Report of the Committee to Study the Maine State Retirement System

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Consulting Actuary

William M. Mercer, Incorporated
Boston, Massachusetts

Staff

Lisa Copenhaver
Office of Policy & Legal Analysis

Shirrin Blaisdell
Office of Fiscal & Program Review

Members

Robert A. G. Monks, Chair
Peter M. Leslie, Vice-Chair
Gregg H. Ginn
Robert F. Bourgault

COMMITTEE TO STUDY THE RETIREMENT SYSTEM

(P.L. 1993, Chapter 410, sec. SSS-1)

MEMBERSHIP

Appointed by the Governor

Robert A.G. Monks
45 Exchange Street
Suite 400
Portland, Maine 04101
775-2354

Gregg H. Ginn
One Portland Square
P.O. Box 586, DTS
Portland, Maine 04112
774-4000

Appointed by the President

Robert F. Bourgault
9 Libby Drive
Biddeford, Maine 04005
284-5804

Appointed by the Speaker

Peter M. Leslie
15 Cragmoor
Cape Elizabeth, Maine 04107
799-5100

Table of Contents

Introduction

As of June 30, 1993, legislation was enacted establishing the Committee to study the Retirement System. Its stated duties and responsibilities were set forth as follows:

> "The Committee shall review all aspects of the Maine State Retirement System to ensure its present and future fiscal soundness, including, but not limited to:
>
> A. The underlying causes of the unfunded liability including underfunding, benefit modifications and experience losses and methods of reducing the number of years of amortization of the unfunded liability;
>
> B. The equity of the current benefit structure, in comparison to other pension systems offered in Maine and other states, including a comparison of benefits available to different classes of employees and the effectiveness of the current benefit structure in meeting the statutory goals of recruiting and retaining qualified employees and assisting members to make provision for their retirement years and a comparison of the benefit structure to comparable public and private sector retirement plans;
>
> C. The affordability of the current benefit structure and the State's ability to meet its short-term and long-term benefit obligations. Review must address the system's current funding schedule and actuarial assumptions;
>
> D. The Legislature's obligation and rights concerning benefit modifications in view of the decision of the Maine Supreme Judicial Court in *Spiller v. State,* Decision No. 6551, Law Docket No. KEN-93-191; and
>
> E. Other aspects of the laws, operations and procedures of the system that relate to its benefit structure, financial stability and fiscal soundness that the Committee considers necessary....
>
> In comparing the Maine State Retirement System with other public and private pension systems, the Committee shall make recommendations relating to the need for the Maine State Retirement System to make appropriate changes if advisable."

In order to fulfill its duties and responsibilities, the Committee contracted with the independent actuarial firm of William M. Mercer, Inc. (Mercer) for assistance in reviewing the system. Through a series of working meetings, Mercer provided information and analysis which was reviewed and discussed with the Committee.

This report constitutes the findings and recommendations of the Committee with regard to the design and funding of the Maine State Retirement System. There are three major parts to this report: a review of the current benefit structure, a review of the financial stability of the current system, and this Committee's assessment of the need for change. The final section of the report contains the recommendations of the Committee. For those who are interested in obtaining more background information on the issues before the Committee, a complete set of the materials received by the Committee is on file at the Law and Legislative Reference Library in the State House.

Findings and Recommendations

The Committee to Study the Maine State Retirement System makes the following findings:

- The current benefit structure contains four major inequities:
  1. A typical employee hired at age 30 must work for the State for nearly 20 years before the value of the benefit earned exceeds the value of the employee's own contributions plus interest. On the other hand, an employee hired at age 55 and working only 7 years receives a significant employer-provided benefit.
  2. Employees hired before April of 1986 are not required to contribute to Medicare. Employees hired on or after April 1, 1986 must contribute 1.45% to Medicare in addition to the 7.65% contribution to the Maine State Retirement System, but receive no additional benefit from the System.
  3. Various inequities are created by legislation designed to enhance the benefits for an individual employee or group of employees in particular circumstances.
  4. Legislation enacted in 1991 and 1993 results in substantial inequities between two classes of employees depending on whether the employee had 10 years of service as of July 1, 1993. The primary effect of this inequity is a later normal retirement age and diminished early retirement benefits for persons on the wrong side of this 10-year "cliff".
- The inequities of the benefit structure limit the plan's effectiveness in meeting the statutory goals of recruiting and retaining qualified employees. The benefit structure, particularly for persons on the right side of the 10-year cliff, is very attractive for an employee intending to work a full career with the State and for an older worker. It is unattractive to other employees because the benefit is not portable and for several years consists of only the employee's contribution plus interest.
- The effectiveness of the system has been seriously eroded by reducing benefits in order to balance the budget because such actions have demoralized the members.
- It is difficult to make generalizations about the benefit structure compared to those of other states or private sector employers because of the complexities of defined benefit plans. However, one critical difference is that, unlike all private employers and unlike 43 other states, Maine does not offer Social Security as part of its retirement package.

- Social Security has the following advantages: complete portability, 100% inflation protection, a tilt in favor of lower-income employees, and tax-free status for most people.
- A measure of the adequacy of any retirement benefit is whether a retiring employee with a reasonable amount of personal savings will suffer a reduction in standard of living upon retirement. An appropriate target is to have no reduction in standard of living for an employee retiring at age 65 with 35 years of service.
- It is the view of this Committee that, as a matter of policy, to the extent that the *Spiller* decision permits the Legislature to retroactively reduce the benefits of employees after those benefits have been earned, the decision goes too far.
- Based on the economic projections provided by the State Planning Office, the current benefit structure and the current level of funding (16.49%) appears to be affordable over the long term, provided benefits are not added and the underlying economic projections are met.
- When adjusted for inflation, the size of the unfunded accrued benefit liability remained relatively stable over the past 15 years, while the assets of the fund have increased from 38% of the total accrued liability in 1987 to 61% in 1993.
- The underlying causes of the unfunded liability since 1972 have been twofold:
  1. Underestimating the cost of future benefits while overestimating future funding, and
  2. Failing to appropriate the necessary funds.
- The risk-adjusted investment performance of the fund has been superior during the past five years when measured against other public pension funds (in the top 25th percentile).
- There are several valid ways of measuring the economic health of a retirement system. In addition to the amortization of unfunded actuarial liability or the unfunded accrued benefit obligation, a long-term commitment by the State to consistently maintain funding as a fixed percentage of payroll at a level that is adequate to support the plan will result in a financially sound program.
- The Maine State Retirement System's service to members has been inferior.

Recommendations

Based on these findings, the Committee makes the following recommendations:

1. Participation in the Maine State Retirement System should be voluntary for new hires and for present participants who had less than 10 years of service on July 1, 1993. An employee who opts out of the Maine State Retirement System would be required by federal law to be covered by Social Security.
2. A defined contribution plan providing for employer matching of employee contributions up to 3% of payroll should be adopted to supplement the Social Security coverage provided to employees opting out of the Maine State Retirement System.
3. The State of Maine should establish a long-range funding policy, based on current projections of future state employment patterns and economic trends, setting the funding level at a fixed percentage of pay (18% - 19%), a figure calculated to fund 100% of accrued benefits by the end of 30 years. This policy will result in a steady improvement in the ratio of the System's assets to annual benefit payments from 10:1 currently to 15:1 in 30 years.
4. The inequities in the current benefit structure should be eliminated to improve the System's effectiveness in meeting the statutory goals of recruiting and retaining qualified employees.
5. A transition committee should be established to develop an implementation plan for recommendations 1, 2 and 4, including any necessary legislation and timetables for educating employees on their options. The committee should consist of seven members to be appointed by the Governor and confirmed by the Legislature. Three of the members are to be chosen from one list of nominees submitted to the Governor by employee unions, three members are to be employer representatives, and the final member is to represent the perspective of the public.

Current Benefit Structure

This part of the report addresses the Committee's statutory duty to review issues concerning the equity and effectiveness of the current benefit structure.

Maine State Retirement System

The State of Maine maintains a broad-based, comprehensive retirement program covering State employees, teachers and employees of participating political subdivisions. The program, called the Maine State Retirement System, covers approximately 42,000 active participants and 17,500 retirees. The System provides retirement benefits, as well as survivor benefits and disability benefits for participating employees. With respect to state employees and teachers, the System has two basic benefit structures. One structure applies to employees with more than ten years of service prior to July 1, 1993 and the other, a reduced benefit structure, applies to all other employees. The key features of the System include the following:

- Retirement income for life for retirees and beneficiaries
- Employee contributions required equal to 7.65% of compensation for all employees (made on a before-tax basis) and an additional 1.45% for Medicare (made on an after-tax basis) for those hired after March of 1986
- A retirement benefit equal to 2% of average three-year final earnings times years of service (no maximum number of years)
- Retirement after 25 years of service with no minimum age; age 60 or 62 with ten years of service; or age 60 or 62 with one year of service immediately prior to retirement
- Full retirement benefits at age 60 for those with at least ten years of service on July 1, 1993. These employees are eligible for retirement prior to age 60 with a reduction of $2^1/_8$% per year prior to age 60 if they have 25 years of service at retirement.
- Full retirement benefits at age 62 for those with less than ten years of service on July 1, 1993. These employees are eligible for retirement prior to age 62 with a reduction of 6% per year prior to age 62 if they have 25 years of service at retirement.
- Annual cost-of-living adjustment (lesser of 4% or the Consumer Price Index) for retirement benefits of those who had at least ten years of service on July 1, 1993. Cost-of-living adjustments will not be made before age 62 for those members who did not have ten years of service on July 1, 1993, irrespective of their age at retirement.

- Survivor benefits equal to the member's accrued retirement benefit.
- Disability benefits equal to either 66⅔% or 59% of base compensation immediately prior to disability for members who become disabled while active employees.
- Employment with the State of Maine not covered employment under Social Security for members of the system.

Benefit Adequacy

A general objective of a retirement plan is to provide career employees with sufficient income in retirement to maintain their pre-retirement living standard. This objective is met by taking into account all sources of income including that provided by an employer-sponsored plan, as well as amounts generated from personal savings. Various models have been developed to establish benefit adequacy goals. Exhibits 1 and 2 set forth two such examples based on individuals who do or do not participate in Social Security. This benefit adequacy model is based on the following concepts:

- After retirement, less than 100% of pre-retirement gross income is necessary to maintain the same pre-retirement standard of living.
- The determination of the level of pre-retirement income needed for retirement takes into account several variables:
    - — employee contributions toward retirement
    - — personal savings (including home equity)
    - — tax rates
    - — work-related expenses
    - — coverage under Social Security

- For employees not in Social Security, 70% - 80% of pre-retirement gross income is generally required to maintain their pre-retirement living standard.

Exhibit 1: RETIREMENT INCOME REPLACEMENT RATIO: WITHOUT SOCIAL SECURITY

I. Pre-retirement take-home pay

A. Gross earnings	$15,000	$25,000	$35,000	$50,000	$75,000
B. Medicare tax	218	363	508	725	1,088
C. Employee contribution	1,148	1,913	2,678	3,825	5,738
D. Income taxes	1,326	3,129	5,528	9,819	17,283
E. Savings	150	750	1,750	4,000	9,750
F. Work-related expenses	1,000	1,000	1,000	1,000	1,000
G. Take-home pay	$11,158	$17,845	$23,536	$30,631	$40,141

II. Post-retirement income

A. Social Security	$ 0	$ 0	$ 0	$ 0	$ 0
B. Other income	12,020	20,228	27,421	38,010	52,941
C. Total gross income	12,020	20,228	27,421	38,010	52,941
D. Taxable income	12,020	20,228	27,421	38,010	52,941
E. Income taxes	862	2,383	3,885	7,379	12,800
F. Net income	$11,158	$17,845	$23,536	$30,631	$40,141

III. Replacement ratio

A. II.C. ÷ I.A.	80.13%	80.91%	78.35%	76.02%	70.59%
B. Social Security	0.00%	0.00%	0.00%	0.00%	0.00%
C. Other sources	80.13%	80.91%	78.35%	76.02%	70.59%

See Appendix B for the economic assumptions used in developing this Exhibit.

Most employees with full Social Security benefits need 65%- 75% of pre-retirement gross pay for full income replacement because Social Security benefits are tax-free for most retirees.

Exhibit 2: RETIREMENT INCOME REPLACEMENT RATIO: WITH SOCIAL SECURITY

I. Pre-retirement take-home pay

A. Gross earnings	$15,000	$25,000	$35,000	$50,000	$75,000
B. FICA tax	1,148	1,913	2,678	3,825	4,659
C. Employee contribution	0	0	0	0	0
D. Income taxes	1,539	3,550	6,466	11,215	19,550
E. Savings	150	750	1,750	4,000	9,750
F. Work-related expenses	1,000	1,000	1,000	1,000	1,000
G. Take-home pay	$11,163	$17,787	$23,106	$29,960	$40,041

II. Post-retirement income

A. Social Security	$7,248	$10,223	$12,288	$13,248	$13,536
B. Other income	3,915	7,690	11,610	18,821	35,513
C. Total gross income	11,163	17,913	23,898	32,069	49,049
D. Taxable income	3,915	7,690	11,610	18,821	42,552
E. Income taxes	0	126	792	2,109	9,008
F. Net income	$11,163	$17,787	$23,106	$29,960	$40,041

III. Replacement ratio

A. II.C. ÷ I.A.	74.42%	71.65%	68.28%	64.14%	65.40%
B. Social Security	48.32%	40.89%	35.11%	26.50%	18.05%
C. Other sources	26.10%	30.76%	33.17%	37.64%	47.35%

See Appendix B for the economic assumptions used in developing this Exhibit.

An appropriate target for benefit adequacy is to have no reduction in the pre-retirement standard of living for an employee retiring at age 65 with 35 years of service and a reasonable amount of personal savings.

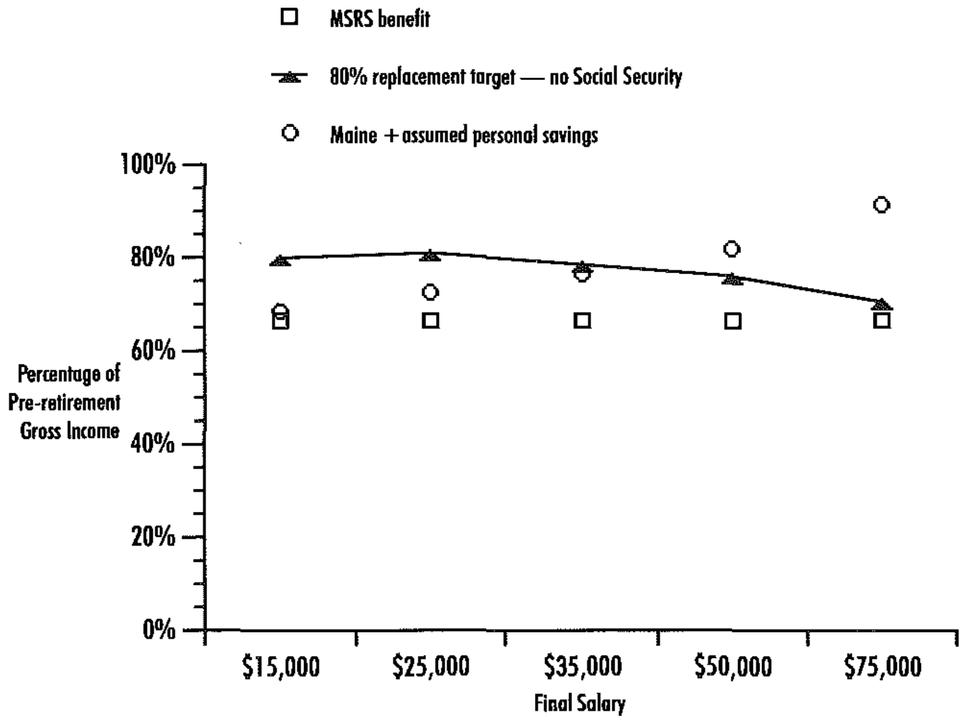
At age 65 with 35 years of service, the Maine State Retirement System falls short of this benefit adequacy goal at lower pay levels because lower-paid employees do not have the disposable income needed to enable them to generate significant pre-retirement savings. On the other hand, the Maine State Retirement System will provide adequate retirement income at higher income levels, particularly when an employee combines the plan with an active personal savings plan during, for example, the 15 years prior to retirement.

Note that if a lower-paid employee is able to save 5% of pay (over and above his or her contribution to the Maine State Retirement System), the income adequacy target can be met.

Exhibit 3: MAINE STATE RETIREMENT SYSTEM AND BENEFIT ADEQUACY (AGE 65)

Maine vs. 80% Replacement

35 years of service at retirement
Age 65 and hired on or after 7/1/83

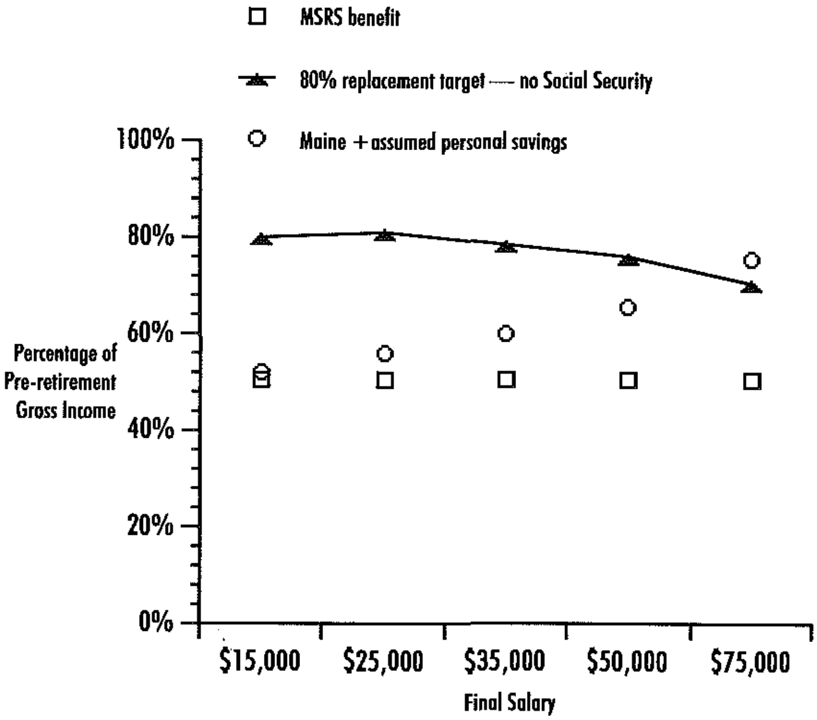


Today, Maine State employees generally retire prior to age 65. At age 60, with 30 years of service and assuming a savings rate reasonable for that income level for the last fifteen years prior to retirement, the members of the Maine System are further from the replacement target.

