L	1		7,420		618
Level	0		0		0
Subtotal:	70	$	675,225		804
Beneficiaries					
Straight Life	431	$	3,851,099	$	745
5 Years C&L	2		15,700		654
10 Years C&L	10		87,036		725
Subtotal:	443	$	3,953,835		744
Total:	4,777	$	57,013,987	$	995

[1] Benefit amounts are before benefit increases effective 7/1/2001

Schedule of Retired Members by Monthly Benefit

Monthly Benefit Amount (1)	Total (2)	Female (3)	Male (4)
Under $100	29	21	8
$ 100 - 199	125	82	43
200 - 299	293	223	70
300 - 399	353	277	76
400 - 499	407	309	98
500 - 599	520	393	127
600 - 699	317	223	94
700 - 799	221	157	64
800 - 899	228	153	75
900 - 999	262	187	75
1000 - 1199	470	277	193
1200 - 1399	417	215	202
1400 - 1599	349	168	181
1600 - 1799	229	90	139
1800 - 1999	173	62	111
2000 & Over	384	88	296
Total	4,777	2,925	1,852

Summary of Assumptions and Methods

ACTUARIAL ASSUMPTIONS

1. Investment Return Rate......... 8.00% per annum, compounded annually, composed of an assumed 3.00% inflation rate and a 5.00% real rate of return. (Adopted July 1, 1990; allocation between inflation and real rate of return modified July 1, 2000.)

2. Mortality Rates

   a. Non-Disabled..................... 1994 Uninsured Pensioner Mortality Table set back two years for males and three years for females. (Adopted July 1, 2000.)

   b. Disabled............................. Pension Benefit Guaranty Corporation Disabled Life Mortality Tables Va and VIa.

Deaths per 100 Lives

	Male Participants		Female Participants	
Age	Non-Disabled	Disabled	Non-Disabled	Disabled
20	.0495	4.83	.0281	2.63
25	.0633	4.83	.0311	2.63
30	.0811	3.62	.0324	2.37
35	.0912	2.78	.0427	2.14
40	.1010	2.82	.0593	2.09
45	.1454	3.22	.0888	2.24
50	.2260	3.83	.1196	2.57
55	.3854	4.82	.1864	2.95
60	.6774	6.03	.3139	3.31
65	1.2335	6.78	.6271	3.70
70	2.1354	7.39	1.1574	4.11

3. Retirement Rates .... The following rates of retirement are assumed for members eligible to retire. (Adopted July 1, 2000.)

	Retirements Per 100 Members					
	Unreduced Retirement Ultimate Rate		Unreduced Retirement Initial Eligibility		Reduced Retirement	
Age	Male	Female	Male	Female	Male	Female
50	17.0%	10.0%	40.0%	35.0%	0.0%	0.0%
51	17.5%	10.0%	40.0%	35.0%	0.0%	0.0%
52	18.0%	10.0%	40.0%	35.0%	0.0%	0.0%
53	18.5%	10.0%	40.0%	35.0%	0.0%	0.0%
54	19.0%	10.0%	40.0%	35.0%	0.0%	0.0%
55	19.5%	10.0%	50.0%	55.0%	2.0%	3.0%
56	20.0%	15.0%	50.0%	55.0%	2.0%	3.0%
57	20.5%	15.0%	50.0%	55.0%	2.0%	3.0%
58	21.0%	15.0%	50.0%	55.0%	2.0%	3.0%
59	21.5%	17.5%	50.0%	55.0%	2.0%	3.0%
60	25.0%	20.0%	75.0%	75.0%	4.0%	3.0%
61	50.0%	25.0%	50.0%	75.0%	16.0%	4.0%
62	75.0%	40.0%	75.0%	75.0%	30.0%	50.0%
63	60.0%	40.0%	60.0%	75.0%	16.0%	20.0%
64	60.0%	50.0%	60.0%	75.0%	16.0%	20.0%
65	60.0%	60.0%	60.0%	60.0%	--	--
66	40.0%	40.0%	40.0%	40.0%	--	--
67	40.0%	40.0%	40.0%	40.0%	--	--
68	40.0%	40.0%	40.0%	40.0%	--	--
69	40.0%	40.0%	40.0%	40.0%	--	--
70	100.0%	100.0%	100.0%	100.0%	--	--

4. Disability Rates .... As shown below for selected ages. (Adopted July 1, 2000.)

Age	Disabilities Per 100 Members
20	0.016
25	0.016
30	0.016
35	0.016
40	0.048
45	0.080
50	0.128
55	0.224
60	0.432
65	0.000

5. Termination Rates................The following withdrawal rates are used based on age. (For causes other than death, disability, or retirement.) (Adopted July 1, 1995.)

