

**Educational Retirement Board  
of New Mexico**

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**ACTUARIAL VALUATION (Revised)**

**June 30, 2001**



**GABRIEL, ROEDER, SMITH & COMPANY**

Consultants & Actuaries

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December 27, 2001

Board of Trustees  
Educational Retirement Board of New Mexico  
P.O. Box 26129  
Santa Fe, NM 87502-0129

Dear Members of the Board:

**Subject: Actuarial Valuation as of June 30, 2001 (Revised)**

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Educational Retirement Board of New Mexico (ERB) as of June 30, 2001. This revised version of our report reflects corrections that were made to the final, audited asset information after our original report was completed.

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 relevant statutes, 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.

To the best of our knowledge, this report is based on benefit provisions in effect as of June 30, 2001, audited financial information prepared as of that date, member data gathered as of that date, and actuarial assumptions and methods previously adopted by the Board.

**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 ERB, and to analyze changes in ERB's condition. In addition, the report provides information required by ERB in connection with Governmental Accounting Standards Board Statement No. 25 (GASB 25), and it provides various summaries of the data.

Valuations are prepared annually, as of June 30 of each year, the last day of ERB's plan and fiscal year.

### **Financing Objectives**

The member and employer contribution rates are established by statute. The current employer contribution rate is 8.65% and the current member contribution rate is 7.60%. In addition, certain higher education employers make an additional contribution equal to 3.00% of the total pay for their employees who elected to join the Alternative Retirement Program rather than ERB. These rates are intended to be sufficient to pay ERB's normal cost and to amortize ERB's unfunded actuarial accrued liability (UAAL) in payments which are level as a percentage of payroll. Except for short-term fluctuations, the amortization period should not exceed the 30-year period allowed under GASB No. 25. (The amortization period, also referred to as the funding period, is the number of years expected to be required to completely amortize the UAAL, assuming that ERB's experience exactly follows the actuarial assumptions.) This funding policy is set by the Board of Trustees, and is considered reasonable by the actuary. The Board has a goal of maintaining a funding period of no more than 25 years.

### **Progress Toward Realization of Financing Objectives**

As of June 30, 2001, the funding period is 12.5 years. This is an increase from last year's funding period of 8.2 years. Therefore, the current statutory rate is adequate. The contribution that would be required in order to amortize the UAAL over 25 years, the Board's target period, is 7.35%. (Last year the 25-year funding rate was 5.98%.)

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) increased from last year. The funded ratio at June 30, 2000 was 91.6%, while it is now 91.9%. Five years ago the ratio stood at 72.1%. During the last fiscal year, the UAAL increased from \$624.8 million to \$652.0 million.

The increase in the funding period is due primarily to higher salary increases last year than anticipated by our assumed rates for longer service employees.

### **Benefit Provisions**

The actuarial valuation reflects the benefit and contribution provisions set forth in the relevant New Mexico statutes. There were no material changes made to these provisions since the previous actuarial valuation. There are no ancillary benefits (such as cost-of-living increases to retirees) funded by a source independent of ERB.

### Assumptions and Methods

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. Some actuarial assumptions were revised since the last actuarial valuation. The last review of these assumptions occurred following the 2000 actuarial valuation, and the Board adopted all of our recommendations. We believe the recommended assumptions are internally consistent and are reasonably based on the actual experience of ERB.

### Member and Financial Data

Member data for retired, active, and inactive participants was supplied as of June 30, 2001, by the ERB staff. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was also supplied by the ERB staff and by the plan's auditors.

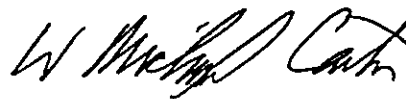
We would like to thank the ERB staff and the auditors for their assistance with this project.

Sincerely,

Gabriel, Roeder, Smith & Company



J. Christian Conradi, ASA, MAAA, EA  
Senior Consultant



W. Michael Carter, FSA, MAAA, EA  
Senior Consultant

nlb

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Executive Summary

Item	2001	2000
Membership		
• Number of		
- Active members	60,155	60,090
- Retirees and beneficiaries	22,191	21,186
- Inactive, vested	4,800	4,450
- Inactive, nonvested	<u>13,401</u>	<u>12,074</u>
- Total	100,547	97,800
• Payroll	\$1,819.6 million	\$1,795.7 million
Statutory contribution rates		
• Employer	8.65%	8.65%
• Member	7.60%	7.60%
Assets		
• Market value	\$6,667.0 million	\$7,567.5 million
• Actuarial value	7,418.3 million	6,835.8 million
• Return on market value	-11.1%	13.1%
• Return on actuarial value	9.5%	15.1%
• Employer contributions	\$161.5 million	\$153.3 million
• External cash flow %	(1.0%)	(0.7%)
Actuarial Information		
• Normal cost %	12.72%	11.54%
• Unfunded actuarial accrued liability (UAAL)	\$652.0 million	\$624.8 million
• Funded ratio	91.9%	91.6%
• Funding period (years)	12.5	8.2
Gains/(losses)		
• Asset experience	\$ 100.1 million	\$ 421.3 million
• Liability experience	(208.0) million	(83.7) million
• Benefit changes (Ad hoc COLA)	N/A	N/A
• Assumption/method changes	<u>31.9 million</u>	<u>N/A</u>
• Total	\$ (76.1) million	\$ 337.6 million

## **Introduction**

Table 1 shows the most significant actuarial results. Table 2 analyzes changes in the UAAL. Tables 3 and 4 show more detailed actuarial information. Tables 5a and 5b develop the GASB 25 Annual Required Contribution for the last fiscal year, and Tables 6a-6c show required GASB 25 disclosure information. Tables 7a, 7b, 15 and 16 show statistical information about the membership, and Tables 8a-11b, and Table 13 show information about plan assets. Tables 12a and 12b show the calculation of the actuarial gains and losses, and Table 14 shows the solvency test, used by some funds in their annual report. Finally, Appendix 1 is a summary of the benefit and contribution provisions of ERB, and Appendix 2 is a summary of the actuarial methods and assumptions.

## **Actuarial Information**

The determination of the unfunded actuarial accrued liability (UAAL) and the funding period 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 \$9,741.3 million, as shown on Table 3.
- The entry age normal funding method is used to allocate the actuarial present value of future benefits between the portion due for the current year (the normal cost), prior years (the actuarial accrued liability) and future years. The actuarial accrued liability is \$8,070.3 million, as shown in line 6d on Table 1.
- 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 rate. The amount needed to fund the current and future normal costs is 12.72% of payroll inclusive of member contributions. 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 contributions of 7.60%, leaving 5.12% to be funded by the employers. I.e., the current year's employer normal cost is 5.12% of payroll. This is shown in Line 3 of Table 1.