Exhibit 4: MAINE STATE RETIREMENT SYSTEM AND BENEFIT ADEQUACY (AGE 60)

Maine vs. 80% Replacement

30 years of service at retirement
Age 60 and hired on or after 7/1/83

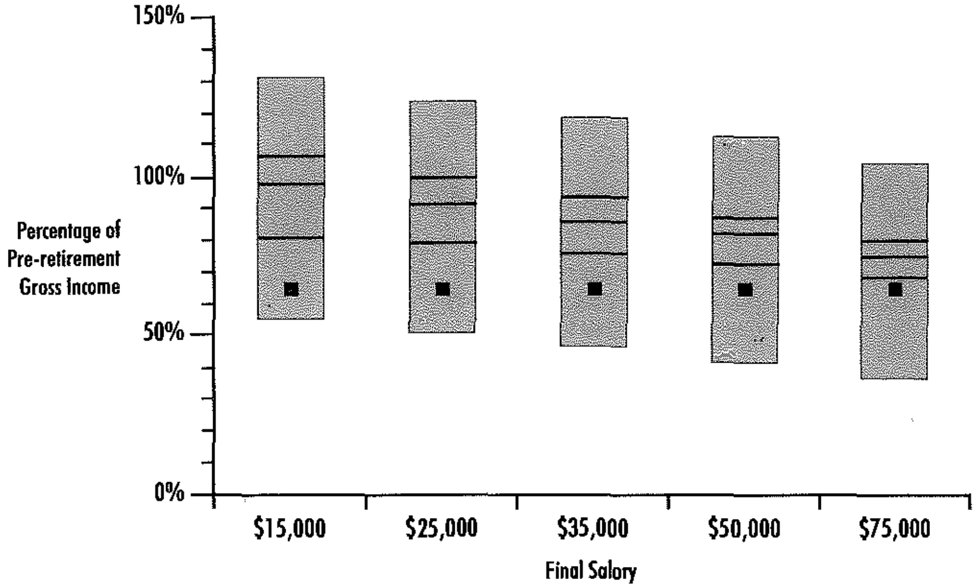


The most recently available data indicates that 43 of the 50 States maintain defined benefit retirement programs and also participate in Social Security. In addition, most States (including Maine) offer a defined contribution plan as a supplementary arrangement, although these plans usually do not include an employer contribution or match. The Maine System is in the bottom quartile of all states when comparing benefits at age 65 with 35 years of service.

Exhibit 5: MAINE STATE RETIREMENT SYSTEM COMPARED WITH OTHER STATES

Maine vs. Other States

35 years of service at retirement at age 65 and hired on or after 7/1/83
State plans + Social Security
Maine compared to minimum, 25th, 50th, 75th percentiles, maximum



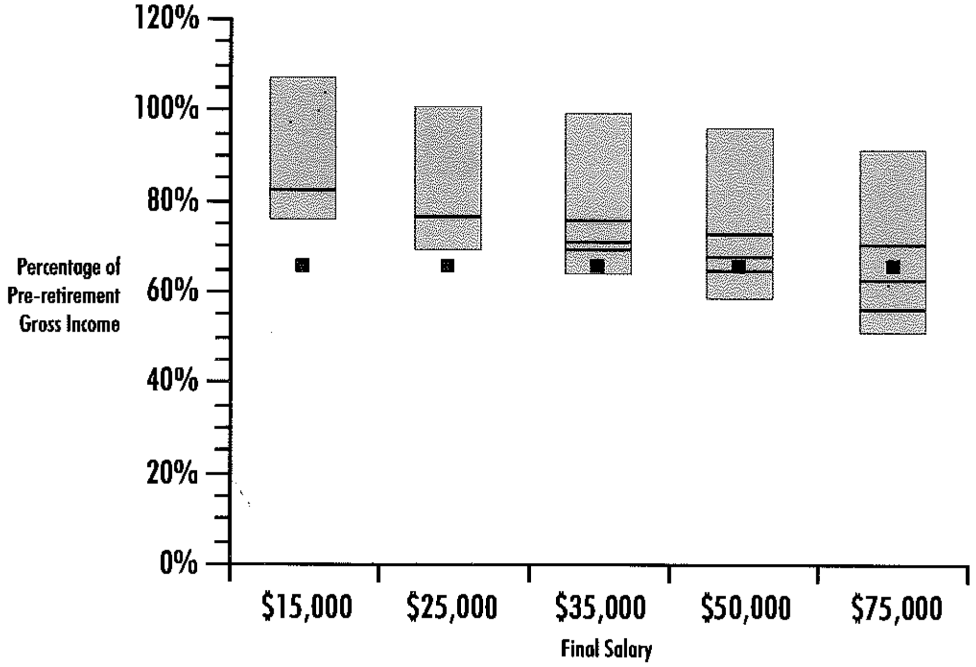
Note: This comparative data reflects information compiled by this Committee's independent actuary, William M. Mercer, Inc.

Many large private sector Maine employers offer both a defined benefit plan and a defined contribution plan. All of these employers participate in Social Security.

The initial level of retirement income provided by the Maine System compares unfavorably with these Maine employers, particularly at lower pay levels. Because of post-retirement cost-of-living increases, the benefits of the Maine System become more valuable in the later years of retirement as shown on page 15.

Exhibit 6: MAINE STATE RETIREMENT SYSTEM COMPARED WITH LARGE MAINE EMPLOYERS

35 years of service at retirement at age 65 and hired on or after 7/1/83
Private plans + Social Security
Immediately after retirement



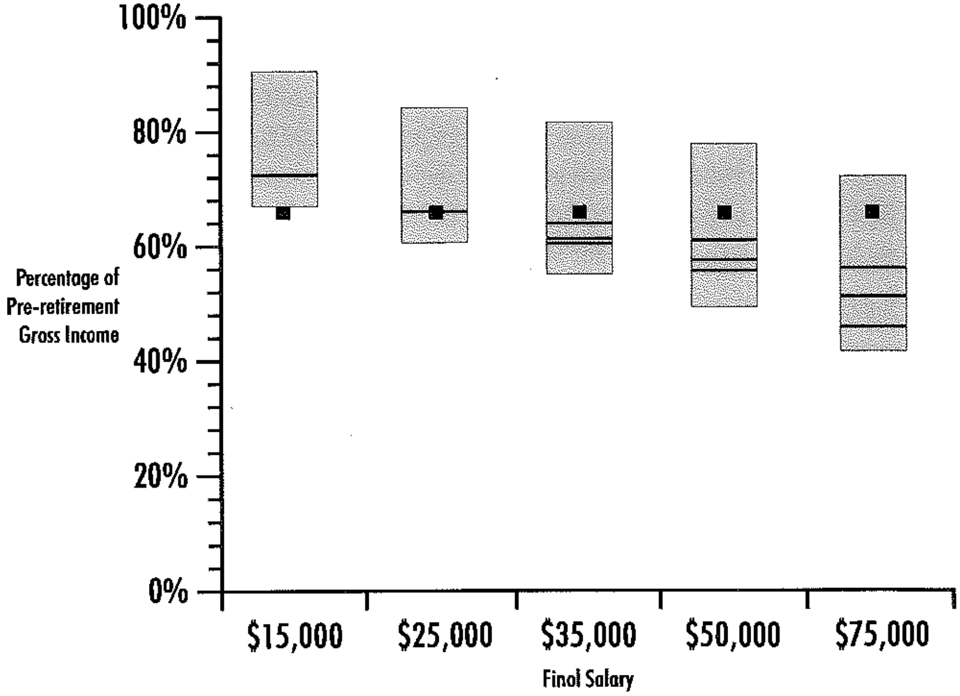
Note: This comparative data reflects information compiled by this Committee's independent actuary, William M. Mercer, Inc.

Maine State Retirement System benefits compare favorably to other Maine employers eight years after retirement based on retirement with 35 years of service at age 65.

This decrease in the gap between the System and large Maine employers is due to the automatic cost-of-living adjustment present in the Maine System but absent from the plans of private employers. Some private employers may provide ad hoc adjustments to retiree benefits from time to time. The portion of an employee's retirement income that is provided by Social Security is subject to cost-of-living adjustment.

Exhibit 7: MAINE STATE RETIREMENT SYSTEM COMPARED WITH LARGE MAINE EMPLOYERS

35 years of service at retirement at age 65 and hired on or after 7/1/83
Private plans + Social Security
8 years after retirement



Note: This exhibit assumes an annual inflation rate of 4%.

Conclusions — Adequacy

- The Maine State Retirement System meets the target of maintaining the pre-retirement standard of living of a full career employee with 35 years of service and a reasonable level of personal savings. The Maine State Retirement System does *not* do an adequate job in providing income replacement to long-service, career employees earning below $35,000.
- Benefits for lower-paid employees who were not vested as of July 1, 1993 are significantly below an adequate level if retirement is before age 62.
- Based on retirement at age 65 after 35 years of service, the Maine State Retirement System provides benefits below those of other states and large private sector employers in Maine. However, higher-paid employees in the Maine State Retirement System are treated relatively better than comparable employees in the private sector, particularly after COLA increases are considered.

Social Security

- Social Security is the national system which provides retirement, disability and survivor benefits to workers, spouses and their eligible children. The benefits earned under Social Security are portable in that credit is given under the system for any covered employment with any employer or even for self-employment.
- Social Security benefits are paid for by both the employee and the employer. The contribution required in 1994 by both the employee and the employer for old-age, survivor and disability benefits is 6.2% of compensation up to $60,600. This dollar amount increases annually. The cost of coverage for post-retirement medical benefits under Medicare is 1.45% of total compensation.
- Benefit eligibility is based on credits earned through the payment of employment taxes by employers and employees. Testimony has been received indicating that substantial numbers of participants in the Maine State Retirement System have earned Social Security benefits either through covered employment while not a Maine State employee or through part-time employment in covered service while also working as a public employee. These earned benefits may include survivor, disability and dependent benefits, as well as retirement income coverage.
- Social Security benefits are calculated based on career earnings covered by Social Security.

- Social Security benefits replace a much greater percentage of earnings for lower-paid employees than for higher-paid employees.
- Social Security benefits are tax-free for most retirees.
- Employees covered by a minimum level retirement plan provided by a State or local government entity need not be covered by Social Security. Coverage is mandatory for employees not covered by such a government plan.
- A state may decide to join the Social Security system and coordinate (or integrate) its retirement benefits with those provided by the national program. This can be accomplished by formal agreement between the state and the Social Security Administration pursuant to Section 218 of the Social Security Act. The State of Maine entered into such an agreement on December 3, 1951 to enable certain political subdivisions to elect to provide Social Security coverage. A modification to this agreement would enable the State of Maine to provide Social Security coverage for members of the Maine State Retirement System.
- A Section 218 agreement can provide for retroactive Social Security coverage for a period of up to five years, provided that payroll taxes are paid for the retroactive period. The Section 218 Agreement must extend Social Security coverage to all employees within a reasonable, job-related classification. The Agreement will be effective only if approved through referendum vote by a majority of covered employees.
- As an alternative method of entering Social Security, individual employees who have the ability to waive participation in a state retirement system will be covered by Social Security.
- By amendment to the Maine retirement statutes, individual State employees could be permitted to waive participation in the plan maintained by the State of Maine. Upon such waiver, these employees would automatically be included in the Social Security system. This waiver process would provide entry into the system on an individual basis, even if the State also sponsored a supplemental plan for those opting out of the Maine State Retirement System, so long as the supplemental plan did not provide benefits equal to or exceeding $7^1/_2$% of base compensation.

Social Security Examples

- Full Social Security benefits are earned after accumulation of 40 credits and 35 years of covered earnings. One credit is received for each $590.00 of earnings. A worker may receive a maximum of 4 credits per year.
- For 1993, the benefit formula under Social Security is a three-tier formula equal to 90% of the first $356 of average indexed monthly earnings, 32% of the next $1,789 and 15% of the remaining indexed monthly earnings. The intent of the formula is to provide lower-paid employees with a higher percentage of salary as a retirement benefit.
- A spouse is entitled to receive a retirement benefit equal to one-half of the worker's retirement benefit.
- The spouse benefit is reduced if the spouse is also receiving a state or local government pension for government service not covered by Social Security.

Exhibit 8: SAMPLE SOCIAL SECURITY RETIREMENT BENEFIT CALCULATION

Retirement Benefits
Employment covered by Social Security from ages 30 to 65

Monthly earnings*	= $ 2,000
Total indexed earnings	
35 years x $2,000	= $70,000
Average indexed monthly earnings (AIME)	
$70,000 divided by 35	= $ 2,000
Primary Insurance Amount (PIA) calculation	
$356 x 90% + ($2,000 - 356)$1644 x 32%	= $846 per month
If there was a nonworking spouse age 65:	
Spouse benefit	= $423** per month

* or equivalent in prior years

**If the spouse has a $300 per month government pension: Spouse benefit would be reduced to $223 per month

Under the Social Security Act a special provision, called the Windfall Elimination Provision, reduces the Social Security benefit for workers who have substantial employment with a government agency not participating in Social Security. This reduction is designed to prevent workers (such as State employees) from receiving full Social Security coverage due to low levels of covered earnings (e.g., through part-time or seasonal employment) while nevertheless receiving substantial pensions from a State system.

To address this problem, there is a reduction in the 90% benefit tier described above for people with between 20 and 30 years of covered employment. For those with 20 years of covered employment, the 90% benefit is reduced to 40%. The table below indicates the graduated benefit amount:

Years of Social Security Earnings	First Tier Factor
30 or more	90%
29	85%
28	80%
27	75%
26	70%
25	65%
24	60%
23	55%
22	50%
21	45%
20 or less	40%

Exhibit 9: EXAMPLE OF WINDFALL ELIMINATION PROVISION (WEP)
Employment covered by Social Security from ages 45 to 65

Monthly earnings*	= $ 2,000
Total indexed earnings	
20 years x $2,000	= $40,000
Average indexed monthly earnings (AIME)	
$40,000 divided by 35	= $ 1,143
Primary Insurance Amount (PIA) calculation	
$356 x 40% + ($1,143 - 356)$787 x 32%	= $394 per month

* or equivalent in prior years

Social Security provides that survivor benefits are payable to a spouse and eligible children if the worker is either currently insured or fully insured. To be currently insured, the worker must have 6 credits within the three years prior to death. To be fully insured, the worker must have one credit per year after age 21 until death. Survivor benefits are payable to a spouse younger than age 60 only if there are dependent children. Survivor benefits are payable to a spouse at age 60 only and to dependent children. There are maximum family benefits which can be paid under the worker's survivor benefits.

Exhibit 10: EXAMPLE OF SOCIAL SECURITY SURVIVOR BENEFITS

Employment covered by Social Security from ages 30 to 40
Death at age 40

Monthly earnings*	= $ 2,000
Total indexed earnings	
10 years x $2,000	= $20,000
Average indexed monthly earnings (AIME)	
$20,000 divided by 10	= $ 2,000
Primary Insurance Amount (PIA) calculation	
$356 x 90% + ($2,000 - 356) $1,644 x 32%	= $846 per month

If currently insured, if spouse caring for child: spouse receives 75% of PIA
If currently insured, each child receives 75% of PIA
Maximum family benefit is approximately 175% of PIA
If fully insured and no child, spouse will receive 71.5% of PIA when spouse reaches age 60

* or equivalent in prior years

Disability benefits are also provided under Social Security for covered workers who experience a complete and total disability at any age. The number of credits required vary with the age at which a worker becomes disabled. A worker disabled before age 24 needs six credits in the three year period ending with the disability. Age 24 to 31 requires credits equal to half the years between age 21 and the disability. Age 31 and older requires between 20 and 40 credits with the additional requirement of 20 credits in the last ten years before the disability. Family members may receive payments based on the worker's disability. There is a 150% maximum family benefit.

Exhibit 11: EXAMPLE OF SOCIAL SECURITY DISABILITY BENEFITS

Employment covered by Social Security from age 30 to 40
Disabled at age 40

Monthly earnings*	= $2,000
Total indexed earnings	
10 years x $2,000	= $20,000
Average indexed monthly earnings (AIME)	
$20,000 divided by 10	= $2,000
Primary Insurance Amount (PIA) calculation	
$356 x 90% + ($2,000 - 356)$1644 x 32%	= $846 per month

If family benefits are payable, maximum 150% of PIA total benefit.

* or equivalent in prior years

Gaps in Social Security Coverage

- Entering and exiting the Maine System causes gaps in Social Security coverage.
- These gaps may or may not have a significant effect on retirement, survivor and disability benefits.

Examples of the impact of gap periods:

- Employees who enter the Maine System from coverage under Social Security will lose their currently insured status for survivor benefits in approximately three years. This can result in a significant loss of survivor benefits.
- Employees exiting the Maine System and entering Social Security can become currently insured for survivor benefits in as little time as six to fifteen months. However, the amount of the survivor benefits will be negligible due to the lack of covered earnings.

- It may take up to ten years to qualify for Social Security disability benefits after exiting the Maine System. There is no continued coverage under the Maine State Retirement System for that time period.

See Appendix C for a more complete description of Social Security benefits.