	Males										
	Years of Service										
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.1420	0.1379	0.1366	0.1339	0.1220	0.1067	0.0896	0.0878	0.0860	0.0842	0.0598
30	0.1416	0.1376	0.1363	0.1336	0.1210	0.1053	0.0907	0.0889	0.0871	0.0853	0.0470
35	0.1359	0.1321	0.1308	0.1282	0.1141	0.0988	0.0867	0.0849	0.0832	0.0815	0.0343
40	0.1317	0.1280	0.1267	0.1243	0.1074	0.0928	0.0824	0.0808	0.0791	0.0775	0.0252
45	0.1282	0.1246	0.1234	0.1210	0.1002	0.0868	0.0777	0.0761	0.0746	0.0730	0.0196
50	0.1246	0.1211	0.1199	0.1176	0.0916	0.0809	0.0725	0.0710	0.0696	0.0681	0.0188
55	0.1444	0.1403	0.1390	0.1362	0.0974	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.1588	0.1544	0.1529	0.1499	0.1071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.1747	0.1698	0.1681	0.1648	0.1178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	Females										
	Years of Service										
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.1654	0.1607	0.1592	0.1560	0.1307	0.1119	0.0952	0.0806	0.0790	0.0774	0.0352
30	0.1373	0.1334	0.1321	0.1295	0.1107	0.0964	0.0836	0.0738	0.0723	0.0708	0.0312
35	0.1143	0.1110	0.1100	0.1078	0.0926	0.0820	0.0732	0.0672	0.0658	0.0645	0.0275
40	0.0978	0.0951	0.0941	0.0923	0.0779	0.0695	0.0637	0.0607	0.0595	0.0583	0.0242
45	0.0910	0.0885	0.0876	0.0859	0.0686	0.0593	0.0553	0.0545	0.0535	0.0524	0.0220
50	0.0967	0.0940	0.0931	0.0912	0.0670	0.0519	0.0480	0.0484	0.0475	0.0465	0.0227
55	0.1455	0.1414	0.1400	0.1373	0.0742	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.1885	0.1831	0.1814	0.1778	0.0907	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.2498	0.2428	0.2404	0.2357	0.1167	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6. Salary Increase Rates .... Inflation rate of 3.00% plus productivity increase rate of 1.00%, plus step-rate/promotional increase as shown below. (Adopted July 1, 2000.)

Years of Service	Annual Step-Rate/ Promotional Component	Annual Total Salary Increase
0	9.00%	13.00%
1	4.00%	8.00%
2	3.50%	7.50%
3	3.00%	7.00%
4	2.75%	6.75%
5	2.50%	6.50%
6	2.25%	6.25%
7	2.25%	6.25%
8	2.00%	6.00%
9	1.75%	5.75%
10	1.50%	5.50%
11	1.25%	5.25%
12	1.00%	5.00%
13	0.75%	4.75%
14	0.50%	4.50%
15 or more	0.00%	4.00%

7. Percent Married..................... For valuation purposes 75% of members are assumed to be married. Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses. (Adopted July 1, 1992.)

8. Percent Electing a Deferred Termination Benefit.............. Terminating members are assumed to elect the most valuable benefit at the time of termination. Termination benefits are assumed to commence at the first age at which unreduced benefits are available. (Adopted July 1, 1990.)

9. Provision for Expense .... The assumed investment return rate represents the anticipated net rate of return after payment of all administrative and investment expenses. (Adopted July 1, 1992.)

ASSET VALUATION METHOD

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The actual investment return for this purpose is determined net of all investment and administrative expenses.

ACTUARIAL COST METHOD

The funding period required to amortize the unfunded actuarial accrued liability (UAAL) is determined using the Entry Age Normal actuarial cost method. This method assigns the plan's total actuarial present value of future benefits to various periods. The actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are assigned to future years.