- The unfunded actuarial accrued liability (UAAL) is determined by subtracting the actuarial value of assets from the actuarial accrued liability. (The actuarial value of assets is a smoothed market value, as discussed in more detail below.) The UAAL is \$652.0 million, as shown in line 8 on Table 1.
- Since the statutory employer contribution rate is 8.65%, and the employer normal cost rate is 5.12%, the difference of 3.53% is used to amortize the UAAL. The 3% contribution made on behalf of ARP members is also used to amortize the UAAL.
- Finally, the funding period is the anticipated period needed to reduce the UAAL to zero, assuming that plan experience exactly follows the assumptions, that no benefit changes are made, that payroll grows at 3.0% per year, and that the contributions are made as required. The funding period this year is 12.5 years.

#### Analysis of Changes

Table 2 shows an analysis of the changes in the UAAL. Since the UAAL is an actuarial present value, with future anticipated benefits discounted using an 8.00% interest rate, the UAAL increases each year by the imputed interest rate, less employer contributions made to amortize the UAAL. (Keep in mind that part of the employer contribution is used to pay the normal cost, so only part of each year's contribution is available to amortize the UAAL.)

As shown on Table 2, the UAAL increased by \$50.0 million for imputed interest and decreased by \$98.8 million because of payments made. This means that the UAAL was expected to decrease \$48.8 million before recognizing plan experience. The UAAL as of June 30, 2000 was \$624.8 million, and the expected UAAL at June 30, 2001, recognizing actual contributions made, was \$576.0 million.

The plan experienced a liability loss of \$208.0 million. This loss represents 2.6% of the total actuarial accrued liability. The main cause for this loss is the large salary increases granted for the 2000-01 school year. Of the \$208.0 million loss, \$127.8 million is due to salary-related losses, and the balance is mainly due to termination and retirement patterns. For members with more than three years of service, the average increase in pay between last year's valuation and this year's is 8.0%.

However, recognizing past investment gains produced a gain of \$100.1 million. The investment gain resulted from the fact that the return on the actuarial value of assets – 9.5% – was larger than the 8.00% assumed investment return rate. (This gain occurred because of the five-year averaging method used to determine the actuarial value of assets; on market value the return was –11.1%.)

The Board has adopted several changes to the actuarial assumptions, including:

- Decreasing the inflation rate from 3.50% to 3.00%
- Increasing the assumed real return (the return in excess of inflation) from 4.50% to 5.00%
- Decreasing salary scales
- Decreasing payroll growth rate from 3.50% to 3.00%
- Assuming members always choose the greater of a refund and a deferred benefit as their terminated vested benefit

Note that the change to the assumed inflation rate and assumed real rate of return, in combination, produce no change to the assumed 8.00% investment return rate.

These assumptions changes, taken together, caused a decrease of \$31.9 million in the UAAL.

As a result of all these changes and experience, the UAAL increased from \$624.8 million to \$652.0 million, and the funding period increased from 8.2 years to 12.5 years.

### **GASB 25 Disclosure**

Governmental Accounting Standards Board Statement No. 25 (GASB 25) is the relevant accounting standard for governmental retirement systems like ERB.

Tables 5a and 5b show the calculation of the Annual Required Contribution (ARC) as computed under GASB 25, and they show what percent of this amount was actually received. For ERB, the ARC is defined to be the actual contributions required by statute, as long as this is not less than the minimum allowed under GASB 25. The GASB 25 minimum is equal to the normal cost, plus a 30-year amortization of the UAAL. (In prior years we have used a 40-year amortization period as permitted by GASB for a transition period. However, this year we decided to begin using the ultimate GASB 25 maximum period, so that readers have a better understanding of how the statutory contribution rate compares to a realistic measurement of GASB's minimum contribution rate requirement.)

Tables 6a, 6b, and 6c show information required to be reported under GASB 25. Table 6a shows a history of funding progress--a comparison of the actuarial value of assets with the actuarial accrued liability and a comparison of the UAAL with covered payroll. This table shows steady progress over the last five years, with the funded ratio increasing from 91.6% to 91.9% over the last year.

Table 6b shows a six-year comparison of the employer contributions actually received with the GASB 25 ARC. (Since GASB 25 did not become effective for ERB until the 1997 fiscal year, no results are shown for earlier fiscal years.)

Table 6c shows other information which must be included in the notes section of the financial report. The auditor's notes should also disclose the following items that may affect the comparability of the trend information shown in Tables 6a and 6b:

- Actuarial assumptions were changed as June 30, 1998 and June 30, 2001.

### **Benefit Provisions**

Appendix 1 summarizes the provisions of ERB. These have not been materially changed since the previous valuation.

This valuation reflects benefits promised to members by statute. There are no ancillary benefits - retirement type benefits not required by statutes but which might be deemed an ERB 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. ERB's Board adopts the assumptions used, taking into account the actuary's recommendations, as summarized in Appendix 2.

The most significant assumptions are (i) the assumed investment return, currently set at 8.00%, and (ii) the assumption regarding future salary increases, which is based on a table that varies by service and averages about 5.6%.

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 most public-sector plans, ERB 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 ERB. Some of the actuarial assumptions used in this valuation were changed from the ones used last year. Last summer, we prepared an analysis of plan experience over the last several years, made recommendations for several changes, and these were adopted by the Board of Trustees. The subsection on Analysis of Changes, earlier in this Discussion Section, gives more detail about the changes and their aggregate impact.

### Assets

ERB assets are held in trust. The ERB staff and the ERB auditors have provided the asset information used in this valuation.

Table 8a presents a summary of the market value of assets held by the fund, and Table 8b shows the allocation of assets held for investment. About 67% of the assets are now held in equities, kept stable from 67% last year and 63% the year before. Table 9 shows a reconciliation of the assets from the beginning of the prior year to the valuation date.

Tables 10a and 10b show the development of the actuarial value of assets (AVA). The AVA is a smoothed market value. A smoothed value is used in order to dampen some of the year-to-year fluctuations that would occur if the market value were used instead. The method used phases in differences between the actual and expected market returns over five year. The expected return is determined using the 8.00% assumption and the plan's market value, adjusted for contributions received and benefits and refunds paid. Both the actual and expected returns are computed net of administrative expenses.

Note that the actuarial value is 111% of the market value. I.e., historical gains are now being recognized to offset the down turn of the market value.

Table 11a shows the investment return rate for the year on both market value (-11.1%) and actuarial value (9.5%). Table 11b shows historical return rates since the current actuarial asset method was adopted.

Finally, Table 13 shows a history of cash flows to the trust, and the net cash flow measured as a percentage of the assets. The cash flow is slightly negative, 1.0% of market value, but this is not a sign of concern in a mature plan such as ERB.

### **Member Data**

Membership data was provided on electronic files by the ERB staff. Data for active members included sex, birthdate, service, salary paid in the prior year, and accumulated contributions. Data for inactive, nonretired members was similar, but included the member's accrued benefit as well. For retired members, data included 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.

Table 7a summarizes data on all members. Table 7b is a history of key statistical information about active members, and Table 15 is a history of statistical information about retirees. Table 16 is an age/service distribution of active members and their average pay.

The number of active members increased 0.1% since last year, from 60,090 to 60,155. Note that the actual number of active members during the year will be somewhat higher, since the June 30 count excludes May and June retirees, but does not include new teachers who will join the system for the 2001-2002 school year.