Conclusions — Social Security

- The Social Security system provides a comprehensive program of benefits throughout the United States. Social Security has the following advantages: complete portability; 100% inflation protection; a tilt in favor of lower-income employees; and tax-free status for most people.
- The Social Security benefits actually received by employees who retire under the Maine State Retirement System will depend on what covered employment they may have achieved through part-time, seasonal or other employment with employers participating in Social Security.
- Provisions of the Social Security Act and applicable employment tax rules permit the State of Maine to enter the Social Security system as a whole. Alternatively, individual employee choice can be provided to effectively allow employees to choose coverage under the Social Security system.
- Social Security retirement benefits are based on retirement ages between 65 or 67, depending on the employee's date of birth. The Maine State Retirement System benefit is based on a retirement age of 60 or 62.
- The gaps in Social Security coverage caused by entering and exiting the Maine System may have a significant effect on the level of disability and survivor benefits available under Social Security.

Defining Equity — the Value-based Approach

Since pension benefits can be viewed as deferred compensation, one approach to defining equity is to measure and compare the value of employer-provided pension benefits expressed as a percentage of cash compensation in various situations. The value of the employer-provided benefit reflects the value of the total benefit that exceeds the portion of the benefit paid for by the employee's own contribution.

For example, a defined contribution plan with employer contributions of 5% of compensation would have a value of 5% in all situations, since it is similar in value to additional compensation of 5%. Such plans would, therefore, be perfectly equitable under the value-based approach.

The value of a defined benefit plan would vary depending upon the age of entry into the plan and the age of retirement. The table on the following page shows the value of the Maine State Retirement System for various ages of entry and retirement. For example, the value of employer-provided benefits for an employee who enters the Maine State Retirement System at age 35 and retires at age 60 is 11% of each year's pay. On the other hand, an employee entering the System at age 25 and leaving at age 50 would receive no employer-provided benefit.

Exhibit 12: EMPLOYER-PROVIDED VALUE — ANNUAL PERCENTAGE OF PAY

Age at Termination

Age at Hire

0	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	0
25		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	2	3	4	5	6	7	8	9	10	11	10	9	8	25
26			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	2	3	4	5	6	7	8	9	10	11	10	9	9	26
27				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	4	5	6	7	8	9	10	11	10	10	9	27
28					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	3	4	5	6	7	8	9	10	11	11	10	9	28
29						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	12	11	10	9	29
30							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	4	5	6	7	9	10	11	12	11	10	9	30
31								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	5	7	8	9	10	11	12	11	10	9	31
32									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	10	10	32
33										0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	11	10	33
34											0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	10	11	13	12	11	10	34
35												0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	11	12	13	12	11	10	35
36													0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	5	5	6	7	8	9	11	12	13	12	11	10	36
37														0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	6	6	7	8	9	11	12	13	12	11	11	37
38															0	0	0	0	0	0	0	0	0	0	1	2	3	3	4	5	6	7	7	8	10	11	12	13	13	12	11	38
39																0	0	0	0	0	0	0	0	0	0	2	3	3	4	5	6	7	8	9	10	11	12	14	13	12	11	39
40																	0	0	0	0	0	0	0	0	0	0	3	4	4	5	6	7	8	9	10	11	13	14	13	12	11	40
41																		0	0	0	0	0	0	0	0	0	0	4	4	5	6	7	8	9	10	12	13	14	13	12	11	41
42																			0	0	0	0	0	0	0	0	0	0	5	5	6	7	8	9	10	12	13	14	13	12	12	42
43																				0	0	0	0	0	0	0	0	0	0	5	6	7	8	9	10	12	13	14	14	13	12	43
44																					0	0	0	0	0	0	0	0	0	0	6	7	8	9	11	12	13	15	14	13	12	44
45																						0	0	0	0	0	0	0	0	0	0	8	9	10	11	12	14	15	14	13	12	45
46																							0	0	0	0	0	0	0	0	0	0	9	10	11	13	14	15	14	13	12	46
47																								0	0	0	0	0	0	0	0	0	0	10	11	13	14	15	14	13	12	47
48																									0	0	0	0	0	0	0	0	0	0	11	13	14	16	15	14	13	48
49																										0	0	0	0	0	0	0	0	0	0	13	15	16	15	14	13	49
50																											0	0	0	0	0	0	0	0	0	0	15	16	15	14	13	50
51																												0	0	0	0	0	0	0	0	0	0	16	15	14	13	51
52																													0	0	0	0	0	0	0	0	0	17	16	15	14	52
53																														0	0	0	0	0	0	0	0	17	16	15	14	53
54																															0	0	0	0	0	0	0	17	16	15	14	54
55																																0	0	0	0	0	0	17	16	15	14	55
56																																	0	0	0	0	0	17	16	15	14	56
57																																		0	0	0	0	18	17	16	15	57
58																																			0	0	0	18	17	16	15	58
59																																				0	0	18	17	16	15	59
60																																					0	18	17	16	15	60
61																																						19	18	17	15	61
62																																							18	17	16	62
63																																								17	16	63
64																																									16	64
65																																										65

Age at Hire

Note: employees not vested on July 1, 1993

Since the concept of equity is subjective, the value-based approach is not the only way to measure equity. An equitable plan under the value-based approach could be considered inequitable under another approach, and vice versa.

For example, a defined benefit plan which provides 1% of final average pay payable at age 65 for each year of service would be equitable on a benefit-based approach due to a constant benefit formula. On a value-based approach, however, it would be inequitable because benefits earned at higher ages are more valuable.

Nevertheless, significant inequities would presumably be discerned under all approaches.

Often the desire for equity will be balanced with other objectives which the plan sponsor considers desirable. For example:

- Rewarding long-service employees
- Attracting new employees
- Favoring early retirement
- Providing incentives for personal savings toward retirement

In examining the Maine State Retirement System, we have found some of the equities and inequities typical of most defined benefit plans. However, the inequities are significantly exacerbated by the following factors:

- The contributory nature of the System (including the high level of employee contributions relative to benefits for employees who do not pursue a full career with the State, and the fact that the level of contributions is the same for all employees without regard to their situations, such as age at hire)
- Employees hired after March of 1986 are required to contribute 1.45% for Medicare in addition to 7.65% to the System, but receive no additional benefit from the Maine State Retirement System
- The nominal service requirement (only one year of service immediately prior to retiring) for retirement at age 60, or 62 for those hired on or after July 1, 1993
- Significantly reduced early retirement and later normal retirement age for employees hired on or after July 1, 1983 who nevertheless are required to contribute at the same rate

The highlighted portion of the following Exhibit shows that employees leaving prior to age 50 will receive no or negligible employer-provided benefits.

Exhibit 13: EMPLOYER-PROVIDED VALUE — ANNUAL PERCENTAGE OF PAY

Age at Termination

Age at Hire

0	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	0
25		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	2	3	4	5	6	7	8	9	10	11	10	9	8	25
26			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	2	3	4	5	6	7	8	9	10	11	10	9	9	26
27				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	4	5	6	7	8	9	10	11	10	10	9	27
28					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	3	4	5	6	7	8	9	10	11	11	10	9	28
29						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	12	11	10	9	29
30							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	4	5	6	7	9	10	11	12	11	10	9	30
31								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	5	7	8	9	10	11	12	11	10	9	31
32									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	10	10	32
33										0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	11	10	33
34											0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	10	11	13	12	11	10	34
35												0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	11	12	13	12	11	10	35
36													0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	5	5	6	7	8	9	11	12	13	12	11	10	36
37														0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	6	6	7	8	9	11	12	13	12	11	11	37
38															0	0	0	0	0	0	0	0	0	1	2	3	3	4	5	6	7	7	8	10	11	12	13	13	12	11	38
39																0	0	0	0	0	0	0	0	0	2	3	3	4	5	6	7	8	9	10	11	12	14	13	12	11	39
40																	0	0	0	0	0	0	0	0	0	3	4	4	5	6	7	8	9	10	11	13	14	13	12	11	40
41																		0	0	0	0	0	0	0	0	0	4	4	5	6	7	8	9	10	12	13	14	13	12	11	41
42																			0	0	0	0	0	0	0	0	0	5	5	6	7	8	9	10	12	13	14	13	12	12	42
43																				0	0	0	0	0	0	0	0	0	5	6	7	8	9	10	12	13	14	14	13	12	43
44																					0	0	0	0	0	0	0	0	0	6	7	8	9	11	12	13	15	14	13	12	44
45																						0	0	0	0	0	0	0	0	0	8	9	10	11	12	14	15	14	13	12	45
46																							0	0	0	0	0	0	0	0	0	9	10	11	13	14	15	14	13	12	46
47																								0	0	0	0	0	0	0	0	0	0	10	11	13	14	15	14	13	12	47
48																									0	0	0	0	0	0	0	0	0	0	11	13	14	16	15	14	13	48
49																										0	0	0	0	0	0	0	0	0	0	13	15	16	15	14	13	49
50																											0	0	0	0	0	0	0	0	0	0	15	16	15	14	13	50
51																												0	0	0	0	0	0	0	0	0	0	16	15	14	13	51
52																													0	0	0	0	0	0	0	0	0	17	16	15	14	52
53																														0	0	0	0	0	0	0	0	17	16	15	14	53
54																															0	0	0	0	0	0	0	17	16	15	14	54
55																																0	0	0	0	0	0	17	16	15	14	55
56																																	0	0	0	0	0	17	16	15	14	56
57																																		0	0	0	0	18	17	16	15	57
58																																			0	0	0	18	17	16	15	58
59																																				0	0	18	17	16	15	59
60																																					0	18	17	16	15	60
61																																						19	18	17	15	61
62																																							18	17	16	62
63																																								17	16	63
64																																									16	64
65																																										65

Age at Hire

Note: employees not vested on July 1, 1993

On the other hand, employees hired at older ages and retiring after only a few years of service (5 years or less) will reap the highest rewards in the Maine State Retirement System.

Exhibit 14: EMPLOYER-PROVIDED VALUE — ANNUAL PERCENTAGE OF PAY

Age at Termination

Age at Hire

0	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	0
25		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	2	3	4	5	6	7	8	9	10	11	10	9	8	25
26			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	2	3	4	5	6	7	8	9	10	11	10	9	9	26
27				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	4	5	6	7	8	9	10	11	10	10	9	27
28					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	3	4	5	6	7	8	9	10	11	11	10	9	28
29						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	12	11	10	9	29
30							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	4	5	6	7	9	10	11	12	11	10	9	30
31								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	5	7	8	9	10	11	12	11	10	9	31
32									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	10	10	32
33										0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	11	10	33
34											0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	10	11	13	12	11	10	34
35												0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	11	12	13	12	11	10	35
36													0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	5	5	6	7	8	9	11	12	13	12	11	10	36
37														0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	6	6	7	8	9	11	12	13	12	11	11	37
38															0	0	0	0	0	0	0	0	0	0	1	2	3	3	4	5	6	7	7	8	10	11	12	13	13	12	11	38
39																0	0	0	0	0	0	0	0	0	0	2	3	3	4	5	6	7	8	9	10	11	12	14	13	12	11	39
40																	0	0	0	0	0	0	0	0	0	0	3	4	4	5	6	7	8	9	10	11	13	14	13	12	11	40
41																		0	0	0	0	0	0	0	0	0	0	4	4	5	6	7	8	9	10	12	13	14	13	12	11	41
42																			0	0	0	0	0	0	0	0	0	0	5	5	6	7	8	9	10	12	13	14	13	12	12	42
43																				0	0	0	0	0	0	0	0	0	0	5	6	7	8	9	10	12	13	14	14	13	12	43
44																					0	0	0	0	0	0	0	0	0	0	6	7	8	9	11	12	13	15	14	13	12	44
45																						0	0	0	0	0	0	0	0	0	0	8	9	10	11	12	14	15	14	13	12	45
46																							0	0	0	0	0	0	0	0	0	0	9	10	11	13	14	15	14	13	12	46
47																								0	0	0	0	0	0	0	0	0	0	10	11	13	14	15	14	13	12	47
48																									0	0	0	0	0	0	0	0	0	0	11	13	14	16	15	14	13	48
49																										0	0	0	0	0	0	0	0	0	0	13	15	16	15	14	13	49
50																											0	0	0	0	0	0	0	0	0	0	15	16	15	14	13	50
51																												0	0	0	0	0	0	0	0	0	0	16	15	14	13	51
52																													0	0	0	0	0	0	0	0	0	17	16	15	14	52
53																														0	0	0	0	0	0	0	0	17	16	15	14	53
54																															0	0	0	0	0	0	0	17	16	15	14	54
55																																0	0	0	0	0	0	17	16	15	14	55
56																																	0	0	0	0	0	17	16	15	14	56
57																																		0	0	0	0	18	17	16	15	57
58																																			0	0	0	18	17	16	15	58
59																																				0	0	18	17	16	15	59
60																																					0	18	17	16	15	60
61																																						19	18	17	15	61
62																																							18	17	16	62
63																																								17	16	63
64																																									16	64
65																																										65

Note: employees not vested on July 1, 1993

Older short-service employees (at the lower right-hand corner of the table) are entitled to substantial benefits, while younger long-service employees (upper middle section of the table) are entitled to much less valuable benefits, if any.

Exhibit 15: EMPLOYER-PROVIDED VALUE — ANNUAL PERCENTAGE OF PAY

Age at Termination

Age at Hire

0	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	0
25		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	2	3	4	5	6	7	8	9	10	11	10	9	8	25
26			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	2	3	4	5	6	7	8	9	10	11	10	9	9	26
27				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3	4	5	6	7	8	9	10	11	10	10	9	27
28					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	3	4	5	6	7	8	9	10	11	11	10	9	28
29						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	12	11	10	9	29
30							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	4	5	6	7	9	10	11	12	11	10	9	30
31								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	5	7	8	9	10	11	12	11	10	9	31
32									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	10	10	32
33										0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	9	10	11	12	11	11	10	33
34											0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	10	11	13	12	11	10	34
35												0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	7	8	9	11	12	13	12	11	10	35
36													0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	3	4	5	5	6	7	8	9	11	12	13	12	11	10	36
37														0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	5	6	6	7	8	9	11	12	13	12	11	11	37
38															0	0	0	0	0	0	0	0	0	0	1	2	3	3	4	5	6	7	7	8	10	11	12	13	13	12	11	38
39																0	0	0	0	0	0	0	0	0	0	2	3	3	4	5	6	7	8	9	10	11	12	14	13	12	11	39
40																	0	0	0	0	0	0	0	0	0	0	3	4	4	5	6	7	8	9	10	11	13	14	13	12	11	40
41																		0	0	0	0	0	0	0	0	0	0	4	4	5	6	7	8	9	10	12	13	14	13	12	11	41
42																			0	0	0	0	0	0	0	0	0	0	5	5	6	7	8	9	10	12	13	14	13	12	12	42
43																				0	0	0	0	0	0	0	0	0	0	5	6	7	8	9	10	12	13	14	14	13	12	43
44																					0	0	0	0	0	0	0	0	0	0	6	7	8	9	11	12	13	15	14	13	12	44
45																						0	0	0	0	0	0	0	0	0	0	8	9	10	11	12	14	15	14	13	12	45
46																							0	0	0	0	0	0	0	0	0	0	9	10	11	13	14	15	14	13	12	46
47																								0	0	0	0	0	0	0	0	0	0	10	11	13	14	15	14	13	12	47
48																									0	0	0	0	0	0	0	0	0	0	11	13	14	16	15	14	13	48
49																										0	0	0	0	0	0	0	0	0	0	13	15	16	15	14	13	49
50																											0	0	0	0	0	0	0	0	0	0	15	16	15	14	13	50
51																												0	0	0	0	0	0	0	0	0	0	16	15	14	13	51
52																													0	0	0	0	0	0	0	0	0	17	16	15	14	52
53																														0	0	0	0	0	0	0	0	17	16	15	14	53
54																															0	0	0	0	0	0	0	17	16	15	14	54
55																																0	0	0	0	0	0	17	16	15	14	55
56																																	0	0	0	0	0	17	16	15	14	56
57																																		0	0	0	0	18	17	16	15	57
58																																			0	0	0	18	17	16	15	58
59																																				0	0	18	17	16	15	59
60																																					0	18	17	16	15	60
61																																						19	18	17	15	61
62																																							18	17	16	62
63																																								17	16	63
64																																									16	64
65																																										65

Note: employees not vested on July 1, 1993

Another layer of inequity is introduced by the fact that the level of benefit varies depending on whether an employee had ten years of service as of July 1, 1993, while employee contributions do not vary. Benefits for these two classes of employees are compared below.