The normal cost is determined for a hypothetical group of new entrants, based on actual new entrants in the June 30, 1999 valuation. 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 (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

Summary of Benefit Provisions

1. Effective Date: July 1, 1971.

2. Plan Year: Twelve-month period ending June 30th.

3. Administration: The Teachers' Fund for Retirement (TFFR) is administered by a Board of Trustees. A separate State Investment Board is responsible for the investment of the trust assets, although the TFFR Board establishes the asset allocation policy. The Retirement and Investment Office is the administrative agency for TFFR.

4. Type of Plan: TFFR is a qualified governmental defined benefit retirement plan. For Governmental Accounting Standards Board purposes, it is a cost-sharing multiple employer PERS.

5. Eligibility: All certified teachers of any public school in North Dakota participate in TFFR. This includes teachers, supervisors, principals, administrators, etc. Non-certified employees such as teacher's aides, janitors, secretaries, drivers, etc. are not allowed to participate in TFFR. Eligible employees become members at their date of employment.

6. Employee Assessments: All active members contribute 7.75% of their salary per year. The employer may "pick up" the member's assessments under the provisions of Internal Revenue Code Section 414(h).

7. Salary: The member's total earnings are used for salary purposes, including overtime, etc., and including nontaxable wages under a Section 125 plan, but excluding certain extraordinary compensation, such as fringe benefits or unused sick and vacation leave.

8. Employer Contributions: The district or other employer which employs a member contributes 7.75% of the member's salary.

9. Service: Employees receive credit for service while a member. A member may also purchase credit for certain periods, such as time spent teaching at a public school in another state, by paying the actuarially determined cost of the additional service. Special rules and limits govern the purchase of additional service.

10. Final Average Compensation (FAC): The average of the member's highest three plan year salaries. Monthly benefits are based on one-twelfth of this amount.

11. Normal Retirement

    a. Eligibility: A member may retire upon Normal Retirement on or after age 65 with credit for 3 years of service, or if earlier, when the sum of the member's age and service is at least 85.

    b. Monthly Benefit: 2.00% of FAC (monthly) times years of service.

    c. Payment Form: Benefits are paid as a monthly life annuity, with a guarantee that if the payments made do not exceed the member's assessments plus interest, determined as of the date of retirement, the balance will be paid in a lump-sum to the member's beneficiary. Optional forms of payment are available; see below.

12. Early Retirement

    a. Eligibility: A member may retire early after reaching age 55 with credit for three years of service.

    b. Monthly Benefit: 2.00% of FAC (monthly) times years of service, multiplied by a factor which reduces the benefit 6% for each year from the earlier of (i) age 65, or (ii) the age at which current service plus age equals 85.

    c. Payment Form: Same as for Normal Retirement above.

13. Disability Retirement

   a. Eligibility: A member is eligible provided he/she has credit for at least one year of service.

   b. Monthly Benefit: 2.00% of FAC (monthly) times years of service with a minimum 20 years of service.

   c. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity with a guarantee that, at the member's death, the sum of the member's assessments plus interest as of the date of retirement that is in excess of the sum of payments already received will be paid in a lump sum to the member's beneficiary. All alternative forms of payment are also permitted in the case of disability retirement. Disability benefits are converted to normal retirement benefits when the member reaches normal retirement age or age 65, whichever is earlier.

14. Deferred Termination Benefit

   a. Eligibility: A member with at least three years of service who does not withdraw his/her contributions from the fund is eligible for a deferred termination benefit.

   b. Monthly Benefit: 2.00% of FAC (monthly) times years of service. Both FAC and service are determined at the time the member leaves active employment. Benefits may commence unreduced at age 65 or when the rule of 85 is met (age plus service equals 85). Reduced benefits may commence at or after age 55 if the member is not eligible for an unreduced benefit.

   c. Payment Form: The form of payment is the same as for Normal Retirement above.

   d. Death Benefit: A member who dies after leaving active service but before retiring is entitled to receive a benefit as described below in 16b.

15. Withdrawal (Refund) Benefit

   a. Eligibility: All members leaving covered employment with less than three years of service are eligible. Optionally, vested members (those with three or more years of service) may withdraw their assessments plus interest in lieu of the deferred benefits otherwise due.

   b. Benefit: The member who withdraws receives a lump-sum payment of his/her employee assessments, plus the interest credited on these contributions. Interest is credited at 6%.