Total payroll increased 1.3% since last year. For all comparative purposes, payroll is the amount supplied by the ERB staff (i.e., the 2000-01 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 pay increased 1.2% since last year. While average pay increased only slightly, average pay for members who were active in both this valuation and in last year's increased by 6.6%. This reflects the effect of retirements and terminations, and their replacement by new members who generally earn much less.

**Actuarial Information**

	July 1, 2001 (1)	July 1, 2000 (2)
1. Payroll		
a. Supplied by System	\$ 1,819,553,855	\$ 1,795,715,200
b. Adjusted for one-year's pay increase	1,921,943,600	1,908,477,100
2. Actuarial present value of future pay	\$ 13,136,602,632	\$ 13,825,566,286
3. Normal cost rate (payable monthly)		
a. Total normal cost rate	12.72%	11.54%
b. Less: member contribution rate	<u>(7.60%)</u>	<u>(7.60%)</u>
c. Employer normal cost rate	5.12%	3.94%
4. Employer normal cost (Item 3c * Item 1b)	\$ 98,403,512	\$ 75,193,998
5. Actuarial accrued liability for active members		
a. Actuarial present value of future benefits	\$ 5,968,823,600	\$ 5,583,541,500
b. Less: actuarial present value of future normal costs (Item 3a * Item 2)	<u>(1,670,975,855)</u>	<u>(1,595,470,349)</u>
c. Actuarial accrued liability	\$ 4,297,847,745	\$ 3,988,071,151
6. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 3,604,455,400	\$ 3,322,038,600
b. Inactive members	168,032,149	150,509,848
c. Active members (Item 5c)	<u>4,297,847,745</u>	<u>3,988,071,151</u>
d. Total	\$ 8,070,335,294	\$ 7,460,619,599
7. Actuarial value of assets	\$ 7,418,311,093	\$ 6,835,842,591
8. Unfunded actuarial accrued liability (UAAL) (Item 6d - Item 7)	\$ 652,024,201	\$ 624,777,008
9. Amortization payment		
a. Employer contribution rate	8.65%	8.65%
b. Less: Employer normal cost rate (Item 3c)	<u>(5.12%)</u>	<u>(3.94%)</u>
c. Amortization rate	3.53%	4.71%
d. Amortization contribution (Item 9c * Item 1b)	\$ 67,844,609	\$ 89,889,271
e. Expected ARP contribution	<u>2,533,279</u>	<u>2,494,833</u>
d. Total	\$ 70,377,888	\$ 92,384,104
10. Funding period based on current 8.65% employer contribution requirement, with payments increasing at assumed payroll growth rate	12.5 years	8.2 years

**Analysis of Change in Unfunded Actuarial Accrued Liability (UAAL)**

Basis (1)	June 30, 2001 (2)	June 30, 2000 (3)
1. UAAL at prior valuation	\$ 624.8	\$ 983.1
2. Increases/(decreases) due to:		
a. Interest on UAAL	50.0	78.6
b. Amortization payments <sup>1</sup>	(98.8)	(99.3)
c. Liability experience	208.0	83.7
d. Asset experience	(100.1)	(421.3)
e. Changes in actuarial assumptions and methods	(31.9)	N/A
f. Ad hoc COLA	N/A	N/A
g. Total	27.2	(358.3)
3. Current UAAL (1+2g)	652.0	624.8

Note: Dollar amounts in millions

<sup>1</sup> Actual contributions reduced by normal cost, and adjusted for timing.

**Actuarial Present Value of Future Benefits**

	June 30, 2001 (1)	June 30, 2000 (2)
1. Active members		
a. Service retirement benefits	\$ 5,379,912,000	\$ 5,128,018,000
b. Refunds and deferred termination benefits	481,532,400	350,942,100
c. Survivor benefits	40,826,900	39,161,600
d. Disability retirement benefits	66,552,300	65,419,800
e. Total	<u>\$ 5,968,823,600</u>	<u>\$ 5,583,541,500</u>
2. Retired members		
a. Service retirement	\$ 3,410,037,700	\$ 3,141,597,600
b. Disability retirement	40,939,900	37,995,200
c. Beneficiaries	153,477,800	142,445,800
d. Total	<u>\$ 3,604,455,400</u>	<u>\$ 3,322,038,600</u>
3. Inactive members		
a. Vested terminations	\$ 131,893,335	\$ 119,344,315
b. Nonvested terminations	36,138,814	31,165,533
c. Total	<u>\$ 168,032,149</u>	<u>\$ 150,509,848</u>
4. Total actuarial present value of future benefits	<u>\$ 9,741,311,149</u>	<u>\$ 9,056,089,948</u>



**Analysis of Normal Cost**

	<u>June 30, 2001</u>	<u>June 30, 2000</u>
	(1)	(2)
1. Gross normal cost rate (payable monthly)		
a. Service retirement benefits	8.92%	8.66%
b. Refunds and deferred termination benefits	3.57%	2.56%
c. Disability retirement benefits	0.16%	0.22%
d. Survivor benefits	0.07%	0.09%
e. Total	<u>12.72%</u>	<u>11.54%</u>
2. Less: member contribution rate	<u>(7.60%)</u>	<u>(7.60%)</u>
3. Employer normal cost rate	5.12%	3.94%

**Calculation of GASB 25 ARC as Percent of Payroll  
 (For Following Fiscal Year)**

	<u>June 30, 2001</u> (1)	<u>June 30, 2000</u> (2)
1. Long term GASB 25 funding period (years)	30	40
2. Amortization contribution percentage		
a. Amortization payment	\$ 41,513,982	\$ 33,207,502
b. Less: expected payment for ARP members	<u>2,533,279</u>	<u>2,494,833</u>
c. Net (a-b)	\$ 38,980,703	\$ 30,712,668
d. Expected payroll	1,921,943,600	1,908,477,100
e. Amortization contribution percentage (c/d)	2.03%	1.61%
3. GASB 25 Annual Required Contribution		
a. Employer normal cost rate	5.12%	3.94%
b. Amortization percentage	<u>2.03%</u>	<u>1.61%</u>
c. Total	7.15%	5.55%
d. Statutory rate	8.65%	8.65%
e. ARC ( max of (c,d) )	8.65%	8.65%

**Actual Contributions as Percentage of  
GASB 25 ARC for Year Ending 06/30/2001**

1. Actual contributions	
a. On behalf of ERB members	\$ 159,064,846
b. On behalf of ARP members	2,459,494
c. Total	\$ 161,524,340
2. Statutory employer contribution rate	8.65%
3. Imputed fiscal year payroll for ERB members (Item 1a / Item 2)	\$ 1,838,899,954
4. GASB 25 Annual Required Contribution	
a. Required GASB 25 employer contribution for ERB members as percent of payroll	8.65%
b. Required GASB 25 employer contribution for ERB members (Item 4a * Item 3)	\$ 159,064,846
c. GASB 25 ARC (Item 4b + Item 1b)	\$ 161,524,340
5. Percentage of ARC contributed (Item 1c / Item 4c)	100.0%