Exhibit 16: VALUE INEQUITIES UNDER THE TWO-TIER MAINE SYSTEM

	As of July 1, 1993	
	10 or More Years of Service	Less than 10 Years of Service
Full benefit	Age 60	Age 62
Reduction for early commencement	2¹/₈% per annum prior to age 60	6% per annum prior to age 62
Cost of living adjustments	Available irrespective of age at commencement	Available only from age 62

Age at Termination

Age at Hire	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
25	15	15	14	14	14	14	14	13	13	13	12	12	11	10	9	8
26	1	15	15	14	14	14	14	14	13	13	13	12	11	10	9	9
27	1	2	15	15	15	14	14	14	13	13	13	12	11	10	10	9
28	1	2	2	15	15	15	14	14	14	13	13	12	11	11	10	9
29	1	2	2	3	15	15	14	14	14	13	12	12	12	11	10	9
30	1	2	3	3	4	15	15	14	14	14	13	13	12	11	10	9
31	1	2	3	3	4	5	15	15	14	14	14	13	12	11	10	9
32	2	2	3	3	4	5	6	15	15	14	14	13	12	11	10	10
33	2	2	3	3	4	5	6	7	15	14	14	13	12	11	11	10
34	2	2	3	4	4	5	6	7	8	15	14	13	13	12	11	10
35	2	2	3	4	4	5	6	7	8	9	15	14	13	12	11	10
36	2	2	3	4	5	5	6	7	8	9	15	14	13	12	11	10
37	2	3	3	4	5	6	6	7	8	9	15	14	13	12	11	11
38	2	3	3	4	5	6	7	7	8	10	15	14	13	13	12	11
39	2	3	3	4	5	6	7	8	9	10	15	15	14	13	12	11
40	0	3	4	4	5	6	7	8	9	10	16	15	14	13	12	11
41	0	0	4	4	5	6	7	8	9	10	16	15	14	13	12	11
42	0	0	0	5	5	6	7	8	9	10	16	15	14	13	12	12
43	0	0	0	0	5	6	7	8	9	10	16	15	14	14	13	12
44	0	0	0	0	0	6	7	8	9	11	17	16	15	14	13	12
45	0	0	0	0	0	0	8	9	10	11	17	16	15	14	13	12
46	0	0	0	0	0	0	0	9	10	11	17	16	15	14	13	12
47	0	0	0	0	0	0	0	0	10	11	17	16	15	14	13	12
48	0	0	0	0	0	0	0	0	0	11	18	17	16	15	14	13
49	0	0	0	0	0	0	0	0	0	0	18	17	16	15	14	13
50		0	0	0	0	0	0	0	0	0	0	17	16	15	14	13
51			0	0	0	0	0	0	0	0	0	0	16	15	14	13
52				0	0	0	0	0	0	0	0	0	17	16	15	14
53					0	0	0	0	0	0	0	0	17	16	15	14
54						0	0	0	0	0	0	0	17	16	15	14
55							0	0	0	0	0	0	17	16	15	14
56								0	0	0	0	0	17	16	15	14
57									0	0	0	0	18	17	16	15
58										0	0	0	18	17	16	15
59											0	0	18	17	16	15
60												0	18	17	16	15
61													19	18	17	15
62														18	17	16
63															17	16
64																16
65																

Note: employees vested on July 1, 1993

Age at Termination

Age at Hire	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
25	0	0	0	2	3	4	5	6	7	8	9	10	11	10	9	8
26	1	0	0	2	3	4	5	6	7	8	9	10	11	10	9	9
27	1	2	1	2	3	4	5	6	7	8	9	10	11	10	10	9
28	1	2	2	2	3	4	5	6	7	8	9	10	11	11	10	9
29	1	2	2	3	3	4	5	6	7	8	9	10	12	11	10	9
30	1	2	3	3	4	4	5	6	7	9	10	11	12	11	10	9
31	1	2	3	3	4	5	5	7	8	9	10	11	12	11	10	9
32	2	2	3	3	4	5	6	7	8	9	10	11	12	11	10	10
33	2	2	3	3	4	5	6	7	8	9	10	11	12	11	11	10
34	2	2	3	4	4	5	6	7	8	9	10	11	13	12	11	10
35	2	2	3	4	4	5	6	7	8	9	11	12	13	12	11	10
36	2	2	3	4	5	5	6	7	8	9	11	12	13	12	11	10
37	2	3	3	4	5	6	6	7	8	9	11	12	13	12	11	11
38	2	3	3	4	5	6	7	7	8	10	11	12	13	13	12	11
39	2	3	3	4	5	6	7	8	9	10	11	12	14	13	12	11
40	0	3	4	4	5	6	7	8	9	10	11	13	14	13	12	11
41	0	0	4	4	5	6	7	8	9	10	12	13	14	13	12	11
42	0	0	0	5	5	6	7	8	9	10	12	13	14	13	12	12
43	0	0	0	0	5	6	7	8	9	10	12	13	14	14	13	12
44	0	0	0	0	0	6	7	8	9	11	12	13	15	14	13	12
45	0	0	0	0	0	0	8	9	10	11	12	14	15	14	13	12
46	0	0	0	0	0	0	0	9	10	11	13	14	15	14	13	12
47	0	0	0	0	0	0	0	0	10	11	13	14	15	14	13	12
48	0	0	0	0	0	0	0	0	0	11	13	14	16	15	14	13
49	0	0	0	0	0	0	0	0	0	0	13	15	16	15	14	13
50		0	0	0	0	0	0	0	0	0	0	15	16	15	14	13
51			0	0	0	0	0	0	0	0	0	0	16	15	14	13
52				0	0	0	0	0	0	0	0	0	0	16	15	14
53					0	0	0	0	0	0	0	0	17	16	15	14
54						0	0	0	0	0	0	0	17	16	15	14
55							0	0	0	0	0	0	17	16	15	14
56								0	0	0	0	0	17	16	15	14
57									0	0	0	0	18	17	16	15
58										0	0	0	18	17	16	15
59											0	0	18	17	16	15
60												0	18	17	16	15
61													19	18	17	15
62														18	17	16
63															17	16
64																16
65																

Note: employees not vested on July 1, 1993

Conclusions — Equity

- The level of employee contribution required in the Maine State Retirement System creates a significant inequity because for most employees it takes many years before the total value of the benefit being earned exceeds the value of the employee's own contributions plus interest. In contrast, employees hired at an older age and working fewer years earn a high value of employer-provided benefit immediately.
- Employees hired since April 1, 1986 must contribute 1.45% to Medicare in addition to the 7.65% contribution to Maine State Retirement System but receive no additional benefit from the System. Employees hired before April of 1986 are not required to contribute to Medicare.
- There are substantial inequities caused by the legislation enacted in 1991 and 1993 that created two classes of employees depending on whether an employee had 10 years of service as of July 1, 1993. The primary effect of this inequity is an increase in the normal retirement age and a different level of early retirement benefit available to persons on either side of this "cliff".
- The inequities of the benefit structure limit the plan's effectiveness in meeting the statutory goals of recruiting and retaining qualified employees. The benefit structure, particularly the pre-cliff benefit structure, is very attractive for an employee intending to work a full career with the State and for an older worker. It is unattractive to other employees because the benefit is not portable and it takes many years to receive any employer-provided value.
- Employees are required to contribute toward the cost of retirement benefits at levels which compare favorably with the programs of other States. Many private sector employers do not require employee contributions to defined benefit plans. However, these private sector employees are subject to the 7.65% FICA payroll tax for participation in Social Security.

The Spiller Decision

In addition to the general responsibility to "...review all aspects of the Maine State Retirement System to ensure its present and future fiscal soundness", this Committee was assigned the specific task of addressing "...the Legislature's obligations and rights concerning benefit modifications" in view of the holding of the Maine Supreme Judicial Court in *Lorraine Spiller, et.al. v. State of Maine, et.al.*, decided June 23, 1993.

The Court in *Spiller* held that "...statutory changes [to the Maine State Retirement System] do not impact any constitutionally protected rights of the plaintiffs." The decision is limited to nonvested employees: "...we do not address the rights of those state employees who have...qualified for service retirement benefits" (i.e., vested employees).

In short, the *Spiller* case holds that the 1991 amendments did not violate any contract rights of the affected employees because the retirement statute is not a contract. The principal effect of the decision is to grant the Legislature broad discretion to modify retirement benefits, at least with respect to nonvested employees.

It is the view of this Committee that, as a matter of policy, to the extent *Spiller* permits the Legislature to retroactively reduce the benefits of employees after those benefits have been earned, the decision goes too far.

Financial Stability of Current System

This part of the report addresses the Committee's statutory duty to review a number of issues related to the fiscal soundness and financial stability of the Maine State Retirement System.

Overall Health of System

While we certainly recognize that a significant problem remains with the funding of the retirement system, there have been improvements in the overall health of the system that are worthy of note.

- When adjusted for inflation, the size of the unfunded liability has remained relatively stable over the last 15 years.
- The assets of the fund have increased from 38% of the accrued liability in 1987 to 61% in 1993.
- The risk-adjusted investment performance of the fund has been superior during the past 5 years when measured against other public pension funds (in the top 25th percentile).

Current Funding

Since 1987, the Maine State Retirement System's actuaries have used traditional methods to project the liabilities of the System. These calculations have been performed in accordance with national standards and have been consistently applied.

The ultimate objective of this funding policy is to reach a point where the employer contribution has dropped to what is called the "normal cost". If this normal cost is contributed over an average employee's working career and is combined with the employee's contribution and investment earnings, it is enough to pay for the estimated retirement benefits for that employee.

Reaching the "normal cost" objective also requires paying for the unfunded liability. In response to the recommendations of the 1987 Committee to Study the Retirement System, a decision was made to follow a funding schedule that would reduce the unfunded liability to zero after 30 years. This goal was to be accomplished by making level contributions over 30 years, rather than by following a schedule which called for sharp increases over a shorter period.

The actuarial methodology used by the Maine State Retirement System is widely used by private sector employers and state governments in funding their retirement plans. The 1987 Committee to Study the Retirement System endorsed this methodology. This Committee also considers the current methodology to be consistent with sound funding policy.

Affordability of Current System

Based on the economic projections provided by the State Planning Office, the current benefit structure and the current level of funding (16.49% of payroll, which is 10% of revenues) appear to be affordable over the long term. The analysis projects that system costs will increase at the same rate as the State Planning Office has forecast for revenues.

Actuarial Assumptions

One of the specific tasks assigned to this Committee was to review the actuarial assumptions used for funding the System. The Committee's independent actuary, William M. Mercer, Inc., has provided the following summary:

> "The current actuarial assumptions being used by Milliman & Robertson to determine both liabilities and costs for the Maine State Retirement System are reasonable in the aggregate. It is our understanding that the demographic assumptions are based on actual experience and that a study of experience is being performed in 1994 to determine if changes should be made.
>
> Of particular interest are the assumed rates of retirement. If there are more early retirements than anticipated, then liabilities and costs will increase. Actual experience should be carefully studied to ensure that appropriate retirement assumptions are used.
>
> A study should be performed to evaluate salary increase assumptions which, if anything, are above those used by the majority of employers. If, after careful analysis, these rates appear high, then future cost and liability projections will be overstated.
>
> The economic assumptions appear to be based on an underlying rate of inflation of 4% - 5%, which is reasonable. Recent learning on inflation rates may, however, indicate a downward trend in the future which should be reviewed in connection with an assessment of projected salary increases. All other economic assumptions appear to be consistent as well.
>
> Overall, current assumptions give a reasonable financial picture of the Maine State Retirement System's funded status and cost."

Causes of the Unfunded Liability

Another responsibility assigned to this Committee is to review the causes of the unfunded liability. Milliman & Robertson, the System's actuaries, use two concepts in reporting on unfunded liabilities. The first is "unfunded actuarial liabilities". Unfunded actuarial liabilities include both benefits earned ("accrued") in the past and benefits that are expected to be accrued in the future based on future anticipated increases in pay and service credits. As of June 30, 1993, the System's Unfunded Actuarial Liability was $2.64 billion, a decrease of $534 million from a year earlier. This decrease was largely attributable to legislated changes in benefits and assumptions.

The second concept used in reporting on unfunded liabilities is the "accrued benefit liability". This term refers to benefits actually earned as of any date, based on members' earnings and service credits as of that date. The difference between this figure and the market value of System assets represents the Unfunded Accrued Benefit Liability. As of June 30, 1993, this was $1.25 billion, as compared with $1.49 billion a year earlier. Legislated reductions in benefits accounted for a substantial part of this reduction.

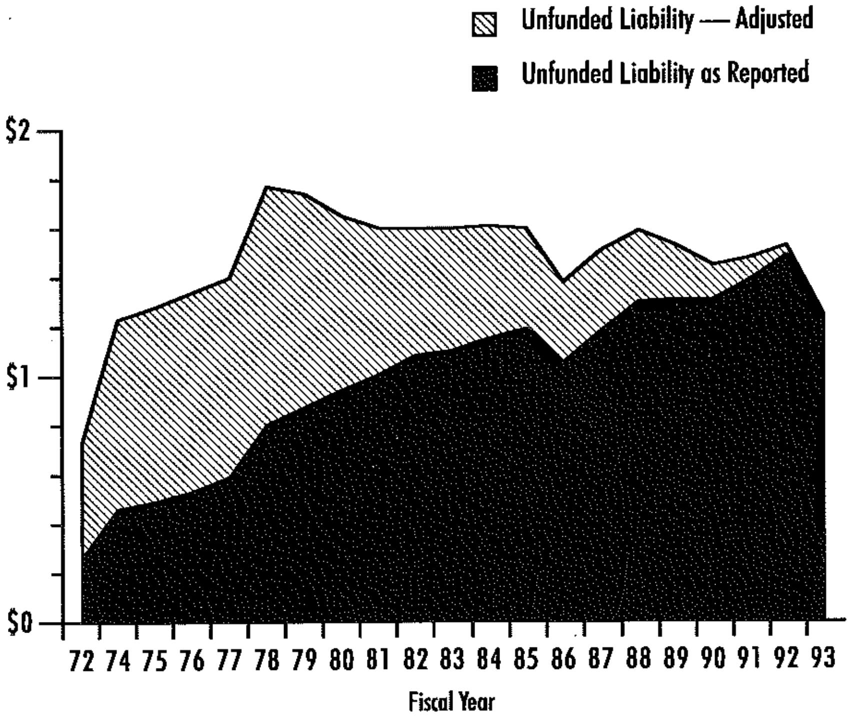
The Maine State Retirement System provided this Committee with a detailed report on the causes of the unfunded accrued liability from 1972 to the present. The detailed findings of that report, which identify additions to the unfunded liability for each year, are presented on the next page. Stated generally, the underlying causes of the unfunded liability since 1972 are underestimating the costs of benefits while overestimating future funding and repeatedly failing to appropriate the necessary funds.

As the graph on page 37 illustrates, the size of the inflation-adjusted unfunded accrued liability remained relatively stable over the past 15 years. The major benefit improvements enacted without proper funding were made in the 1970's and the early 1980's. Additions to the unfunded liability due to legislation granting benefits retroactively without proper funding has not been a major problem since 1987, although the problem may recur in the future.

Unfunded Accrued Liability

	FY			
	70	M.S. 1/70 to 1/60, AFC from 5-year avg. to 3-year avg., Minimum Ben. $80/mo.		
	72	Teacher Prior Service (pre-1947) 1/70 to 1/60, Retired Teachers Inc. $16\frac{2}{3}$% - State Special Plan Changes		$ 263M
New Actuary	73	No Report Located		
	74	M.S. 1/60 to 1/50, P.S. 1/60 to 1/50, Minimum Ben. $80 to $100/mo. - Inc. UAL, $175M Early Ret. 30 years to 25 years		$ 465M
	75	Investment Loss $13.25M, Salary Increases $6.75M, Old System Teachers	OST $10M	$ 495M
	76	Experience Losses, Invest Return, Salary Inc., Retirement Ages	OST $14M	$ 528M
	77	Investment Return, COLA, Retirement Ages	OST $ 6M	$ 589M
Assumption Changes	78	Actuarial Assum. Chg. - $101M, Exper. Loss - $79M (Salary, COLA, Ret. Age, Invest)	OST $30M	$ 799M
	79	Teacher Prior Serv. Pre-1942 1/60 to 1/50 - $9M, Exp. Losses $47M (Salary, Ret. Ages)	OST $18M	$ 873M
	80	Exper. Losses - $53M (Salary, Ret. Ages)	OST $16M	$ 942M
Funding OST Began	81	Exper. Losses - $39M (Salary, Ret. Ages) - Invest Gain	OST $20M	$1,001M
	82	Exper. Losses - $51M (Salary, Ret. Ages) Extra 2% COLA - $15M - Invest Gain	OST $10M	$1,077M
	83	Exper. Gains & Losses Balanced, Extra 50¢ COLA - $17M - Invest Gain	OST $11M	$1,102M
	84	Exper. Losses - $51M (Salary, Ret. Ages, Invest) Benefit Revision (Soucy) - $1.3M, Extra 1.4% COLA	OST N/C	$1,155M
	85	Exper. Losses - $25M (Ret. Ages) - Invest Gain		$1,190M
New Actuary	86	Funding Method Changed from "Attained Age Normal" to "Entry Age Normal," Assumptions Changed		$1,046M
Assumption Changes	87	Assumptions Strengthened (Retire Age 60) Experience Losses (Salaries, Ret. Ages) Asset Gain $23M		$1,185M
	88	Exper. Losses - Asset Loss of $23M		$1,301M
	89	Exper. Losses - Asset Loss of $3M		$1,311M
	90	Exper. Losses - Asset Gain of $3M		$1,308M
Benefit Changes	91	Exper. Losses - Asset Loss of $10M - Benefit Changes (Gain) - Contributions Less Than Expected - $13M		$1,394M
Assumption Changes	92	Exper. Losses - Asset Gain of $29M - Contributions Less Than Expected - Assumption Changes		$1,488M
	93	Exper. Losses - Asset Gain of $82M - Contributions Less Than Expected - Gain - Assumption Changes		$1,252M

UNFUNDED ACCRUED LIABILITY ADJUSTED FOR INFLATION



Another significant cause of the unfunded liability is the failure to appropriate the necessary funds. This problem is recurring and has included deappropriating funds, deferrals of payments due, and agreeing to furlough days that reduce covered payroll with respect to contributions but without producing a corresponding reduction with respect to benefit calculation.

The overall stability in the size of the inflation-adjusted unfunded liability from about 1980 to 1992 is explained by the fact that the unfunded COLA adjustments of the early 1980's and the repeated experiences losses and shortages in appropriations were offset by the experience gains made in the investment of fund assets. Had the investment performance of the fund not been so impressive, the unfunded liability would certainly have grown.

Financial Stability and Balancing the Budget

Milliman & Robertson, Inc., in its June 30, 1993 actuarial valuation report on the Maine State Retirement System, expressed a high level of concern with the State's current practices and policies in setting an appropriate funding level:

> "We are concerned that the procedures used to change actuarial assumptions (i.e., by legislation and not by objective evaluation), will seriously weaken the System's funding in the future. *Current cost reductions produced by the legislated assumption changes are only a deferral of costs to future years*. Legislated changes to benefits will produce actual reductions in costs but these only account for one-third of the total projected drop in contributions." (emphasis added)

The report noted that the changes affecting only the timing include increasing the assumption on investment return from 8.0% to 8.2%, extending the amortization period to 35 years, and paying administrative expenses out of the System's assets. The legislated changes to benefits include:

- The increase in employee contribution by 1.15%,
- A cap on pay increases used in average final compensation,
- A delay in eligibility for COLA increases for an additional 6 months, and,
- For members with less than 10 years of service on July 1, 1993:
    - an increase in normal retirement age to 62
    - elimination of COLA until normal retirement age
    - early retirement reduction of 6% per year, and
    - excluding vacation and sick pay from average final compensation.