16. Death Benefit

   a. Eligibility: Death must have occurred while an active or an inactive, non-retired member.

   b. Benefit: Upon the death of a nonvested member, a refund of the member's assessments and interest is paid. Upon the death of a vested member, the beneficiary may elect (i) the refund benefit above, (ii) payment for 60 months of the normal retirement benefit, based on FAC and service determined at the date of death, or (iii) a life annuity of the normal retirement benefit, determined under Option One below, based on FAC and service as of the date of death, but without applying any reduction for the member's age at death. Members not eligible for normal retirement benefits under Option One use the Fund's disability reduction tables.

17. Optional Forms of Payment: There are optional forms of payment available on an actuarially equivalent basis, as follows:

   a. Option 1 - A life annuity payable while either the participant or his beneficiary is alive, "popping-up" to the original life annuity if the beneficiary predeceases the member.

   b. Option 2 - A life annuity payable to the member while both the member and beneficiary are alive, reducing to 50% of this amount if the member predeceases the beneficiary, and "popping-up" to the original life annuity if the beneficiary predeceases the member.

c. Option 3 - A life annuity payable to the member, with a guarantee that, should the member die prior to receiving 60 payments (five years), the payments will be continued to a beneficiary for the balance of the five-year period.

d. Option 4 - A life annuity payable to the member, with a guarantee that, should the member die prior to receiving 120 payments (10 years), the payments will be continued to a beneficiary for the balance of the ten-year period.

e. Option 5 - A nonlevel annuity payable to the member, designed to provide a level total income when combined with the member's Social Security benefit.

Actuarial equivalence is based on tables adopted by the Board of Trustees.

18. Cost-of-living Increase: From time to time, TFFR has been amended to grant certain post-retirement benefit increases. However, TFFR has no automatic cost-of-living increase features.

Summary of Plan Changes

Effective July 1, 1991:

1. Benefit multiplier increased from 1.275% to 1.39% for all future retirees.

2. Provide a post-retirement benefit increase for all annuitants receiving a monthly benefit on June 30, 1991. The monthly increase is the greater of a 10% increase or a level increase based on years of service and retirement date:

   a. $3 per year of service for retirements before 1980.
   b. $2 per year of service for retirements between 1980 and 1983.
   c. $1 per year of service for retirements from 1984 through June 30, 1991.

   Minimum increase is $5 per month. Maximum increase is $75 per month.

Effective July 1, 1993:

1. Benefit multiplier increased from 1.39% to 1.55% for all future retirees.

2. Provide a post-retirement benefit increase for all annuitants receiving a monthly benefit on June 30, 1993. The monthly increase is the greater of a 10% increase or a level increase based on years of service and retirement date:

   a. $3 per year of service for retirements before 1980.
   b. $2.50 per year of service for retirements between 1980 and 1983.
   c. $1 per year of service for retirements from 1984 through June 30, 1993.

   Minimum increase is $5 per month. Maximum increase is $100 per month.

3. Minimum retirement benefit increased to $10 times years of service up to 25, plus $15 times years of service greater than 25. (Previously was $6 up to 25 years of service plus $7.50 over 25 years of service.)

4. Disability benefit changed to 1.55% of FAC times years of service using a minimum of 20 years of service.

Effective July 1, 1997:

1. Benefit multiplier increased from 1.55% to 1.75% for all future retirees.

2. Member assessment rate and employer contribution rate increased from 6.75% to 7.75%.

3. A $30.00/month benefit improvement was granted to all retirees and beneficiaries.

Effective July 1, 1999:

1. Active members will now be fully vested after three years (rather than five years) of service.

2. Early retirement benefits will be reduced 6% per year from the earlier of (i) age 65, or (ii) the date as of which age plus service equals 85 (rather than from age 65 in all cases).

3. An ad hoc COLA was provided for all retirees and beneficiaries. This increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement.

4. The formula multiplier was increased from 1.75% to 1.88% effective July 1, 1999.

Effective July 1, 2001

1. An ad hoc COLA was provided for all retirees and beneficiaries. The ad hoc COLA increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement. Retirees and beneficiaries will also receive two additional increases equal to 0.75% times the monthly benefit, payable July 1, 2001 and July 1, 2002. The two 0.75% increases are conditional. If the actuarial margin is a shortfall, i.e., is negative, by 60 basis points or more, or if the margin has been negative by 30 or more basis points for two years, the Board could elect to suspend the increase.

2. The formula multiplier was increased from 1.88% to 2.00% effective July 1, 2001.