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

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
June 30, 1996	\$3,993.6	\$5,542.3	\$1,548.7	72.1%	\$1,413.6	109.6%
June 30, 1997	\$4,516.4	\$5,854.4	\$1,338.0	77.1%	\$1,448.7	92.4%
June 30, 1998	\$5,169.5	\$6,398.8	\$1,229.3	80.8%	\$1,542.8	79.7%
June 30, 1999	\$5,988.5	\$6,971.7	\$983.1	85.9%	\$1,637.5	60.0%
June 30, 2000	\$6,835.8	\$7,460.6	\$624.8	91.6%	\$1,795.7	34.8%
June 30, 2001	\$7,418.3	\$8,070.3	\$652.0	91.9%	\$1,819.6	35.8%

Note: Dollar amounts in millions

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

<u>Fiscal Year</u>	<u>Annual Required Contribution</u>	<u>Percentage Contributed</u>
1996	Not computed	N/A
1997	\$131,535,477	98.9%
1998	\$136,190,862	100.0%
1999	\$145,521,527	100.0%
2000	\$153,260,317	100.0%
2001	\$161,524,340	100.0%

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	June 30, 2001
Actuarial cost method	Entry Age Normal
Amortization method	Level payment, open
Remaining amortization period (years)	12.5
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	4.50% to 13.00%
*Includes inflation at	3.00%
Cost-of-living adjustments	2.00%

**Membership Data**

	<u>June 30, 2001</u>	<u>June 30, 2000</u>
	(1)	(2)
1. Active members		
a. Number	60,155	60,090
b. Total payroll supplied by System	\$ 1,819,553,855	\$ 1,795,715,200
c. Average salary	\$ 30,248	\$ 29,884
d. Average age	44.9	44.5
e. Average service	9.2	9.1
2. Vested inactive members (excluding pending refunds)		
a. Number	4,800	4,450
b. Total annual deferred benefits	\$ 26,345,464	\$ 23,980,934
c. Average annual deferred benefit	5,489	5,389
3. Nonvested inactive members and vested pending refunds		
a. Number	13,401	12,074
b. Employee assessments with interest due	\$ 36,138,814	\$ 31,165,533
c. Average refund due	2,697	2,581
4. Service retirees		
a. Number	19,930	19,027
b. Total annual benefits	\$ 317,670,322	\$ 292,449,484
c. Average annual benefit	15,939	15,370
5. Disabled retirees		
a. Number	580	562
b. Total annual benefits	\$ 4,235,904	\$ 3,993,592
c. Average annual benefit	7,303	7,106
6. Beneficiaries		
a. Number	1,681	1,597
b. Total annual benefits	\$ 17,251,985	\$ 15,797,862
c. Average annual benefit	10,263	9,892

**Historical Summary of Active Member Data**

Year Ending June 30,	Active Members		Covered Payroll		Average Salary		Average Age	Average Service
	Number	Percent Increase	Amount in \$ Millions	Percent Increase	\$ Amount	Percent Increase		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1982	42,015	---	\$622	---	\$14,810	---	40.9	10.7
1984	40,385	-3.9%	670	7.7%	16,600	12.1%	42.0	9.9
1986	45,311	12.2%	786	17.3%	17,353	4.5%	41.7	9.7
1988	45,492	0.4%	863	9.8%	18,968	9.3%	43.9	10.1
1990	48,858	7.4%	1,033	19.7%	21,146	11.5%	42.6	8.5
1992	51,161	4.7%	1,150	11.3%	22,486	6.3%	43.0	8.9
1993	52,296	2.2%	1,191	3.6%	22,774	1.3%	43.2	8.9
1994	53,744	2.8%	1,259	5.7%	23,420	2.8%	43.3	9.0
1995	54,840	2.0%	1,356	7.7%	24,735	5.6%	43.2	9.0
1996	55,782	1.7%	1,414	4.3%	25,341	2.4%	43.7	9.1
1997	56,685	1.6%	1,449	2.5%	25,556	0.8%	43.9	9.1
1998	58,097	2.5%	1,543	6.5%	26,555	3.9%	44.0	9.0
1999	58,615	0.9%	1,637	6.1%	27,936	5.2%	44.3	9.2
2000	60,090	2.5%	1,796	9.7%	29,884	7.0%	44.5	9.1
2001	60,155	0.1%	1,820	1.3%	30,248	1.2%	44.9	9.2



**Plan Net Assets**  
**(Assets at Market or Fair Value)**

Item (1)	Valuation as of	
	June 30, 2001 (2)	June 30, 2000 (3)
1. Cash and cash equivalents	\$ 104,653,543	\$ 106,861,870
2. Receivables:		
a. Contributions	\$ 43,866,087	\$ 38,818,036
b. Investment income	27,886,454	31,003,568
c. Investment sales proceeds - brokers	47,907,015	38,457,392
d. Other	13,357	8,052
e. Total receivables	\$ 119,672,913	\$ 108,287,048
3. Investments		
a. U.S. treasury securities	\$ 580,929,000	\$ 652,553,228
b. U.S. government agencies	820,044,813	772,971,188
c. Domestic corporate bonds	681,938,490	908,086,475
d. Domestic equities	3,352,274,718	4,018,232,778
e. International equities	1,072,736,336	1,070,564,740
f. Total investments	\$ 6,507,923,357	\$ 7,422,408,409
4. Invested securities lending collateral	\$ 458,223,989	\$ 614,944,316
5. Properties : land, building, furniture and equipment (at cost, less accumulated depreciation)	\$ 1,139,216	\$ 1,359,575
6. Total assets	\$ 7,191,613,018	\$ 8,253,861,218
7. Liabilities		
a. Accounts payable	\$ 1,217,349	\$ 1,413,327
b. Accrued expenses	171,701	138,468
c. Refunds payable	3,091,297	3,859,390
d. Investment purchases payable - brokers	61,695,792	65,826,431
e. Due to other funds	210,949	154,038
f. Securities lending collateral	458,223,989	614,944,316
g. Total liabilities	\$ 524,611,077	\$ 686,335,970
8. Total market value of assets available for benefits (Item 6 - Item 7)	\$ 6,667,001,941	\$ 7,567,525,248

**Allocation of Cash and Investments**

	<u>June 30, 2001</u>	<u>June 30, 2000</u>
1. Cash and short-term equivalents	1.6%	1.4%
2. U.S. treasury securities	8.8%	8.7%
3. U.S. government agencies	12.4%	10.3%
4. Domestic corporate bonds	10.3%	12.1%
5. Domestic equities	50.7%	53.3%
6. International equities	<u>16.2%</u>	<u>14.2%</u>
7. Total investments	100.0%	100.0%

**Reconciliation of Plan Net Assets**

	Year Ending	
	June 30, 2001 (1)	June 30, 2000 (2)
1. Value of assets at beginning of year	\$ 7,567,525,248	\$ 6,740,382,211
2. Revenue for the year		
a. Contributions		
i. Member contributions (including redeposits and service purchases)	\$ 153,719,801	\$ 142,625,585
ii. Employer contributions	159,064,846	150,849,850
iii. Employer contributions for ARP members	2,459,494	2,410,467
iv. Total	\$ 315,244,141	\$ 295,885,902
b. Income		
i. Interest, dividends, and other income*	\$ 148,343,115	\$ 160,218,869
ii. Investment expenses	(4,790,177)	(5,190,952)
iii. Net	\$ 143,552,938	\$ 155,027,917
c. Net realized and unrealized gains	\$ (978,572,992)	\$ 725,739,548
d. Total revenue	\$ (519,775,913)	\$ 1,176,653,367
3. Expenditures for the year		
a. Refunds	\$ 36,633,912	\$ 35,152,631
b. Benefit payments	340,595,679	311,813,766
c. Administrative and miscellaneous expenses	3,517,803	2,543,933
d. Total expenditures	\$ 380,747,394	\$ 349,510,330
4. Increase in net assets (Item 2 - Item 3)	\$ (900,523,307)	\$ 827,143,037
5. Value of assets at end of year (Item 1 + Item 4)	\$ 6,667,001,941	\$ 7,567,525,248

\* Note: Other income for FY2001 includes (\$27,351,330) correction to FY2000 asset value made after last year's report was prepared.