In summarizing the effect of these changes, the actuary's report stated:

> "Absent the assumption changes [affecting only the timing], these benefit reforms would have served to reduce the contribution rate by 1.98%. In combination with the assumption changes the combined rate for the System drops from 22.52% to 16.49% for a total reduction of 6.03% of payroll."

Over the past five years, the State's contribution rates as a percentage of employee compensation have been:

1989	19.68%
1990	19.66%
1991	19.80%
1992	22.09%
1993	16.49%

The State has been able to pay, on average, in the range of 19% of payroll for retirement benefit costs, including payments for the unfunded liability.

The success of any funding plan requires a strict adherence to that plan. Deviations from the plan or attempts to manipulate it by changing actuarial assumptions are serious concerns for actuaries, rating agencies and others who understand the importance of a sound and well-disciplined funding policy.

Conclusions — Current Financial Situation

- When adjusted for inflation, the size of the unfunded liability has remained relatively stable over the last 15 years, while the assets of the fund have increased from 38% of the accrued benefit liability in 1987 to 61% in 1993.
- The risk-adjusted investment performance of the fund has been superior during the past 5 years when measured against other public pension funds (in the top 25th percentile).
- The actuarial methodology used by the Maine State Retirement System is a sound funding plan.
- Based on the economic projections provided by the State Planning Office, the current benefit structure and the current level of funding (16.49%) appear to be affordable over the long term.
- The actuarial assumptions used by the System's actuary are reasonable although the retirement age and salary increase assumptions should be studied.
- The underlying causes of the unfunded liability have been underestimating the cost of benefits while overestimating the future funding and failing to appropriate the necessary funds.
- Deviations from the funding plan to balance the State's budget is a cause of great concern for actuaries, rating agencies and others.

The Need for Change

A defined benefit plan is highly vulnerable to an absence of discipline in the legislative and executive processes of budgeting. The State is obligated to pay for the promised retirement benefit to eligible employees, whether or not there is money in the System. The System's assets reflect the State's decision to prefund its retirement obligations in order to achieve intergenerational fairness. The assets of the System at any point in time are not "owned" in the sense that one "owns" a bank account or an interest in a defined contribution plan. There is, therefore, no individual "owner" of an identifiable account who loses anything concrete when funding discipline disappears.

Changing the funding strategy and reducing benefits in order to balance the budget runs counter to the primary purpose of establishing a retirement system: to attract and retain qualified employees and to assist them in making provision for their retirement. Repeated changes in funding and reduction in benefits show a lack of commitment by the State that demoralizes workers and reduces the attractiveness of State employment generally.

This Committee has attempted to identify changes that will both improve the overall retirement security of employees and permit continued improvement of the financial stability of the System. What is needed must stand the test of time and insulate the System from budgetary battles over benefit reductions, actuarial assumptions and funding policy changes.

We believe the basis for a retirement policy that can be sustained over many years is for the Legislature to establish a contribution rate, expressed as a fixed percentage of pay to which the State would adhere over the next 30 years. We looked at what the State has been able to pay over the last five years, what would be needed to create a more equitable and effective benefit structure and what would eliminate the unfunded liability over a 30-year period. We concluded that 18% - 19% is a reasonable range.

We recommend that a fixed percentage of payroll of not more than 19% be established for the funding of retirement benefits to pay off all accrued and actuarial liabilities within 30 years. Any new benefits beyond those recommended here should be funded at the time they are granted and the fixed percentage of payroll should be reviewed from time to time to make sure the unfunded liability continues to decline.

A critical element in assuring the economic health of a public pension system is a demonstrated commitment to continued funding of an acceptable level of current benefits and amortization of past liabilities. The Maine State Retirement System is currently using a methodology that accomplishes these objectives. This Committee discussed the development of new funding strategies that could also achieve the desired goal. Such a plan was presented by the Committee's independent consultant, William M. Mercer, and is described in Appendix C. No criticism of the existing practice is intended by this Committee's introduction of a different methodology. What is intended is to make clear that the necessary discipline of systematically funding obligations can be affected through the Mercer alternative as well as the one presently employed.

In the first part of this report, we identified a number of inequities in the current benefit structure that must be addressed. We concluded that these inequities seriously impair the effectiveness of the retirement benefit in meeting the statutory goal of attracting and retaining qualified employees and assisting them in making provision for their retirement.

We believe that it is in the long-term interests of the taxpayers to have a benefit structure that provides an appropriate level of benefit to every employee, not just those who retire after many years with the State. The current benefit structure and the current funding schedule are designed so that ultimately, once the unfunded liability is paid off, the employer contribution will drop to a level *below* the employee's own contribution. We believe a higher ultimate contribution level by the State both necessary and fair. It is necessary in order to attract and retain qualified employees, and it is fair because it will enable the State to offer all employees a benefit of some value.

We believe that it is possible to address many of the inequities by adopting a funding strategy based on employer contributions at 18% - 19% of pay with the methodology suggested by Mercer. The plan we are recommending should have the following elements:

- Portability of as much of the benefit as possible so that employees who terminate employment before retirement receive some employer-provided value.
- All new employees, employees on the "wrong" side of the cliff (i.e., with less than 10 years of service on July 1, 1993), and part-time, seasonal and temporary employees should have the option of participating in Social Security and a defined contribution plan instead of the Maine State Retirement System. The defined contribution plan should include matching employer contributions of up to 3% of payroll.

- Employees on the "right" side of the cliff (i.e., with 10 or more years of service on July 1, 1993) would not be given the option of leaving the Maine State Retirement System.
- If possible to do so within the 18% - 19% figure, all or parts of the cliff should be eliminated from the traditional benefit option as long as it is done in conjunction with providing employees the alternative plan option.

The following four charts prepared by the Committee's consulting actuary, William M. Mercer, Inc., lead to the conclusion that the State can afford at the indicated payment levels a system that accommodates all of the objectives identified. These four charts are provided to illustrate the effect of modifying one or more of the principal variables: the state contribution level, the funding period, and the employer match in the defined contribution plan. These projections of funded status assume that all new employees and all employees on the "wrong" side of the cliff will choose the new option.

We recognize that these projections do not reflect the fact that some employees would choose the existing plan. Newly-hired, older employees would see that the existing plan offered them greater benefits than the new plan. This would be the case with most workers entering state employ after about age 45 and would result in what is called adverse selection, which would create higher costs to the Maine State Retirement System. If the design of the existing plan were left as is, this cost could be as high as 1% of payroll per year over the thirty years we projected. Accordingly, we recommend that the existing plan be modified for new hires to take adverse selection into account so that new hires of whatever age have equivalent choices as to the value of the benefits they would earn under either plan.

We are including in this report, therefore, proposed legislation intended to allow the transformation of our recommendations into a detailed plan subjected to all of the necessary actuarial analysis. We are proposing the creation of a seven-member transition committee made up of representatives of employees, employers, and the public to develop a detailed plan for implementing our recommendations. We recommend that this committee submit its implementation plan and legislation by January 1, 1996. We think this extended lead time is essential due to the many details that must be resolved and the complexities of the actuarial issues involved. The committee must also have the assistance of an actuarial consulting firm throughout their deliberations.

A key component of successfully introducing a benefit option to employees is providing a significant amount of time and a specific program for educating employees on their options. We believe that a committee composed of representatives of employees and employers will be ideally suited to recommending to the Legislature the full range of details of the plan design and the process for educating employees.

MSRS Benefit Study
Projection of Funded Status

All new employees and employees not vested on July 1, 1993 in Social Security and Defined Contribution Plan (3% Employee, 3% State)
State contribution: 18.3% over 30 years

State contribution (% pay):	18.30%
Including Social Security and D.C. plan	
Investment earnings:	8.20%
Salary increases:	6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information			Employees not in MSRS			State contribution (% total pay)			
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio	Payroll	FICA tax (OASDI only 6.2% pay Each ee & state	DC plan 3.00% pay	FICA tax	D.C. plan	D.B. plan	TOTAL
1993	42,014	1,103	1,795	1,330	3,125	1,884	(193)	55	167	164	1,241	9.76	60%	379	23	11	2.13%	1.03%	15.14%	18.30%
1994	42,266	1,181	1,910	1,437	3,347	2,077	(202)	55	174	180	1,270	10.28	62%	457	28	14	2.40%	1.16%	14.74%	18.30%
1995	42,520	1,252	2,034	1,553	3,587	2,283	(213)	55	180	197	1,304	10.72	64%	530	33	16	2.62%	1.27%	14.41%	18.30%
1996	42,775	1,325	2,174	1,673	3,847	2,503	(225)	55	187	215	1,344	11.12	65%	604	37	18	2.83%	1.37%	14.10%	18.30%
1997	43,031	1,401	2,333	1,793	4,126	2,735	(239)	55	194	234	1,391	11.44	66%	683	42	21	3.02%	1.46%	13.81%	18.30%
1998	43,289	1,480	2,515	1,910	4,425	2,979	(254)	55	200	255	1,446	11.73	67%	768	48	23	3.22%	1.56%	13.53%	18.30%
1999	43,549	1,563	2,723	2,018	4,741	3,234	(272)	54	207	276	1,507	11.89	68%	858	53	26	3.40%	1.65%	13.25%	18.30%
2000	43,814	1,657	2,958	2,092	5,050	3,499	(291)	53	214	298	1,551	12.03	69%	970	60	29	3.63%	1.76%	12.91%	18.30%
2001	44,078	1,751	3,211	2,165	5,376	3,773	(313)	51	221	321	1,603	12.06	70%	1,082	67	32	3.83%	1.85%	12.61%	18.30%
2002	44,343	1,846	3,490	2,240	5,730	4,053	(338)	50	228	344	1,677	11.99	71%	1,194	74	36	4.01%	1.94%	12.35%	18.30%
2003	44,607	1,940	3,800	2,314	6,114	4,336	(366)	49	235	367	1,778	11.85	71%	1,306	81	39	4.17%	2.02%	12.11%	18.30%
2004	44,872	2,035	4,134	2,388	6,522	4,621	(397)	47	242	391	1,901	11.64	71%	1,418	88	43	4.32%	2.09%	11.89%	18.30%
2005	45,144	2,153	4,497	2,336	6,833	4,904	(431)	44	249	414	1,929	11.38	72%	1,573	98	47	4.53%	2.19%	11.58%	18.30%
2006.	45,417	2,272	4,878	2,284	7,162	5,181	(467)	42	257	437	1,981	11.09	72%	1,729	107	52	4.72%	2.28%	11.30%	18.30%
2007	45,689	2,391	5,271	2,231	7,502	5,449	(507)	39	264	459	2,053	10.75	73%	1,884	117	57	4.89%	2.36%	11.05%	18.30%
2008	45,962	2,509	5,674	2,179	7,853	5,705	(549)	36	272	480	2,148	10.39	73%	2,039	126	61	5.04%	2.44%	10.82%	18.30%
2009	46,234	2,628	6,082	2,127	8,209	5,944	(593)	33	279	500	2,265	10.02	72%	2,195	136	66	5.18%	2.51%	10.62%	18.30%
2010	46,506	2,747	6,386	1,924	8,310	6,163	(636)	30	287	518	2,147	9.69	74%	2,350	146	70	5.30%	2.57%	10.43%	18.30%
2011	46,779	2,865	6,705	1,741	8,446	6,362	(679)	28	294	535	2,084	9.37	75%	2,505	155	75	5.42%	2.62%	10.26%	18.30%
2012	47,051	2,984	7,041	1,574	8,615	6,540	(720)	25	301	550	2,075	9.08	76%	2,661	165	80	5.53%	2.67%	10.10%	18.30%
2013	47,324	3,102	7,392	1,425	8,817	6,696	(758)	22	309	563	2,121	8.83	76%	2,816	175	84	5.63%	2.72%	9.95%	18.30%
2014	47,608	3,267	7,762	1,289	9,051	6,831	(793)	17	318	574	2,220	8.61	75%	3,046	189	91	5.78%	2.80%	9.72%	18.30%
2015	47,894	3,440	7,854	1,085	8,939	6,946	(815)	14	330	584	1,993	8.52	78%	3,259	202	98	5.87%	2.84%	9.58%	18.30%
2016	48,181	3,622	7,946	914	8,860	7,059	(837)	11	343	593	1,801	8.43	80%	3,474	215	104	5.95%	2.88%	9.47%	18.30%
2017	48,470	3,814	8,040	770	8,810	7,169	(860)	9	358	603	1,641	8.34	81%	3,693	229	111	6.00%	2.91%	9.39%	18.30%
2018	48,761	4,017	8,135	648	8,783	7,279	(884)	8	375	613	1,504	8.23	83%	3,918	243	118	6.05%	2.93%	9.33%	18.30%
2019	49,053	4,229	8,231	546	8,777	7,391	(908)	6	392	622	1,386	8.14	84%	4,148	257	124	6.08%	2.94%	9.28%	18.30%
2020	49,348	4,454	8,094	422	8,516	7,503	(912)	5	411	632	1,013	8.23	88%	4,393	272	132	6.11%	2.96%	9.23%	18.30%
2021	49,644	4,690	7,958	328	8,286	7,640	(915)	4	431	644	646	8.35	92%	4,644	288	139	6.14%	2.97%	9.19%	18.30%
2022	49,942	4,938	7,826	253	8,079	7,804	(919)	3	453	659	275	8.49	97%	4,904	304	147	6.16%	2.98%	9.16%	18.30%
2023	50,241	5,200	7,695	196	7,891	7,999	(923)	2	476	675	(108)	8.67	101%	5,174	321	155	6.17%	2.98%	9.15%	18.30%

MSRS Benefit Study
Projection of Funded Status

All new employees and employees not vested on July 1, 1993 in Social Security and Defined Contribution Plan (3% Employee, 3% State)
State contribution: 17.9% over 30 years

State contribution (% pay): 17.90%
Including Social Security and D.C. plan

Investment earnings: 8.20%
Salary increases: 6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information			Employees not in MSRS			State contribution (% total pay)			
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio	Payroll	FICA tax (OASDI only 6.2% pay Each ee & state	DC plan 3.00% pay	FICA tax	D.C. plan	D.B. plan	TOTAL
1993	42,014	1,103	1,795	1,330	3,125	1,884	(193)	55	163	163	1,241	9.76	60%	379	23	11	2.13%	1.03%	14.74%	17.90%
1994	42,266	1,181	1,910	1,437	3,347	2,072	(202)	55	169	179	1,275	10.26	62%	457	28	14	2.40%	1.16%	14.34%	17.90%
1995	42,520	1,252	2,034	1,553	3,587	2,273	(213)	55	175	196	1,314	10.67	63%	530	33	16	2.62%	1.27%	14.01%	17.90%
1996	42,775	1,325	2,174	1,673	3,847	2,487	(225)	55	182	214	1,360	11.05	65%	604	37	18	2.83%	1.37%	13.70%	17.90%
1997	43,031	1,401	2,333	1,793	4,126	2,712	(239)	55	188	232	1,414	11.35	66%	683	42	21	3.02%	1.46%	13.41%	17.90%
1998	43,289	1,480	2,515	1,910	4,425	2,948	(254)	55	194	252	1,477	11.61	67%	768	48	23	3.22%	1.56%	13.13%	17.90%
1999	43,549	1,563	2,723	2,018	4,741	3,195	(272)	54	201	272	1,546	11.75	67%	858	53	26	3.40%	1.65%	12.85%	17.90%
2000	43,814	1,657	2,958	2,092	5,050	3,451	(291)	53	207	294	1,599	11.86	68%	970	60	29	3.63%	1.76%	12.51%	17.90%
2001	44,078	1,751	3,211	2,165	5,376	3,714	(313)	51	214	315	1,662	11.86	69%	1,082	67	32	3.83%	1.85%	12.21%	17.90%
2002	44,343	1,846	3,490	2,240	5,730	3,981	(338)	50	221	338	1,749	11.78	69%	1,194	74	36	4.01%	1.94%	11.95%	17.90%
2003	44,607	1,940	3,800	2,314	6,114	4,251	(366)	49	227	360	1,863	11.61	70%	1,306	81	39	4.17%	2.02%	11.71%	17.90%
2004	44,872	2,035	4,134	2,388	6,522	4,521	(397)	47	234	382	2,001	11.39	69%	1,418	88	43	4.32%	2.09%	11.49%	17.90%
2005	45,144	2,153	4,497	2,336	6,833	4,787	(431)	44	241	404	2,046	11.11	70%	1,573	98	47	4.53%	2.19%	11.18%	17.90%
2006	45,417	2,272	4,878	2,284	7,162	5,045	(467)	42	248	426	2,117	10.80	70%	1,729	107	52	4.72%	2.28%	10.90%	17.90%
2007	45,689	2,391	5,271	2,231	7,502	5,293	(507)	39	255	446	2,209	10.44	71%	1,884	117	57	4.89%	2.36%	10.65%	17.90%
2008	45,962	2,509	5,674	2,179	7,853	5,526	(549)	36	261	465	2,327	10.07	70%	2,039	126	61	5.04%	2.44%	10.42%	17.90%
2009	46,234	2,628	6,082	2,127	8,209	5,740	(593)	33	269	483	2,469	9.68	70%	2,195	136	66	5.18%	2.51%	10.22%	17.90%
2010	46,506	2,747	6,386	1,924	8,310	5,931	(636)	30	276	499	2,379	9.33	71%	2,350	146	70	5.30%	2.57%	10.03%	17.90%
2011	46,779	2,865	6,705	1,741	8,446	6,099	(679)	28	282	513	2,347	8.98	72%	2,505	155	75	5.42%	2.62%	9.86%	17.90%
2012	47,051	2,984	7,041	1,574	8,615	6,244	(720)	25	289	525	2,371	8.67	72%	2,661	165	80	5.53%	2.67%	9.70%	17.90%
2013	47,324	3,102	7,392	1,425	8,817	6,363	(758)	22	296	535	2,454	8.39	72%	2,816	175	84	5.63%	2.72%	9.55%	17.90%
2014	47,608	3,267	7,762	1,289	9,051	6,458	(793)	17	305	543	2,593	8.14	71%	3,046	189	91	5.78%	2.80%	9.32%	17.90%
2015	47,894	3,440	7,854	1,085	8,939	6,529	(815)	14	316	549	2,410	8.01	73%	3,259	202	98	5.87%	2.84%	9.18%	17.90%
2016	48,181	3,622	7,946	914	8,860	6,593	(837)	11	329	555	2,267	7.88	74%	3,474	215	104	5.95%	2.88%	9.07%	17.90%
2017	48,470	3,814	8,040	770	8,810	6,650	(860)	9	343	560	2,160	7.73	75%	3,693	229	111	6.00%	2.91%	8.99%	17.90%
2018	48,761	4,017	8,135	648	8,783	6,702	(884)	8	359	565	2,081	7.58	76%	3,918	243	118	6.05%	2.93%	8.93%	17.90%
2019	49,053	4,229	8,231	546	8,777	6,749	(908)	6	375	569	2,028	7.43	77%	4,148	257	124	6.08%	2.94%	8.88%	17.90%
2020	49,348	4,454	8,094	422	8,516	6,792	(912)	5	393	573	1,724	7.45	80%	4,393	272	132	6.11%	2.96%	8.83%	17.90%
2021	49,644	4,690	7,958	328	8,286	6,851	(915)	4	412	579	1,435	7.49	83%	4,644	288	139	6.14%	2.97%	8.79%	17.90%
2022	49,942	4,938	7,826	253	8,079	6,931	(919)	3	433	586	1,148	7.54	86%	4,904	304	147	6.16%	2.98%	8.76%	17.90%
2023	50,241	5,200	7,695	196	7,891	7,034	(923)	2	455	596	857	7.62	89%	5,174	321	155	6.17%	2.98%	8.75%	17.90%