**Determination of Excess Earnings to be Deferred**

Year ended :	<u>June 30, 1998</u>	<u>June 30, 1999</u>	<u>June 30, 2000</u>	<u>June 30, 2001</u>
	(1)	(2)	(3)	(4)
1. MVA at beginning of year	\$ 5,107,334,876	\$ 6,082,051,510	\$ 6,740,382,211	\$ 7,567,525,248
2. Net new investments				
a. Contributions	\$ 260,935,922	\$ 278,858,412	\$ 295,885,902	\$ 315,244,141
b. Benefits and refunds paid	<u>(282,652,725)</u>	<u>(304,790,657)</u>	<u>(346,966,397)</u>	<u>(377,229,591)</u>
c. Subtotal	\$ (21,716,803)	\$ (25,932,245)	\$ (51,080,495)	\$ (61,985,450)
3. MVA at end of year	\$ 6,082,051,510	\$ 6,740,382,211	\$ 7,567,525,248	\$ 6,667,001,941
4. Net MVA earnings ( 3 - 1 - 2)	\$ 996,433,437	\$ 684,262,946	\$ 878,223,532	\$ (838,537,857)
5. Assumed investment return rate	8.00%	8.00%	8.00%	8.00%
6. Expected return	\$ 407,718,118	\$ 485,526,831	\$ 537,187,357	\$ 602,922,602
7. Excess return ( 4 - 6)	\$ 588,715,319	\$ 198,736,115	\$ 341,036,175	\$ (1,441,460,459)
8. Excess return deferral percent	20%	40%	60%	80%
9. Amount deferred	\$ 117,743,064	\$ 79,494,446	\$ 204,621,705	\$ (1,153,168,367)

Note : MVA is market value of assets.

**Development of Actuarial Value of Assets**

1. Market value of assets as of valuation	\$	6,667,001,941
2. Deferred amounts for fiscal year ending June 30,		
a. 2001	\$	(1,153,168,367)
b. 2000	\$	204,621,705
c. 1999	\$	79,494,446
d. 1998	\$	<u>117,743,064</u>
e. Total	\$	(751,309,152)
3. Actuarial value of assets (1) - (2)	\$	7,418,311,093
4. Actuarial value as percent of market		111.3%

**Estimation of Yields**

	Year Ending	
	June 30, 2001 (1)	June 30, 2000 (2)
<b>A. Market value yield</b>		
1. Beginning of year market assets	\$ 7,567,525,248	\$ 6,740,382,211
2. Investment income (including realized and unrealized gains and losses)	\$ (835,020,054)	\$ 880,767,465
3. End of year market assets	\$ 6,667,001,941	\$ 7,567,525,248
4. Estimated dollar weighted market value yield	-11.1%	13.1%
<b>B. Actuarial value yield</b>		
1. Beginning of year actuarial assets	\$ 6,835,842,591	\$ 5,988,547,319
2. Actuarial return	\$ 644,453,952	\$ 898,375,767
3. End of year actuarial assets	\$ 7,418,311,093	\$ 6,835,842,591
4. Estimated actuarial value yield	9.5%	15.1%

**History of Investment Return Rates**

<u>Plan Year Ending June 30 of</u> (1)	<u>Market</u> (2)	<u>Actuarial</u> (3)
1995	18.5%	11.5%
1996	12.2%	12.0%
1997	20.3%	13.4%
1998	19.6%	15.0%
1999	11.3%	16.4%
2000	13.1%	15.1%
2001	-11.1%	9.5%

**Investment Experience Gain or Loss**

Item (1)	June 30, 2001 (2)	June 30, 2000 (3)
1. Actuarial assets, beginning of year	\$ 6,835,842,591	\$ 5,988,547,319
2. Total contributions during year	\$ 315,244,141	\$ 295,885,902
3. Benefits and refunds paid	\$ (377,229,591)	\$ (346,966,397)
4. Assumed net investment income at 8%		
a. Beginning of year assets	\$ 546,867,407	\$ 479,083,786
b. Contributions	12,609,766	11,835,436
c. Benefits and refunds paid	<u>(15,089,184)</u>	<u>(13,878,656)</u>
d. Total	\$ 544,387,989	\$ 477,040,566
5. Expected actuarial assets, end of year (Sum of items 1 through 4)	\$ 7,318,245,130	\$ 6,414,507,390
6. Actual actuarial assets, end of year	\$ 7,418,311,093	\$ 6,835,842,591
7. Asset gain (loss) for year (Item 6 - Item 5)	\$ 100,065,963	\$ 421,335,201



**Total Experience Gain or Loss**

Item (1)	June 30, 2001 (2)	June 30, 2000 (3)
<b>A. Calculation of total actuarial gain or loss</b>		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 624,777,008	\$ 983,120,274
2. Normal cost for the previous year	\$ 220,238,258	\$ 200,332,034
3. Less: contributions for the year	\$ (315,244,141)	\$ (295,885,902)
4. Interest at 8 %		
a. On UAAL	\$ 49,982,161	\$ 78,649,623
b. On normal cost	8,809,530	8,013,281
c. On contributions	(12,609,766)	(11,835,436)
d. Total	\$ 46,181,925	\$ 74,827,468
5. Expected UAAL (Sum of Items 1 - 4)	\$ 575,953,050	\$ 962,393,874
6. Actual UAAL	\$ 652,024,201	\$ 624,777,008
7. Total gain (loss) for the year (Item 5 - Item 6)	\$ (76,071,151)	\$ 337,616,867
<b>B. Source of gains and losses</b>		
8. Asset gain (loss) for the year	\$ 100,065,963	\$ 421,335,201
9. Liability gain (loss) for the year	\$ (208,007,239)	\$ (83,718,334)
10. Assumption change	\$ 31,870,125	N/A
11. Ad hoc COLA	N/A	N/A
12. Total	\$ (76,071,151)	\$ 337,616,867

### History of Cash Flow

Year Ending June 30,	Contributions <sup>1</sup>	Expenditures					External Cash Flow for the Year <sup>3</sup>	Market Value of Assets	External Cash Flow as Percent of Market Value
		Benefit Payments	Refunds	Administrative Expenses <sup>2</sup>	Other	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1990	160.8	(110.2)	(19.0)	(1.3)	(3.1)	(133.6)	27.2	2,088.7	1.3%
1992	185.5	(142.6)	(18.7)	(1.5)	(3.2)	(166.0)	19.5	2,729.3	0.7%
1993	188.4	(159.1)	(18.1)	(1.6)	0.0	(178.8)	9.6	3,178.6	0.3%
1994	214.2	(175.3)	(19.8)	(1.7)	0.0	(196.8)	17.4	3,190.0	0.5%
1995	229.7	(193.1)	(22.3)	(2.0)	0.0	(217.4)	12.3	3,792.3	0.3%
1996	238.9	(210.6)	(23.9)	(2.3)	0.0	(236.8)	2.1	4,257.2	0.0%
1997	245.6	(231.6)	(24.7)	(1.9)	0.0	(258.2)	(12.6)	5,107.3	(0.2%)
1998	260.9	(254.4)	(28.2)	(2.1)	0.0	(284.7)	(23.8)	6,082.1	(0.4%)
1999	278.9	(274.8)	(30.0)	(2.7)	0.0	(307.5)	(28.6)	6,740.4	(0.4%)
2000	295.9	(311.8)	(35.2)	(2.5)	0.0	(349.5)	(53.6)	7,567.5	(0.7%)
2001	315.2	(340.6)	(36.6)	(3.5)	0.0	(380.7)	(65.5)	6,667.0	(1.0%)

Amounts in \$ millions

<sup>1</sup> Column (2) includes employee assessments and employer contributions, as well as employer contributions for ARP members.

<sup>2</sup> Excludes investment expenses starting in 1997.

<sup>3</sup> Column (8) = Column (2) + Column (7).

**Solvency Test**

	<u>June 30, 2001</u> (1)	<u>June 30, 2000</u> (2)
1. Actuarial accrued liability (AAL)		
a. Active member contributions	\$ 1,023,953,742	\$ 967,956,658
b. Retirees and beneficiaries	3,604,455,400	3,322,038,600
c. Active and inactive members (employer financed)	<u>3,441,926,152</u>	<u>3,170,624,341</u>
d. Total	\$ 8,070,335,294	\$ 7,460,619,599
2. Actuarial value of assets	\$ 7,418,311,093	\$ 6,835,842,591
3. Cumulative portion of AAL covered		
a. Active member contributions	100%	100%
b. Retirees and beneficiaries	100%	100%
c. Active and inactive members (employer financed)	81%	80%

**Historical Retired Participants' Data**

<u>Year Ending June 30,</u>	<u>Number</u>	<u>Average Monthly Benefit</u>
(1)	(2)	(3)
1984	8,462	\$430
1986	10,004	512
1988	11,375	663
1990	12,741	767
1992	14,107	846
1993	15,001	890
1994	15,814	966
1995	16,593	976
1996	17,381	1,011
1997	18,317	1,055
1998	19,244	1,104
1999	20,109	1,139
2000	21,186	1,228
2001	22,191	1,274

**Distribution of Active Members by Age and by Years of Service**  
**As of 06/30/2001**

Attained Age	Years of Credited Service													Total Count & Avg. Comp.
	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.	
Under 25	667 \$14,925	786 \$18,141	116 \$16,472	65 \$15,577	15 \$19,157	15 \$18,899	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,664 \$16,652
25-29	625 \$19,865	1,552 \$24,248	683 \$24,717	518 \$25,300	329 \$27,049	413 \$24,598	5 \$23,718	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	4,125 \$24,052
30-34	568 \$22,831	1,415 \$23,252	693 \$23,546	600 \$24,464	517 \$26,630	1,619 \$29,177	274 \$27,750	7 \$28,089	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	5,693 \$25,588
35-39	690 \$21,592	1,499 \$20,988	726 \$23,255	659 \$24,312	528 \$25,217	1,983 \$28,103	1,141 \$31,828	298 \$32,542	15 \$29,156	0 \$0	0 \$0	0 \$0	0 \$0	7,539 \$25,833
40-44	539 \$25,441	1,390 \$21,537	764 \$22,818	705 \$23,796	593 \$23,938	2,520 \$27,894	1,605 \$34,448	1,139 \$38,187	474 \$36,543	16 \$29,410	0 \$0	0 \$0	0 \$0	9,745 \$28,622
45-49	518 \$24,089	1,162 \$23,964	640 \$24,831	617 \$27,048	538 \$27,687	2,454 \$29,171	2,070 \$33,739	1,348 \$39,511	1,476 \$43,662	427 \$42,500	3 \$47,225	0 \$0	0 \$0	11,253 \$32,455
50-54	370 \$24,539	835 \$26,594	518 \$26,151	475 \$27,746	382 \$27,283	1,958 \$30,282	1,971 \$34,733	1,451 \$40,982	1,393 \$43,464	1,039 \$48,244	137 \$54,108	0 \$0	0 \$0	10,529 \$35,495
55-59	179 \$24,668	469 \$25,164	262 \$26,025	244 \$28,585	220 \$27,387	934 \$30,279	1,116 \$34,197	883 \$37,675	818 \$43,122	553 \$47,252	215 \$57,233	20 \$58,492	0 \$0	5,913 \$35,621
60-64	75 \$25,250	180 \$25,620	109 \$24,444	119 \$24,536	82 \$23,725	483 \$28,043	520 \$31,686	347 \$37,838	377 \$38,656	249 \$45,689	120 \$66,672	58 \$59,438	5 \$58,607	2,724 \$34,830
65-69	27 \$20,647	58 \$22,426	34 \$18,321	33 \$29,619	25 \$21,680	152 \$23,795	106 \$30,340	82 \$41,430	63 \$34,331	47 \$47,753	26 \$68,604	10 \$75,049	6 \$68,547	669 \$32,262
70 & Over	19 \$18,551	37 \$17,333	15 \$14,185	12 \$17,280	15 \$18,763	60 \$17,360	57 \$22,043	27 \$21,327	16 \$46,291	23 \$38,458	6 \$46,212	8 \$48,543	6 \$63,851	301 \$24,064
Total	4,277 \$21,680	9,383 \$22,871	4,560 \$23,944	4,047 \$25,337	3,244 \$26,071	12,591 \$28,676	8,865 \$33,473	5,582 \$38,783	4,632 \$42,206	2,354 \$46,465	507 \$59,016	96 \$59,959	17 \$63,966	60,155 \$30,248

### Summary of Plan Provisions

1. Effective Date: July 1, 1967.
2. Plan Year: Twelve-month period ending June 30th.
3. Administration: The Educational Retirement Board is responsible for administration of the System and investment of System assets.
4. Type of Plan: The System is a qualified, defined benefit, governmental retirement plan. For government accounting purposes, it is a cost-sharing multiple-employer PERS.
5. Eligibility: All teachers, nurses and administrators employed by public schools in New Mexico, including public colleges and universities, participate in the System. These are the "regular members", and their participation is a condition of employment. However, see the section on the Alternative Retirement Plan below for an exception. Generally, other employees of these schools are also required to participate, although such employees employed continuously since June 30, 1971 may exempt themselves from membership. Certain other employees of various state schools and agencies also participate.
6. Member Contributions: All active members contribute 7.6% of their earnings. Substantially all earnings are included for this purpose. Employee contributions are "picked up" by the local employer for federal income tax treatment.
7. Employer Contributions: The school district or other local administrative unit which employs a member contributes 8.65% of the member's earnings. In addition, state universities contribute 3% of the earnings of non-members who are participating in the Alternative Retirement Plan.
8. Service: Employees receive credit for each calendar quarter in which they are contributing members. Credit is also granted for service prior to the System's effective date, and certain military service. Credit may also be purchased for some out-of-state service under certain circumstances.
9. Final Average Compensation (FAC): The average of the member's earnings for the last five consecutive years, or such other five consecutive year period that gives the largest average. Monthly benefits are based on one-twelfth of this amount.