MSRS Benefit Study
Projection of Funded Status

All new employees and employees not vested on July 1, 1993 in Social Security and Defined Contribution Plan (3% Employee, 1.5% State)
State contribution: 17.9% over 35 years

State contribution (% pay): Including Social Security and D.C. plan	17.90%
Investment earnings:	8.20%
Salary increases:	6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information			Employees not in MSRS			State contribution (% total pay)			
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio	Payroll	FICA tax (OASDI only 6.2% pay *Each ee & state*	DC plan 1.50% pay	FICA tax	D.C. plan	D.B. plan	TOTAL
1993	42,014	1,103	1,795	1,330	3,125	1,884	(193)	55	168	164	1,241	9.76	60%	379	23	6	2.13%	0.51%	15.26%	17.90%
1994	42,266	1,181	1,910	1,437	3,347	2,078	(202)	55	176	180	1,269	10.29	62%	457	28	7	2.40%	0.58%	14.92%	17.90%
1995	42,520	1,252	2,034	1,553	3,587	2,287	(213)	55	183	197	1,300	10.74	64%	530	33	8	2.62%	0.63%	14.64%	17.90%
1996	42,775	1,325	2,174	1,673	3,847	2,510	(225)	55	191	216	1,337	11.15	65%	604	37	9	2.83%	0.68%	14.39%	17.90%
1997	43,031	1,401	2,333	1,793	4,126	2,746	(239)	55	198	236	1,380	11.49	67%	683	42	10	3.02%	0.73%	14.14%	17.90%
1998	43,289	1,480	2,515	1,910	4,425	2,996	(254)	55	206	256	1,429	11.79	68%	768	48	12	3.22%	0.78%	13.91%	17.90%
1999	43,549	1,563	2,723	2,018	4,741	3,259	(272)	54	214	278	1,482	11.98	69%	858	53	13	3.40%	0.82%	13.67%	17.90%
2000	43,814	1,657	2,958	2,092	5,050	3,533	(291)	53	222	301	1,517	12.14	70%	970	60	15	3.63%	0.88%	13.39%	17.90%
2001	44,078	1,751	3,211	2,165	5,376	3,818	(313)	51	230	325	1,558	12.20	71%	1,082	67	16	3.83%	0.93%	13.14%	17.90%
2002	44,343	1,846	3,490	2,240	5,730	4,110	(338)	50	238	349	1,620	12.16	72%	1,194	74	18	4.01%	0.97%	12.92%	17.90%
2003	44,607	1,940	3,800	2,314	6,114	4,410	(366)	49	247	374	1,704	12.05	72%	1,306	81	20	4.17%	1.01%	12.72%	17.90%
2004	44,872	2,035	4,134	2,388	6,522	4,713	(397)	47	255	399	1,809	11.87	72%	1,418	88	21	4.32%	1.05%	12.53%	17.90%
2005	45,144	2,153	4,497	2,336	6,833	5,017	(431)	44	264	424	1,816	11.64	73%	1,573	98	24	4.53%	1.10%	12.27%	17.90%
2006	45,417	2,272	4,878	2,284	7,162	5,318	(467)	42	274	449	1,844	11.39	74%	1,729	107	26	4.72%	1.14%	12.04%	17.90%
2007	45,689	2,391	5,271	2,231	7,502	5,616	(507)	39	283	474	1,886	11.08	75%	1,884	117	28	4.89%	1.18%	11.83%	17.90%
2008	45,962	2,509	5,674	2,179	7,853	5,905	(549)	36	292	498	1,948	10.76	75%	2,039	126	31	5.04%	1.22%	11.64%	17.90%
2009	46,234	2,628	6,082	2,127	8,209	6,181	(593)	33	301	521	2,028	10.42	75%	2,195	136	33	5.18%	1.25%	11.47%	17.90%
2010	46,506	2,747	6,386	1,924	8,310	6,443	(636)	30	311	542	1,867	10.13	78%	2,350	146	35	5.30%	1.28%	11.31%	17.90%
2011	46,779	2,865	6,705	1,741	8,446	6,691	(679)	28	320	563	1,755	9.85	79%	2,505	155	38	5.42%	1.31%	11.17%	17.90%
2012	47,051	2,984	7,041	1,574	8,615	6,922	(720)	25	329	582	1,693	9.61	80%	2,661	165	40	5.53%	1.34%	11.03%	17.90%
2013	47,324	3,102	7,392	1,425	8,817	7,139	(758)	22	338	600	1,678	9.42	81%	2,816	175	42	5.63%	1.36%	10.91%	17.90%
2014	47,608	3,267	7,762	1,289	9,051	7,341	(793)	17	350	617	1,710	9.26	81%	3,046	189	46	5.78%	1.40%	10.72%	17.90%
2015	47,894	3,440	7,854	1,085	8,939	7,533	(815)	14	365	633	1,406	9.24	84%	3,259	202	49	5.87%	1.42%	10.60%	17.90%
2016	48,181	3,622	7,946	914	8,860	7,730	(837)	11	381	650	1,130	9.24	87%	3,474	215	52	5.95%	1.44%	10.51%	17.90%
2017	48,470	3,814	8,040	770	8,810	7,934	(860)	9	398	667	876	9.23	90%	3,693	229	55	6.00%	1.45%	10.44%	17.90%
2018	48,761	4,017	8,135	648	8,783	8,149	(884)	8	417	686	634	9.22	93%	3,918	243	59	6.05%	1.46%	10.39%	17.90%
2019	49,053	4,229	8,231	546	8,777	8,376	(908)	6	438	705	401	9.22	95%	4,148	257	62	6.08%	1.47%	10.35%	17.90%
2020	49,348	4,454	8,094	422	8,516	8,617	(912)	5	459	726	(101)	9.45	101%	4,393	272	66	6.11%	1.48%	10.31%	17.90%
2021	49,644	4,690	7,958	328	8,286	8,894	(915)	4	482	749	(608)	9.72	107%	4,644	288	70	6.14%	1.49%	10.28%	17.90%
2022	49,942	4,938	7,826	253	8,079	9,215	(919)	3	506	776	(1,136)	10.03	114%	4,904	304	74	6.16%	1.49%	10.25%	17.90%
2023	50,241	5,200	7,695	196	7,891	9,581	(923)	2	532	808	(1,690)	10.38	121%	5,174	321	78	6.17%	1.49%	10.24%	17.90%
2024	50,543	5,475	7,381	90	7,471	10,000	(908)	1	559	843	(2,529)	11.01	134%	5,465	339	82	6.19%	1.50%	10.21%	17.90%
2025	50,846	5,766	7,081	41	7,122	10,496	(893)	0	588	885	(3,374)	11.75	147%	5,761	357	86	6.19%	1.50%	10.21%	17.90%
2026	51,151	6,071	6,792	19	6,811	11,076	(879)	0	619	934	(4,265)	12.60	163%	6,069	376	91	6.20%	1.50%	10.20%	17.90%
2027	51,458	6,393	6,515	9	6,524	11,750	(865)	0	652	990	(5,226)	13.58	180%	6,392	396	96	6.20%	1.50%	10.20%	17.90%
2028	51,767	6,732	6,250	4	6,254	12,527	(851)	0	687	1,055	(6,273)	14.72	200%	6,732	417	101	6.20%	1.50%	10.20%	17.90%

MSRS Benefit Study
Projection of Funded Status

All new employees and employees not vested on July 1, 1993 in Social Security and Defined Contribution Plan (3% Employee, 1.5% State)
State contribution: 16.5% over 35 years

State contribution (% pay): Including Social Security and D.C. plan	16.50%
Investment earnings:	8.20%
Salary increases:	6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information			Employees not in MSRS			State contribution (% total pay)			
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio	Payroll	FICA tax (OASDI only 6.2% pay Each ee & state	DC plan 1.50% pay	FICA tax	D.C. plan	D.B. plan	TOTAL
1993	42,014	1,103	1,795	1,330	3,125	1,884	(193)	55	153	163	1,241	9.76	60%	379	23	6	2.13%	0.51%	13.86%	16.50%
1994	42,266	1,181	1,910	1,437	3,347	2,062	(202)	55	160	178	1,285	10.21	62%	457	28	7	2.40%	0.58%	13.52%	16.50%
1995	42,520	1,252	2,034	1,553	3,587	2,252	(213)	55	166	194	1,335	10.57	63%	530	33	8	2.62%	0.63%	13.24%	16.50%
1996	42,775	1,325	2,174	1,673	3,847	2,454	(225)	55	172	211	1,393	10.91	64%	604	37	9	2.83%	0.68%	12.99%	16.50%
1997	43,031	1,401	2,333	1,793	4,126	2,667	(239)	55	179	228	1,459	11.16	65%	683	42	10	3.02%	0.73%	12.74%	16.50%
1998	43,289	1,480	2,515	1,910	4,425	2,889	(254)	55	185	247	1,536	11.38	65%	768	48	12	3.22%	0.78%	12.51%	16.50%
1999	43,549	1,563	2,723	2,018	4,741	3,122	(272)	54	192	266	1,619	11.48	66%	858	53	13	3.40%	0.82%	12.27%	16.50%
2000	43,814	1,657	2,958	2,092	5,050	3,362	(291)	53	199	286	1,688	11.55	67%	970	60	15	3.63%	0.88%	11.99%	16.50%
2001	44,078	1,751	3,211	2,165	5,376	3,609	(313)	51	206	306	1,767	11.53	67%	1,082	67	16	3.83%	0.93%	11.74%	16.50%
2002	44,343	1,846	3,490	2,240	5,730	3,859	(338)	50	213	327	1,871	11.42	67%	1,194	74	18	4.01%	0.97%	11.52%	16.50%
2003	44,607	1,940	3,800	2,314	6,114	4,111	(366)	49	220	348	2,003	11.23	67%	1,306	81	20	4.17%	1.01%	11.32%	16.50%
2004	44,872	2,035	4,134	2,388	6,522	4,361	(397)	47	227	369	2,161	10.99	67%	1,418	88	21	4.32%	1.05%	11.13%	16.50%
2005	45,144	2,153	4,497	2,336	6,833	4,607	(431)	44	234	389	2,226	10.69	67%	1,573	98	24	4.53%	1.10%	10.87%	16.50%
2006	45,417	2,272	4,878	2,284	7,162	4,843	(467)	42	242	409	2,319	10.37	68%	1,729	107	26	4.72%	1.14%	10.64%	16.50%
2007	45,689	2,391	5,271	2,231	7,502	5,068	(507)	39	249	427	2,434	10.00	68%	1,884	117	28	4.89%	1.18%	10.43%	16.50%
2008	45,962	2,509	5,674	2,179	7,853	5,277	(549)	36	257	445	2,576	9.61	67%	2,039	126	31	5.04%	1.22%	10.24%	16.50%
2009	46,234	2,628	6,082	2,127	8,209	5,466	(593)	33	265	460	2,743	9.22	67%	2,195	136	33	5.18%	1.25%	10.07%	16.50%
2010	46,506	2,747	6,386	1,924	8,310	5,631	(636)	30	272	474	2,679	8.85	68%	2,350	146	35	5.30%	1.28%	9.91%	16.50%
2011	46,779	2,865	6,705	1,741	8,446	5,772	(679)	28	280	486	2,674	8.50	68%	2,505	155	38	5.42%	1.31%	9.77%	16.50%
2012	47,051	2,984	7,041	1,574	8,615	5,886	(720)	25	288	495	2,729	8.18	68%	2,661	165	40	5.53%	1.34%	9.63%	16.50%
2013	47,324	3,102	7,392	1,425	8,817	5,974	(758)	22	295	503	2,843	7.88	68%	2,816	175	42	5.63%	1.36%	9.51%	16.50%
2014	47,608	3,267	7,762	1,289	9,051	6,036	(793)	17	305	508	3,015	7.61	67%	3,046	189	46	5.78%	1.40%	9.32%	16.50%
2015	47,894	3,440	7,854	1,085	8,939	6,073	(815)	14	317	512	2,866	7.45	68%	3,259	202	49	5.87%	1.42%	9.20%	16.50%
2016	48,181	3,622	7,946	914	8,860	6,100	(837)	11	330	514	2,760	7.29	69%	3,474	215	52	5.95%	1.44%	9.11%	16.50%
2017	48,470	3,814	8,040	770	8,810	6,118	(860)	9	345	516	2,692	7.11	69%	3,693	229	55	6.00%	1.45%	9.04%	16.50%
2018	48,761	4,017	8,135	648	8,783	6,128	(884)	8	361	518	2,655	6.93	70%	3,918	243	59	6.05%	1.46%	8.99%	16.50%
2019	49,053	4,229	8,231	546	8,777	6,131	(908)	6	378	519	2,646	6.75	70%	4,148	257	62	6.08%	1.47%	8.95%	16.50%
2020	49,348	4,454	8,094	422	8,516	6,126	(912)	5	397	519	2,390	6.72	72%	4,393	272	66	6.11%	1.48%	8.91%	16.50%
2021	49,644	4,690	7,958	328	8,286	6,135	(915)	4	416	520	2,151	6.70	74%	4,644	288	70	6.14%	1.49%	8.88%	16.50%
2022	49,942	4,938	7,826	253	8,079	6,160	(919)	3	437	523	1,919	6.70	76%	4,904	304	74	6.16%	1.49%	8.85%	16.50%
2023	50,241	5,200	7,695	196	7,891	6,204	(923)	2	460	528	1,687	6.72	79%	5,174	321	78	6.17%	1.49%	8.84%	16.50%
2024	50,543	5,475	7,381	90	7,471	6,271	(908)	1	483	534	1,200	6.91	84%	5,465	339	82	6.19%	1.50%	8.81%	16.50%
2025	50,846	5,766	7,081	41	7,122	6,380	(893)	0	508	544	742	7.14	90%	5,761	357	86	6.19%	1.50%	8.81%	16.50%
2026	51,151	6,071	6,792	19	6,811	6,539	(879)	0	534	558	272	7.44	96%	6,069	376	91	6.20%	1.50%	8.80%	16.50%
2027	51,458	6,393	6,515	9	6,524	6,753	(865)	0	563	577	(229)	7.81	104%	6,392	396	96	6.20%	1.50%	8.80%	16.50%
2028	51,767	6,732	6,250	4	6,254	7,027	(851)	0	592	601	(773)	8.26	112%	6,732	417	101	6.20%	1.50%	8.80%	16.50%

MSRS
Comparison of Retirement Benefits

		Employee						
		A	B	C	D	E	F	G
Employee information	Age at hire	25	25	25	35	25	25	25
	Age at termination	35	35	45	45	62	60	60
	Salary at termination	$15,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
	Age at benefit commencement	62	62	62	62	62	60	60
	Eligible to retire early	No	No	No	No	Yes	Yes	Yes
	Vested status, July 1, 1993						Not vested	Vested
Current	**Defined Benefit Plan**							
	Employee provided benefit	6,251	10,419	11,545	5,230	7,334	6,853	6,386
	Employer provided benefit	0	0	0	0	10,299	7,825	10,294
	Total	6,251	10,419	11,545	5,230	17,633	14,678	16,680
Alternative	**Social Security**							
	Employee provided benefit	3,239	4,604	5,653	2,827	4,316	4,759	4,759
	Employer provided benefit	3,239	4,604	5,653	2,827	4,316	4,759	4,759
	Total	6,478	9,209	11,307	5,653	8,633	9,518	9,518
	Defined Contribution Plan (3% match)							
	Employee provided benefit	2,452	4,086	4,528	2,051	2,876	3,110	3,110
	Employer provided benefit	2,452	4,086	4,528	2,051	2,876	3,110	3,110
	Total	4,903	8,172	9,055	4,102	5,752	6,219	6,219
	TOTAL							
	Employee provided benefit	5,690	8,690	10,181	4,877	7,192	7,868	7,868
	Employer provided benefit	5,690	8,690	10,181	4,877	7,192	7,868	7,868
	Total	11,381	17,380	20,362	9,755	14,385	15,737	15,737
Alternative / current	Employee provided benefit	91%	83%	88%	93%	98%	115%	123%
	Employer provided benefit	N/A	N/A	N/A	N/A	70%	101%	76%
	Total	182%	167%	176%	187%	82%	107%	94%

Notes on Social Security benefits:

Retirement benefits begin at age 62 (at a reduced level).

Employee's spouse may be entitled to an additional benefit of up to 50% of amount shown.

In most situations, benefits are non-taxable.

The total Social Security benefit (for 35 years of service) was allocated to years of service on a pro-rata basis.

Employee contributions:

Current program	Defined benefit:	7.65%	
	Medicare	1.45%	*if hired after March 1986*
	Total	9.10%	
Alternative program	Defined contribution:	3.00%	
	Social Security (incl. Medicare):	7.65%	*not tax deductible*
	Total	10.65%	

(EMERGENCY)

SECOND REGULAR SESSION

ONE HUNDRED AND SIXTEENTH LEGISLATURE

Legislative Document No.

STATE OF MAINE

IN THE YEAR OF OUR LORD
NINETEEN HUNDRED AND NINETY FOUR

An Act to Create Retirement Alternatives

Emergency preamble. Whereas, Acts of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, the Legislature finds that improvements in the retirement benefits offered to state employees must be made in order to attract and retain qualified employees and address specific inequities in the current plan; and

Whereas, the details of the improvements to be made must be considered thoroughly and a comprehensive education and implementation plan must be developed; and

Whereas, a group made of representatives of employees, employers and the general public is best suited to manage this transition process, and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety; now, therefore,

Be it enacted by the People of the State of Maine as follows:

Sec. 1. Committee to Create Retirement Alternatives; creation. The Committee to Create Retirement Alternatives, referred to in this Act as "the committee," is established. The committee consists of seven members appointed by the Governor subject to review by the joint standing committee of the Legislature having jurisdiction over retirement matters and confirmation by the Legislature. Three of the seven members must be appointed from one list provided to the Governor by the unions representing employees participating in the Maine State Retirement System. Three of the members must be appointed to represent the perspective of the employer and the final member must be appointed to represent the perspective of the public who shall serve as chair. The member representing the public must have previous experience with a public or private pension system or have current working knowledge of standard pension administration and management practices.

All appointments must be made no later than 30 days following the effective date of this Act.

The first meeting of the committee must be convened by the Executive Director of the Legislative Council within 14 days after the confirmation of the committee members. Only the member of the committee appointed to represent the perspective of the public is entitled to receive per diem reimbursement in the amount of the legislative per diem and must be reimbursed for expenses upon approval of the chair and application to the Bureau of Human Resources.

Sec. 2. Duties and responsibilities. The committee shall develop a comprehensive plan for changing the retirement benefit provided to certain state employees and teachers in accordance with this Act. This recommended plan must be presented to the Governor and the Legislature by January 1, 1996 for consideration during the Second Regular Session of the 117th Legislature.

Sec. 3. Required content of legislation. The legislation prepared by the committee must provide for at least the following:

A. Membership in the Maine State Retirement System must be optional for all new employees, all part-time, seasonal and temporary employees, and all employees who had less than 10 years of creditable service on July 1, 1993. Any employee electing not to become or remain a member of the Maine State Retirement System will be required to participate in social security. The existing plan must be modified for new hires so that regardless of the new employees's age at hire, the value of the benefits earned under either choice would be equivalent. The legislation must specify the process by which an employee selects coverage, the time frame in which that choice must be made, the consequences of the individual's election, and the responsibility of both the employer and the Maine State Retirement System in informing the employee of the options.

B. A defined contribution retirement plan to supplement social security coverage must be offered for those eligible employees who opt out of the Maine State Retirement System defined benefit plan. At a minimum, the defined contribution plan must provide for the employer matching of employee contributions up to 3% of the employee's pay. The legislation must also specify who is responsible for administering the plan, what range of investment choices should be provided to the employee, what options employee's have for enrolling or changing contribution rates, when the employer contribution vests, and any limitations on in-service withdrawals or lump-sum distributions.

C. The recommended effective date must provide eligible employees a sufficient amount of time to be fully educated on their options and able to make informed choices based on their own particular circumstances.

Sec. 4. Required content of plan. The plan to be presented to the Legislature must include the following:

A. All of the legislation necessary to implement the changes required by section 3;

B. An assessment of the extent to which the recommended changes will reduce the inequities present in the current benefit structure and increase the attractiveness of available retirement options for all employees;

C. A detailed actuarial analysis on the projected costs of the changes as presented in the proposed legislation; and

D. A detailed plan and timetable for educating affected current employees and future employees on the retirement benefit options presented to them.

Sec. 5. Additional legislation. The committee may also recommend legislation as permitted by this section.

A. The committee may propose making a permanent benefit design commission to provide input and advice to the Legislature on legislation affecting retirement benefits; and

B. The committee may propose legislation eliminating the difference in retirement benefits depending upon years of service on July 1, 1993 as long as it is implemented in conjunction with providing employees with the alternative benefit option required by section 3.

Sec. 6. Staff and Assistance. The committee may contract for those professional services it requires to assist it, including an independent actuary. On the request of the committee, assistance must be provided by the Maine State Retirement System, the Bureau of Human Resources, the Department of the Attorney General, the State Planning office and any other agency of the executive department. The committee may request assistance from the Legislative Council to prepare the legislation required by this Act.

Emergency clause. In view of the emergency cited in the preamble, this Act takes effect when approved.

STATEMENT OF FACT

This bill establishes the Committee to Create Retirement Alternatives composed of seven members representing employers, employees and the public. The bill directs this committee to develop a comprehensive plan for changing the retirement benefit provided to certain state employees and teachers in accordance with their recommendations of the Committee to Study the Maine State Retirement System. The plan must include all necessary legislation, an actuarial analysis on the projected costs of the changes, and a detailed proposal and timetable for educating employees on their options. The plan must be submitted to the Legislature by January 1, 1996.

Appendix A

Statutory Authority for the Committee to Study the Maine State Retirement System

P.L. 1993, CH. 410

PART SSS

Sec. SSS-1. Committee to Study the Retirement System. The Committee to study the Retirement System, referred to in this section as "the committee," is established and consists of 4 members who must be impartial and without any direct financial interests in the Maine State Retirement System appointed as follows: Two members appointed by the Governor, one member appointed by the President of the Senate and one member to be appointed by the Speaker of the House of Representatives. Each appointing authority has power to veto the commission members chosen by the others. A member of the committee may not be a legislator, a member of the Maine State Retirement System, a person eligible to be a member of the Maine State Retirement System or a member or employee of an organization representing persons eligible to be members of the Maine State Retirement System.

Each member appointed must have previous experience with a public or private pension system or have a current working knowledge of institutional investment practices or standard pension administration and management practices.

All appointments must be made no later than 30 days following the effective date of this Act. The Executive Director of the Legislative Council must be notified by all appointing authorities once selections have been finalized.

The first meeting of the committee must be convened by the Executive Director of the Legislative Council within 14 days after the appointment of the committee. At the first meeting, the committee shall elect a chair from among its members.

1. **Expenses.** All members of the committee are entitled to receive per diem reimbursement in the amount of the legislative per diem and must be reimbursed for expenses upon approval of the Chair and application to the Executive Director of the Legislative Council.

2. **Duties and responsibilities.** The committee shall review all aspects of the Maine State Retirement System to ensure its present and future fiscal soundness, including, but not limited to:

A. The underlying causes of the unfunded liability including underfunding, benefit modifications and experience losses and methods of reducing the number of years of amortization of the unfunded liability;

B. The equity of the current benefit structure, in comparison to other pension systems offered in Maine and other States, including a comparison of benefits available to different classes of employees and the effectiveness of the current benefit structure in meeting the statutory goals of recruiting and retaining qualified employees and assisting members to make provision for their retirement years and a comparison of the benefit structure to comparable public and private sector retirement plans;

C. The affordability of the current benefit structure and the State's ability to meet its short-term and long-term benefit obligations. Review must address the system's current funding schedule and actuarial assumptions;

D. The Legislature's obligations and rights concerning benefit modifications in view of the decision of the Maine Supreme Judicial Court in *Spiller v. State*, Decision No. 6551, Law Docket No. KEN-93-191; and

E. Other aspects of the laws, operations and procedures of the system that relate to its benefit structure, financial stability and fiscal soundness that the committee considers necessary to carry out the review required in this subsection.

In comparing the Maine State Retirement System with other public and private pension systems, the committee shall make recommendations relating to the need for the Maine State Retirement System to make appropriate changes if advisable.

3. **Staff.** The committee may contract for those professionals it requires to assist it. The committee shall contract with an independent actuary to review the system. In addition, the committee may request staff assistance from the Legislative Council. On request of the committee, assistance must be provided by the Maine State Retirement System, the Department of the Attorney General, the State Planning Office and any other agency of the executive department.

4. **Report.** The committee shall report its findings and recommendations, including any necessary implementing legislation, to the Governor and to the Joint Standing Committee on Aging, Retirement and Veterans by January 15, 1994.

5. **Savings priority.** Any savings realized as a result of the study required by this section must be appropriated first to restore cost-of-living adjustments in retirement benefits for persons with less than 10 years creditable service on July 1, 1993 who have not reached normal retirement age, as defined in the Maine Revised Statutes, Title 5, section 17001.

MAINE

Appendix B

Economic Assumptions for Benefit Adequacy Models

In order to eatablish retirement income adequacy goals at various pay levels, targeted replacement ratios were developed. These targeted ratios are based on various assumptions designed to quantify the after-tax take-home pay of individuals. The calculations found in this report are based on the following:

Gross Earnings —	Equals the amount of gross wages at various sample pay levels.
Medicare Tax (Exhibit 1) —	Equals 1.45% of gross wages. Note that the Exhibits detailed in this report assume payment of these amounts by each sample employee. This applies to all Maine State employees hired after April 1, 1986.
Employee Contributions — (Exhibit 1)	Equals 7.65% of pay, which is the amount of employee contribution required under the Maine State Retirement System.
FICA Tax (Exhibit 2) —	Equals 7.65% of pay up to $57,600, which is the taxable wage base for 1993, plus 1.45% of pay over $57,600, which reflects the additional Medicare tax.
Income Taxes —	The applicable income taxes reflect the following profile, based on 1993 tax rates:

FEDERAL TAX RATE TABLE
TAXABLE INCOME — SINGLE TAXPAYER

Over	But not Over	Tax	% on Excess
$ 0	$22,100	15%	--
$22,100	$53,500	$ 3,315	28%
$53,500	--	$12,107	31%

STATE OF MAINE TAX RATE TABLE
TAXABLE INCOME — SINGLE TAXPAYER

Over	But not Over	Tax	% on Excess
$ 0	$ 8,250	2%	--
$ 8,250	$16,500	$ 165	4.5%
$16,500	$33,000	$ 536	7.0%
$33,000	--	$1,691	8.5%

- Savings — Is determined based on the assumption that an employee saves 1% of gross pay at $15,000. Each $5,000 salary increase gives an additional 1% of savings.
- Work-related Expenses — $1,000

DETAILS OF ASSUMPTIONS AND PROCEDURE USED SINGLE OR INDEPENDENT TAXPAYER

Before Retirement

Tax Deductions Assumed	Standard deduction ($3,700) or 12% of gross, if greater
Personal Exemptions	1 at $2,350

After Retirement

Tax Deductions Assumed	15%, 28%, 31% Standard deduction ($4,600) or 8% of income, if greater
Personal Exemptions	$2,350
Income Tax on Social Security	50% rule on Social Security. Base amount of $25,000. If Adjusted Gross Income plus 50% of Social Security exceeds $25,000, a tax of 1/2 of Social Security of 1/2 of the combined income in excess of the threshold amount, whichever is less, is imposed.

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Appendix C

Background Information on Social Security Benefits, Funding Policy Considerations and Alternative Plan Designs

Social Security Benefits

The Social Security system is a government sponsored system providing monthly benefits to retired and disabled workers, their eligible spouses and children and to eligible survivors of deceased workers. It also provides health coverage in the form of Medicare. The system is designed to replace, at retirement, a higher proportion of earnings for lower paid earners than for high earners. This perceived inequity is explained by assuming that higher earners are more able to provide for future retirement income needs than are workers who require their full earnings to meet their current expenses.

The cost of providing a Social Security benefit is borne by the employer and employee. Each pays into the system an amount equal to 7.65% of compensation up to a maximum annual earnings limit ($57,600 in 1993). This contribution is made up of 6.2% of compensation for the old age, survivor and disability portion of the benefits and 1.45% of compensation for Medicare coverage.

Social Security Retirement Benefits

The retirement benefit provided by Social Security is based on a career of earnings while covered by Social Security. To receive a full Social Security benefit, a worker must have a minimum of 40 credits, 35 years of covered earnings and no eligibility for a pension from employment not covered by Social Security.

Earning credits

An employee earns one credit for each $590 earned, with a maximum of four credits earned per year. This earnings requirement is indexed each year.

Covered earnings

An employee's years of covered earnings are averaged to determine the average compensation used to calculate the Social Security retirement benefit. A maximum of 35 years are used in the average. For any years of noncovered earnings, that is, years of employment not covered by Social Security, zero is used in the average. All earnings up to age 60 are indexed prior to averaging. Actual earnings after age 60 are used in the average.

Benefit formula

The Social Security benefit is calculated using a three tier formula. The benefit equals 90% of the first $356 of monthly earnings, 32% of the next $1,789 of monthly earnings plus 15% of any additional monthly earnings. These dollar amount thresholds are indexed upward each year

Eligibility for benefits

The Social Security retirement benefit is payable at age 65 to 67 depending on a worker's year of birth. Early retirement benefits are available on a reduced basis. The retirement benefits are indexed beginning at age 62.

Family benefits

When a retired worker is eligible to collect Social Security retirement benefits, members of the workers family may also be entitled to receive Social Security benefits. A non-working spouse is eligible to receive one half of the worker's retirement benefit at age 65. This percentage is reduced to 37.5% if the spouse is age 62. Eligible children may receive 50% of the benefit. There is a limit on the amount a family can receive based on one worker's earnings history. This is referred to as a maximum family benefit.

Special rules

Government pension offset: If a spouse is receiving a pension from government service while not covered by Social Security, the spouse or survivor benefit payable will be reduced by two-thirds of the government pension received by the spouse.

Windfall Elimination Provision (WEP): If a worker has substantial service with a government entity as well as sufficient service to earn a Social Security benefit, the Social Security benefit is calculated in a slightly different manner. Essentially, the government service reduces the Social Security benefit payable at retirement or at disability. If a worker has 30 or more years of substantial Social Security earnings (the 1993 limit was $10,725), the 90% factor used in determining the Social Security benefit will remain at 90% regardless of other work history. However, if there has been between 21 and 29 years, the 90% is modified. For example, a worker with 24 years of Social Security earnings will have a first factor of 60% in calculating the retirement benefit.

Social Security Survivor Benefits

The Social Security system also provides benefits at the death of the covered worker. These benefits are generally paid to the spouse and the dependent children. The eligible beneficiaries for the survivor benefits will vary depending on the worker's employment history covered by Social Security.

A key factor in determining survivor benefits is whether the worker is "currently insured" or "fully insured". Currently insured means that the worker has 6 credits in the 3 years before death. Fully insured means that the worker has sufficient credits based on the worker's age and year of death. One credit per year after age 21 until the year of the worker's death is needed to be fully insured. For example, a worker who dies in 1993 at age 50 would need 28 quarters of coverage to be fully insured for survivor benefits.

The death benefit for currently insured workers is payable to dependent children, a spouse less than age 60 only if there are children under age 18 (19, if students or 22 if disabled) or to disabled spouses. The benefit payable for fully insured workers is payable to a spouse at age 60 or a spouse at age 50 if the spouse is disabled and to children under age 18 (age 19 if full time students or age 22 if disabled).

The amount of the survivor benefit payable under Social Security is a portion of the deceased worker's retirement benefit. This will vary depending on the worker's credits and earnings history. A spouse may receive between 100% and 71.5% of the deceased worker's benefit and eligible children may receive up to 75% of the benefit. There is a maximum family benefit as well.

Social Security Disability Benefits

The Social Security system also provides benefits at the disability of the covered worker. These benefits are generally paid to the spouse and the dependent children. The number of credits required for disability benefits depends on the worker's age at disability. If a worker becomes disabled before age 24, he needs 6 credits during the three year period ending with the disability commencement. If the worker is age 24 through 30, he needs credits for half the period between age 21 and the disability. If a worker becomes disabled at age 31 or older, the same number of credits needed for retirement is needed for disability. In addition, 20 of the total credits must be earned in the 10 years prior to the disability.

Disability benefits are paid after a waiting period of five months. Social Security disability may be reduced if the worker is receiving workers compensation payments or certain other disability payments. A spouse and eligible children may also receive benefits if a worker is disabled. The percentage of the worker's benefits payable to the spouse and eligible children range from 37.5% to 50%. There is also a family maximum.

Funding Policy Considerations

Affordability

The affordability of a retirement system depends on the ability of a State to sustain the cost of the system over a long period of time; for example, the working life of the covered employees. This is generally 20 years or more — much longer than the 5- to 10-year timeframes built into many business planning models. Short-term expedients to get the State by from one year to the next, such as the sudden adoption of more "optimistic" actuarial assumptions, often reflect deep-rooted financial problems.

An assessment of the affordability of a retirement system is essentially a forward-looking exercise. The economic performance of the State will be the primary determinant of the level of benefits the system can afford to provide over the long term because the State's revenue will be the major source of funding for the benefits paid by the system. While generally secondary to the financial health of the State, the current financial condition (funded status) of the system can significantly influence affordability.