10. Normal Retirement

- a. Eligibility: A member may retire upon Normal Retirement on the earliest of (i) the date he/she attains age 65 with credit for 5 years of service, or (ii) the date the member completes 25 years of service, or (iii) the date that the sum of the member's age and service is at least 75, provided the member is at least age 60.
- b. Monthly Benefit: 2.35% 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 accumulated contributions with 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.

11. Early Retirement

- a. Eligibility: A member may take early retirement once the sum of his/her age and service equals or exceeds 75.
- b. Monthly Benefit: 2.35% of FAC (monthly) times years of service, multiplied by the early retirement factor below.
- c. Early Retirement Factor:

Age at Retirement	Factor
60 or later	1.000
59	.976
58	.952
57	.928
56	.904
55	.880
54	.808
53	.736
52	.664
51	.592
50	.520
49	.448
48	.376
47	.304
46	.232
45	.160

- d. Payment Form: Same as for Normal Retirement above.

12. Disability Retirement

- a. Eligibility: A member is eligible provided (i) he/she has credit for at least 10 years of service, and (ii) the disability is approved by the Board.
- b. Monthly Benefit: 2% of FAC (monthly) times years of service, but not less than the smaller of (i) one-third of FAC, or (ii) 2% of FAC times years of service projected to age 60.
- c. Payment Form: The disability benefit commences immediately upon the member's retirement. Disability benefits are payable as a monthly life annuity, with a guarantee that if the payments made do not exceed the sum of the member's accumulated contributions with interest as of the date of retirement, the balance will be paid in a lump-sum to the member's beneficiary. If the disabled member survives to age 60, the regular optional forms of payment are available.

13. Vested Termination Benefit

- a. Eligibility: A member with at least 5 years of service who does not withdraw his/her contributions from the fund is eligible for a vested termination benefit.
- b. Monthly Benefit: 2.35% of FAC (monthly) times years of service. Both FAC and service are determined at the time the member leaves active employment.
- c. Payment Form: Benefits commence when the participant attains his/her normal retirement age. Optionally benefits may commence at the early retirement age, applying the same reduction factors as are used for regular early retirement. The form of payment is the same as for Normal Retirement above.

14. Withdrawal (Refund) Benefit

- a. Eligibility: All members leaving covered employment with less than 5 years of service for a reason other than the member's death. Optionally, members eligible for other benefits may withdraw their contributions in lieu of the regular benefits due.
- b. Benefit: The member who elects to withdraw receives a lump-sum payment of his/her employee contributions, plus interest computed at a rate equal to 75% of the five-year average return for the trust fund.



15. Death in Service

Benefit: Upon the death of an active member, the beneficiary may receive a refund of the member's contributions, plus interest based upon the yield for the trust fund during the preceding year. Alternatively, if the member has five or more years of service, the beneficiary may elect to receive an annuity determined as though the member had retired, elected option B below, and then died. If the member is not eligible for early or normal retirement, this benefit may still be elected, with payments deferred until the member would have been eligible for retirement.

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

- a. Option B - A Joint and 100% Survivor annuity with a "pop-up" feature. The regular life annuity amount is reduced to provide a Joint and 100% Survivor benefit, i.e., a benefit payable as long as either the member or his joint annuitant shall live. However, if the joint annuitant predeceases the member, then the member's benefit amount reverts back to the regular life annuity amount. The "pop-up" feature is subsidized by the System.
- b. Option C - A Joint and 50% Survivor annuity with a pop-up feature. The benefit is reduced to provide a Joint and 50% Survivor benefit, i.e., a benefit payable as long as both the member and the joint annuitant are alive, reducing to 50% of this amount upon the member's death, if the joint annuitant is still living. If the joint annuitant predeceases the member, the benefit reverts to the regular life annuity amount. The pop-up feature is subsidized by the System.

17. Cost-of-living Increase: All retired members and beneficiaries receiving benefits receive an automatic adjustment in their benefit each July, beginning in the year they attain age 65. The adjustment is equal to one-half the change in the cost of living, except that the adjustment shall not exceed four percent, nor be less than two percent. Members retired prior to July 1, 1984 are also entitled to an increase of the lesser of 2% or the increase in the cost of living for years prior to the attainment of 65. Members on disability are entitled to an adjustment commencing on July 1 of the third full year following disability retirement.

18. Alternative Retirement Plan (ARP): Beginning July 1, 1991, new faculty members employed by state universities may elect participation in the ARP rather than in this System. If this election is not made, the employee remains a member of this System permanently. No benefits are paid to ARP members from ERB. Also see the section on Employer Contributions above.

## Summary of Actuarial Methods and Assumptions

### I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

### II. Actuarial Cost Method

The contribution rate is set by statute for both employees and for the local employers. The funding period is determined, as described below, using the Entry Age Normal actuarial cost method.

The Entry Age Normal actuarial cost method assigns the plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded 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 the normal costs for future years. Then each year's contribution is composed of (i) that year's normal cost, plus (ii) a payment used to reduce the unfunded actuarial accrued liability.

The normal cost is the level (as a percentage of pay) contribution required to fund the benefits for a new member. This is determined based upon a hypothetical group of new entrants. This group is based on the age-pay-sex distribution of new members joining ERB in the plan year ending June 30, 2000. Part of the normal cost is paid from the employees' own contributions. The local employers pay the balance from their contributions.

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the actuarial value of assets.

The balance of the employers' contributions--the remainder after paying their share of the normal cost--is used to reduce the unfunded actuarial accrued liability. The funding period is the length of time required for the unfunded actuarial accrued liability to be completely amortized, assuming that the portion used to reduce the unfunded remains level as a percentage of total payroll, which is assumed to grow 3.00% per year. The 3.00% contribution made by employers to ERB on behalf of employees who elected to participate in the Alternative Retirement Plan is also used to amortize the unfunded actuarial accrued liability.

It is assumed that all contributions are made monthly at the end of the month.

III. Actuarial Value of Assets

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).

IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 8.00%, compounded annually, net of expenses.
2. Salary increase rate: Inflation rate of 3.00% plus productivity increase rate of 1.50% plus step-rate/promotional as shown:

Years of Service	Annual Step-Rate/Promotional Component Rates of Increase	Total Annual Rate of Increase
0	8.50%	13.00%
1	2.75%	7.25%
2	1.75%	6.25%
3	1.25%	5.75%
4	1.00%	5.50%
5	0.75%	5.25%
6	0.50%	5.00%
7	0.25%	4.75%
8	0.25%	4.75%
9	0.25%	4.75%
10 or more	0.00%	4.50%

3. Cost-of-living increases:
  - a. All retirees and beneficiaries - 2% per year increase, beginning in the year the member reaches age 65
  - b. Members retired prior to July 1, 1984 - 2% per year until they reach age 65
4. Payroll growth:
 

3.00% per year (with no allowance for membership growth)

B. Demographic Assumptions

1. Mortality after termination or retirement -

- a. Healthy males - 1994 Uninsured Pensioner Mortality Table for males, set back two years
- b. Healthy females - 1994 Uninsured Pensioner Mortality Table for females, set back one year
- c. Disabled males and females - 1981 Disability Table

See sample rates below:

Age	Deaths per 100 Lives		
	Healthy Males	Healthy Females	Disabled Males and Females
40	.10	.07	1.76
45	.15	.10	2.08
50	.23	.14	2.42
55	.39	.22	2.83
60	.68	.42	3.29
65	1.23	.82	3.76
70	2.14	1.37	4.36
75	3.35	2.19	5.62
80	5.40	3.80	8.84
85	8.87	6.56	12.95

2. Mortality rates of active members - As shown below for sample ages:

Age	Deaths per 100 Members	
	Males	Females
25	.10	.02
30	.10	.02
35	.08	.04
40	.08	.03
45	.11	.05
50	.15	.10
55	.23	.17
60	.31	.24
65	.46	.31

3. Disability - As shown below for selected ages (rates are only applied to eligible members — members with at least 10 years of service):

Age	Occurrence of Disability per 100 Members	
	Males	Females
25	.00	.00
30	.00	.03
35	.06	.07
40	.13	.12
45	.19	.16
50	.24	.19
55	.26	.20
60	.24	.19
65	.18	.16

4. Retirement - Select and ultimate as shown below for selected ages (rates are only applied to members eligible for retirement):

Retirement Per 100 Members

Age	Males Years of Service					
	0-4	5-9	10-14	15-19	20-24	25+
45	0.00	0.00	0.00	0.00	0.00	25.00
50	0.00	0.00	0.00	0.00	0.00	25.00
55	0.00	0.00	0.00	0.00	5.00	26.00
60	0.00	0.00	0.00	16.00	10.00	35.00
62	0.00	0.00	35.00	30.00	30.00	60.00
65	0.00	50.00	50.00	50.00	50.00	60.00
70	100.00	100.00	100.00	100.00	100.00	100.00

Age	Females Years of Service					
	0-4	5-9	10-14	15-19	20-24	25+
45	0.00	0.00	0.00	0.00	0.00	20.00
50	0.00	0.00	0.00	0.00	0.00	20.00
55	0.00	0.00	0.00	0.00	6.00	23.00
60	0.00	0.00	0.00	20.00	15.00	30.00
62	0.00	0.00	50.00	35.00	35.00	40.00
65	0.00	35.00	35.00	35.00	35.00	35.00
70	100.00	100.00	100.00	100.00	100.00	100.00

5. Termination (for causes other than death, disability or retirement) - Select and ultimate as shown below for selected ages:

Terminations per 100 Members

Males

Years of Service

Age	0	1	2	3	4	5	6	7	8	9	10+
25	45.10	33.50	23.39	17.10	13.75	11.68	10.21	8.94	7.79	7.10	8.86
30	42.28	28.78	20.12	14.85	11.95	10.34	9.17	8.08	7.04	6.28	5.99
35	40.37	26.82	18.43	13.40	10.65	9.29	8.37	7.48	6.58	5.80	3.84
40	39.28	26.65	17.89	12.64	9.85	8.56	7.82	7.13	6.38	5.65	2.40
45	38.59	26.98	18.04	12.55	9.58	8.20	7.49	6.94	6.37	5.79	1.81
50	37.83	27.06	18.60	13.10	9.90	8.24	7.35	6.83	6.45	6.13	2.50
55	36.87	26.97	19.58	14.29	10.83	8.70	7.43	6.77	6.54	6.59	5.30
60	35.79	27.22	21.09	16.11	12.36	9.58	7.69	6.74	6.57	7.11	10.67
65	34.67	28.18	23.21	18.55	14.47	0.00	0.00	0.00	0.00	0.00	0.00

Females

Years of Service

Age	0	1	2	3	4	5	6	7	8	9	10+
25	40.50	29.30	21.62	17.88	16.08	14.90	13.60	11.81	9.39	6.66	7.55
30	36.06	25.45	18.97	15.08	12.93	11.68	10.69	9.58	8.12	6.36	5.47
35	33.25	23.24	16.75	12.79	10.57	9.37	8.62	7.94	7.11	6.03	3.87
40	31.79	22.00	15.10	11.14	9.05	7.99	7.34	6.86	6.35	5.66	2.76
45	31.29	21.37	14.28	10.40	8.46	7.48	6.83	6.32	5.87	5.32	2.20
50	31.49	21.39	14.49	10.65	8.71	7.71	6.96	6.32	5.74	5.18	2.27
55	32.32	22.32	15.72	11.79	9.67	8.47	7.57	6.76	6.02	5.39	3.10
60	33.76	24.34	17.95	13.71	11.24	9.62	8.51	7.54	6.72	6.07	4.95
65	35.82	27.54	21.14	16.33	13.36	0.00	0.00	0.00	0.00	0.00	0.00

Rates are not applied after the member is eligible for reduced or unreduced retirement benefits.

C. Other Assumptions

1. Age difference: 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. All beneficiaries are assumed to be spouses.
2. Percent electing annuity on death: It is assumed that beneficiaries of deceased members will elect to receive the refund of contributions with interest, unless the member is eligible for early or normal retirement, in which case the beneficiary will elect to receive the survivor annuity.
3. Percent electing deferred termination benefit: All vested active members terminating prior to eligibility for a retirement benefit are assumed to elect the more valuable of (i) an immediate refund, or (ii) a deferred annuity commencing when the member is eligible for an unreduced retirement benefit.
4. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt when eligible for an unreduced benefit (or attained age if later).
5. Administrative expenses: The assumed investment return rate is intended to be the net rate of return after payment of all investment and administrative expenses.

V. Participant Data

Participant data was supplied on magnetic tape for (i) active members, (ii) inactive members, who are entitled to either a future deferred benefit or a refund of their employee contributions and the accumulated interest, and (iii) members and beneficiaries receiving benefits.

The data for active and inactive, non-retired members included birth date, sex, years of service, salary, and accumulated employee contributions (without interest). For retired members and beneficiaries, the data included date of birth, sex, beneficiary or joint annuitant date of birth (where applicable), current monthly benefit, date of retirement, and a form of payment code.

Salary supplied for the current year was the total earnings for the year preceding the valuation date.