Funding Policy

Whatever the economic prospects of the State or the system's present financial condition, a sound long-term funding policy will enhance the State's ability to sustain the cost of the system over the long term. The features of such a policy will include the following:

- Be forward looking
- Be based on reasonable assumptions
- Result in rational and systematic progression of cost
- Achieve and maintain desirable level of plan assets relative to system obligations

Forward looking

A long-term (say 20-year or more) funding policy should consider all the demographic and economic factors which will have an impact on the cost of the system during that period. The demographic factors will include, among others:

- Changes in the level of membership within the system
- Pay levels of members of the system
- Life expectancy
- Retirement trends
- Distribution of the system membership by age and sex
- Patterns of employment covered by the system

The economic factors will include:

- Inflation rates
- Interest rates
- Performance level of plan assets
- Revenue patterns of State

Over a 20-year period all of these factors will have a significant impact on the ultimate cost of the system.

Based on Reasonable Assumptions

Setting assumptions for a long-term funding policy is a matter of considerable judgment. Fortunately, a sound funding policy will be self-correcting. Variations between the assumptions underlying the policy at inception and the unfolding experience of the system as time passes, often referred to as actuarial gains and losses, can generally be accommodated on a prospective basis with little shock to the system.

When developing a long-term funding policy, it is customary to prepare cost projections based on a variety of assumptions ranging from optimistic (low cost) to pessimistic (high-cost). Typically, the State will settle upon a funding policy at an intermediate level within this range with a reasonable degree of confidence that the actual costs will not fall outside the range.

Many of the factors affecting the cost of the system are related. It is important to assure internal consistency when establishing assumptions for these factors. For example, the inflation component reflected in the pay increase assumptions should be consistent with the inflation component underlying the interest rate assumptions. As another example, the aggregate membership level within the retirement system should be consistent with the projections of the State's aggregate employment level. Over the long term, inflation will have a significant effect on many of the factors affecting the cost of the system. Only by maintaining internal consistency can the impact of inflation on the cost of the system itself be properly measured.

Result in Rational and Systematic Progression of Cost

Within a sound long-term funding policy costs will unfold from year-to-year as anticipated when the funding policy was established. Typically most States prefer a pattern of costs which is relatively stable or progresses in proportion to direct compensation costs. This need not be the case, however. A sound funding policy can accommodate periodic "spikes" in cost, i.e., unusually large increases or decreases in costs at preestablished intervals, to accommodate the broader financial objectives of the State. It is important that such dramatic changes not occur randomly and do not come as a surprise to the State. Rather, they should be built into the funding policy at its inception and occur as expected.

Among the alternatives Maine may wish to consider is a "level percentage of revenue" funding policy. The obvious rationale of this policy is to align the annual cost of the system with the resources expected to be available to fund the system.

Achieve and Maintain Desirable Level of Plan Assets

While public sector retirement systems are not subject to the same minimum funding requirements imposed on the private sector by federal law, there are a number of reasons why funding makes good sense financially:

- Over the long term, funding will substantially reduce the out-of-pocket cost of the system (Strictly speaking, this savings should be assessed against the opportunity cost on amounts contributed in excess of current payout requirements.)
- The accumulation of a pool of assets enhances the benefit security of plan membership.
- Intergenerational equity is generally best achieved by a funding policy which produces a relatively stable pattern of costs over time. The typical result of such a policy is the accumulation of a pool of assets. Conversely, the existence of such a pool of assets can promote a stable cost pattern by providing a reserve to absorb unforeseen stresses on the system.

While there is widespread agreement on the desirability of prefunding, there is considerably less agreement on what should be a funding policy's target asset level and/or how such a target is determined. Public sector employers have more latitude in this regard since they are not subject to the IRS/ERISA minimum funding requirements.

Ultimately the answer to this question requires a balancing of the interests of the ultimate source of funds, the taxpayers of the State of Maine, and the beneficiaries of the System, the employees of the units participating in the system. At one extreme, an overly ambitious funding target might entail more than the State can currently afford. The result could be a tax increase or, perhaps more likely, a cutback in benefits or services. On the other hand, an inadequate funding target might lead to an underestimate of the long-term cost of the System. This could result in pressure for benefit enhancements which the State cannot afford in the long run. As with setting assumptions, the determination of a target funding level is clearly a matter of judgment.

Proposed Methodology

We believe a methodology based on the following principles will result in an effective planning and budgeting tool:

- The methodology should reflect anticipated changes in the membership of the system, including new entrants into the system, during the life of the funding policy.
- The methodology should reveal the emerging financial condition of the plan, including the relationship between plan assets and various measures of plan obligations, over the life of the funding policy.
- The methodology should anticipate changes in the provisions of the plan legislated to occur during the life of the funding policy.
- The methodology should provide an "overview" of the total cost of the System during the life of the funding policy.
- The methodology should provide the State with the flexibility to allocate total costs in a rational and systematic manner, i.e., percentage of projected compensation or State revenues, that balances the interests of the membership of the System and the tax payers.

Current Plan — Baseline Assumptions

To assist the Maine State Retirement System in assessing the long-term cost implications of the current system based on the principles outlined above, multiple projections of the assets and liabilities of the System during the period 1993 to 2013 were prepared. The principal assumptions under-lying these projections were based on input provided by the State Planning Office and included the following:

- Active plan membership will increase .6% per year
- Aggregate covered payroll will increase 5.3% per year
- 4% annual inflation rate
- 8.2% total annual return on pension plan assets

Using these assumptions, outcomes based on long-term funding levels set at 16.5% and 17.3% of pay were examined. These outcomes are set forth on pages C-9 and C-10. (Based on current funding policy, Maine's contribution for the plan year beginning July 1, 1993 is 16.5% of pay and 17.3% was calculated to achieve 100% funding of the accrued benefit obligation.)

MSRS Benefit Study
Projection of Funded Status

Current benefits

State contribution (% pay): 17.30%

Investment earnings: 8.20%
Salary increases: 6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information		
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio
1993	42,014	1,103	1,795	1,313	3,108	1,967	(197)	84	191	164	1,141	9.98	63%
1994	42,266	1,181	1,904	1,442	3,346	2,209	(207)	90	204	185	1,137	10.67	66%
1995	42,520	1,252	2,018	1,590	3,608	2,481	(219)	96	217	207	1,127	11.33	69%
1996	42,775	1,325	2,149	1,748	3,897	2,782	(232)	101	229	232	1,115	11.99	71%
1997	43,031	1,401	2,300	1,915	4,215	3,113	(246)	107	242	259	1,102	12.65	74%
1998	43,289	1,480	2,475	2,089	4,564	3,476	(263)	113	256	289	1,088	13.21	76%
1999	43,549	1,563	2,677	2,266	4,943	3,871	(282)	120	270	322	1,072	13.73	78%
2000	43,814	1,657	2,910	2,449	5,359	4,301	(303)	127	287	357	1,058	14.20	80%
2001	44,078	1,751	3,166	2,633	5,799	4,769	(327)	134	303	396	1,030	14.58	82%
2002	44,343	1,846	3,455	2,817	6,272	5,275	(354)	141	319	437	997	14.90	84%
2003	44,607	1,940	3,781	3,000	6,781	5,818	(384)	148	336	481	963	15.15	86%
2004	44,872	2,035	4,138	3,184	7,322	6,399	(418)	156	352	528	923	15.31	87%
2005	45,144	2,153	4,537	3,347	7,884	7,017	(456)	165	372	579	867	15.39	89%
2006	45,417	2,272	4,965	3,512	8,477	7,677	(499)	174	393	632	800	15.39	91%
2007	45,689	2,391	5,420	3,675	9,095	8,378	(545)	183	414	689	717	15.37	92%
2008	45,962	2,509	5,905	3,839	9,744	9,118	(596)	192	434	749	626	15.30	94%
2009	46,234	2,628	6,419	4,004	10,423	9,897	(650)	201	455	812	526	15.23	95%
2010	46,506	2,747	6,959	4,167	11,126	10,715	(708)	210	475	878	411	15.13	96%
2011	46,779	2,865	7,501	4,331	11,832	11,570	(772)	219	496	946	262	14.99	98%
2012	47,051	2,984	8,102	4,495	12,597	12,459	(840)	228	516	1,018	138	14.83	99%
2013	47,324	3,102	8,726	4,659	13,385	13,380	(909)	237	537	1,092	5	14.72	100%

MSRS Benefit Study
Projection of Funded Status

Current benefits

State contribution (% pay):	16.50%
Investment earnings:	8.20%
Salary increases:	6% +

Year	Basic information		Accumulated benefits			Assets					Funded status information		
	Actives	Payroll	Inactives	Actives	Total	Assets	Ben. paym.	Employee contr.	State contr.	Investment earnings	Unfunded acc. ben.	Assets/ Ben. paym.	Funded ratio
1993	42,014	1,103	1,795	1,313	3,108	1,967	(197)	84	182	164	1,141	9.98	63%
1994	42,266	1,181	1,904	1,442	3,346	2,200	(207)	90	195	184	1,146	10.63	66%
1995	42,520	1,252	2,018	1,590	3,608	2,462	(219)	96	207	205	1,146	11.24	68%
1996	42,775	1,325	2,149	1,748	3,897	2,750	(232)	101	219	229	1,147	11.86	71%
1997	43,031	1,401	2,300	1,915	4,215	3,067	(246)	107	231	255	1,148	12.47	73%
1998	43,289	1,480	2,475	2,089	4,564	3,415	(263)	113	244	284	1,149	12.98	75%
1999	43,549	1,563	2,677	2,266	4,943	3,793	(282)	120	258	315	1,150	13.45	77%
2000	43,814	1,657	2,910	2,449	5,359	4,204	(303)	127	273	349	1,155	13.87	78%
2001	44,078	1,751	3,166	2,633	5,799	4,650	(327)	134	289	385	1,149	14.22	80%
2002	44,343	1,846	3,455	2,817	6,272	5,131	(354)	141	305	424	1,141	14.49	82%
2003	44,607	1,940	3,781	3,000	6,781	5,647	(384)	148	320	466	1,134	14.71	83%
2004	44,872	2,035	4,138	3,184	7,322	6,197	(418)	156	336	511	1,125	14.83	85%
2005	45,144	2,153	4,537	3,347	7,884	6,782	(456)	165	355	559	1,102	14.87	86%
2006	45,417	2,272	4,965	3,512	8,477	7,405	(499)	174	375	609	1,072	14.84	87%
2007	45,689	2,391	5,420	3,675	9,095	8,065	(545)	183	395	663	1,030	14.80	89%
2008	45,962	2,509	5,905	3,839	9,744	8,760	(596)	192	414	719	984	14.70	90%
2009	46,234	2,628	6,419	4,004	10,423	9,488	(650)	201	434	777	935	14.60	91%
2010	46,506	2,747	6,959	4,167	11,126	10,250	(708)	210	453	839	876	14.48	92%
2011	46,779	2,865	7,501	4,331	11,832	11,044	(772)	219	473	902	788	14.31	93%
2012	47,051	2,984	8,102	4,495	12,597	11,867	(840)	228	492	968	730	14.13	94%
2013	47,324	3,102	8,726	4,659	13,385	12,715	(909)	237	512	1,036	670	13.99	95%

Coverage Ratio

We define "coverage ratio" at any point as the ratio of system assets to the annual rate of system benefit payments at that point. A system's coverage ratio is a rough indicator of the length of time a system's current assets alone can meet system benefit payout requirements. It is a basic indicator of a system's financial condition. When evaluating a funding policy, it is important to examine not only the size but also the pattern (increasing, decreasing) of the resulting coverage ratios over the duration of the policy.

The following table illustrates the coverage ratios resulting from each funding policy at five-year intervals during the period

Exhibit 17: MAINE STATE RETIREMENT SYSTEM COVERAGE RATIO PROJECTION

Year	Contribution Rate	
	17.3%	16.5%
1993	9.98	9.98
1998	13.21	12.98
2003	15.15	14.71
2008	15.30	14.70
2013	14.72	13.99

Both funding levels produce similar patterns with coverage ratios increasing steadily through 2005 and declining somewhat thereafter. In each case, the coverage ratio at the end of the projection period is significantly greater than at the beginning of the period. Nonetheless, the relative degree of improvement increases rather significantly as the funding level rises.

Funded Ratio

A second and perhaps more commonly used measure of the financial condition of a system is the "funded ratio." The funded ratio at any point is the ratio of system assets to the "present value of accumulated benefits" at that point. To illustrate the significance of the funded ratio, assume the Maine State Retirement System is "frozen" — that is, all System members are entitled upon retirement only to the benefits they have already earned. A funded ratio equal to 100% indicates that the current level of System assets (with future investment earnings) is just adequate to pay off all current and future retirees. As in the case of the coverage ratio, the trend as well as the size of the funded ratio is important.

The next table illustrates the funded ratios (current level of assets divided by accumulated benefit obligation) at five-year intervals.

Exhibit 18: MAINE STATE RETIREMENT SYSTEM FUNDED RATIO PROJECTION

Year	Contribution Rate	
	17.3%	16.5%
1993	63%	63%
1998	76%	75%
2003	86%	83%
2008	94%	90%
2013	100%	95%

Both funding levels produce steadily improving funded ratios throughout the entire period. Significant improvements occur in the funded ratio at the end of the period in each case, although only the 17.3% funding level reaches the 100% level.

Current Plan — Alternative Assumptions

In addition to our baseline projections, we have tested the sensitivity of the results to changes in key actuarial assumptions:

- Aggregate payroll
- Population
- Investment return

The baseline assumptions, alternative assumptions and the impact on contributions is shown below:

Assumption	Baseline	Alternative	Increase (decrease) in State Contribution to Meet Same Funding Targets
Annual payroll increase	5.3%	4.3%	No change
Annual population increase	0.6%	0.0%	+ 1% pay
Investment return in next 20 years	8.2%	7.2%	+ 2% pay

Variations in payroll increases do not have a significant impact on the State's contribution rate, since lower projected benefits are amortized on a lower projected payroll.

Lower expected population increases will produce a higher State contribution (as a percentage of pay) since the benefits of older, higher-cost employees are being funded over a smaller payroll.

Lower investment return will require higher State contributions to make up for the investment shortfall.

While our projections are based on, and affected by, several significant actuarial assumptions, we feel confident, based on this sensitivity analysis, that a State contribution ranging from 17% - 19% of pay is appropriate and will achieve a desirable level of funding at the end of 20 years.

Elements of Alternative Plan Designs

An assessment of the long-term cost implications of modifications in the current system must consider all the components of a revised system. Such a system may include one or more of the following:

- Defined benefit plan
- Social Security
- Defined contribution plan
- Retiree medical plan
- Other arrangements providing for survivor and disability benefits

Defined Benefit Plan

As noted earlier, a 17.3% of pay annual State contribution will achieve a target asset level equal to 100% of the System's "present value of accumulated benefits" (PVAB) at the end of 20 years. But the PVAB consists of two layers:

1. One layer represents the present value of benefits already earned as of 7/1/93. The cost to fund this layer over the next 20 years is 8.2% of pay. (Basically this is the cost to fund the current System shortfall at 7/1/93, approximately $1.25 billion.)
2. The second layer represents the present value of benefits yet to be earned over the next 20 years. The cost to fund this layer is 9.1% of pay.

Since the first layer represents benefits already earned, the obligation and cost to fund these benefits should serve as a starting point when considering the cost of System modifications. However, since the second figure represents the cost to fund future benefits, any modifications which affect such benefits will obviously affect this figure.

Social Security

Basically the cost to participate in the federal Social Security system is 15.30% of pay up to the Social Security Taxable Wage Base ($60,600 in 1994). This cost is divided evenly between employer and employee. Thus, the State's share of this cost would be 7.65% of pay. This cost includes two components: 6.2% for retirement, survivor and disability benefits (OASDI) and 1.45% for health insurance (Medicare). Maine employees hired after March 1986 currently participate in the Medicare portion of the federal Social Security system. Thus, the added cost to the State in joining the system would be 7.65% of covered pay for employees hired before April 1986 and 6.2% of pay for employees hired after March 1986.

Maine currently provides health insurance coverage for its employees after they retire. Most such retiree health insurance programs are "coordinated" with Medicare, picking up some portion of the retiree's medical expenses not covered under Medicare. If Maine joins the Social Security system, Medicare will begin paying a significant portion of the medical expenses of employees hired before April 1986 after they retire. The potential savings in the cost of retiree medical benefits for this segment of the population should be balanced against the 1.45% payroll tax the State incurs by joining the system.

Defined Contribution Plan

Considered as a percentage of pay, the cost of a defined contribution plan can usually be determined directly by reference to the terms of the plan itself. Most defined contribution plans define benefits as an annual contribution equal to a percentage of pay of each covered employee. Contributions typically fall into two categories: automatic (nonelective contributions) and matching (elective contributions). Under a matching contribution arrangement, the employer agrees to match a percentage, usually about 50%, of the employee's own contribution to the plan. The cost to the plan sponsor under this type of arrangement will vary depending upon the level of employee participation. Under the automatic contribution arrangement, the plan sponsor contributes a specified percentage of pay regardless of the level of employee participation. This percentage may vary by age or service level. In such cases, the cost to the plan sponsor is approximately equal to the contribution level specified by the terms of the plan.

Retiree Medical Plan

When assessing and comparing the long-term cost implications of alternative retirement programs, cost projections should be developed on a comparable basis. This is especially true considering the variety of programs available to the State and variations in the customary practice of funding such programs. A comparison of the cost of the State's retiree medical program with the cost to join the Medicare programs is a case in point. The former program may be financed on a current disbursement basis, while the latter is level-funded through the 1.45% payroll tax. Such a comparison is not likely to be indicative of the relative long-term cost of the plans since the cost of the former is likely to increase significantly over time while the cost of the latter, in the absence of legislation, will remain constant as a percentage of covered pay.

Other Arrangements

When assessing the long-term cost implications of alternative programs, their impact on other programs offered by the State should be considered. For example, the Social Security system provides significant survivor and disability benefits. If the State is currently providing group life insurance or long-term disability insurance for its employees, the design of these programs should be coordinated with the survivor and disability benefits provided by the Social Security system. Typically, such coordination with Social Security disability and survivor benefits results in cost savings of 0.6% and 0.8% of pay, respectively.