MAINE STATE RETIREMENT SYSTEM

PROPOSAL FOR DESIGNING A PROGRAM
TO COORDINATE WITH THE
FEDERAL SOCIAL SECURITY SYSTEM

January 14, 1986

Tillinghast

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TILLINGHAST, NELSON & WARREN, INC.
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January 14, 1986

Ms. Roberta M. Weil
Executive Director
Maine State Retirement System
State House Station #46
Augusta, Maine 04333

Dear Ms. Weil:

We are pleased to present the enclosed final report which proposes a model retirement program for the State of Maine designed to coordinate benefits with those provided by the federal Social Security system. This report presents the conclusions and recommendations reached after several meetings with you and the Board of Trustees for the Maine State Retirement System and documents the methodology used to evaluate and compare alternative options.

We have made a special effort to present our results as concisely as possible with a minimum amount of technical discussion. We hope that you will find this report helpful as a ready source of information concerning your current and proposed retirement program.

Sincerely,

TILLINGHAST, NELSON & WARREN, INC.

J. Russell Southworth

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Enclosure

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I. INTRODUCTION

Established in 1947, the Maine State Retirement System (MSRS) covers approximately 14,000 employees of the State, 18,000 teachers, and 8,500 employees of local political districts. Membership in the System is mandatory for State employees, teachers and employees of districts which do not participate in Social Security. Those districts which participate in Social Security have an option to join the system if they so desire, and many have done so. Special plans exist for certain employee groups such as firemen, policemen, forest rangers, prison guards, and judicial employees. In addition, as allowed by the MSRS statute, some participating districts have elected to retain the plan provisions in effect when they first joined the System rather than updating their plans in accordance with modifications made to the System's benefit provisions. The level of benefits provided to employees who are covered under the System is therefore not uniform for all groups and districts. The System does require contributions from covered employees, generally equal to 6.5% of salary.

Three principal concerns have provided the impetus for this study, which has been undertaken by the Board of Trustees of the MSRS with the advice and assistance of the consulting firm of Tillinghast, Nelson & Warren, Inc. The first concern is that districts which participate both in Social Security and the MSRS may be providing unnecessarily high benefit levels at excessive cost to both the districts and their employees (who must pay Social Security tax as well as MSRS contributions). The second issue is the strong possibility that Social Security coverage for state employees may eventually become mandatory, which would extend the same problem beyond the district level to all state employees and teachers (who are not now covered by Social Security). Finally, an important concern has been the lack of uniformity in benefits provided by the various districts, which leads to increased administrative complexity (and therefore cost) and impedes efforts to achieve portability in benefits for members who transfer between districts.

Accordingly, this study was initiated with the primary objective of designing a model state retirement program which would effectively coordinate benefits with the Social Security system. Such a program could be offered uniformly to all districts covered by Social Security and, eventually, to state employees and teachers should Social Security coverage become mandatory for these groups.

The guidelines established by the Board of Trustees for the design of this program were as follows:

- The program, together with Social Security, should provide benefits to covered employees which are at least equivalent to those now provided by the Maine State Retirement System.

- The program should be designed for new employees only.

- The program should be designed in such a way as to facilitate benefit portability for employees who transfer between districts.

- The program should be simple enough to administer easily and efficiently.

- The program should be designed to comply with IRS rules applicable to qualified plans in order to take advantage of Section 414(h) of the Tax Code to tax-shelter any required employee contributions under the program.

This report presents the proposed model program which was designed with these guidelines in mind. The report will present background information on the MSRS, discuss the methodology used in developing the proposed program, and present detailed benefit and cost analysis for the current and proposed programs. The remainder of this report is organized into the following sections:

II.	Overview of the Current Program
III.	Methodology for Designing the Proposed Program
IV.	Description of the Proposed Program
V.	Cost Analysis
VI.	Transition Provisions
VII.	Summary

The appendices of this report contain exhibits which are referenced in the text.

II. OVERVIEW OF THE CURRENT PROGRAM

The Maine State Retirement System provides covered employees with income benefits upon retirement or disability and provides benefits to the surviving spouses, children and parents of covered employees who die while in active service.

Retirement Benefits

Members of the MSRS are eligible to retire with full retirement benefits at or after age 60. More liberal requirements apply to employees in certain special categories (such as policemen or firemen) who may retire at earlier ages after completing a specified number of years of service (generally 20 to 25). Benefits are payable for life, and are computed using a formula based on years of service and the average of the employee's highest earnings for any three years of covered employment.

The formula to determine an employee's normal annual retirement income from the System is:

2% x Average 3-Year Earnings x Service

Thus, a 25-year employee of the State will receive a benefit equal to 50% of average earnings for his three highest years. Once retired, members qualify for an automatic annual cost-of-living adjustment up to a maximum of 4% per year.

Members who have completed 25 years of service or more may retire before age 60 and receive a benefit calculated using the formula above, but reduced to reflect the fact that benefits are commencing early and will therefore be payable for a longer period of time. The applicable reduction factors are 2.4% per year from age 60 to 55, 2.0% from age 55 to 50, and 1.6% from age 50 to 45. Thus, an employee who retires at age 45 with 25 years of service will have his benefit reduced by 30%. His retirement income from the System will therefore equal 35% (70% x 50%) of average earnings for his three highest years.

Disability Retirement

Members who become disabled while in service before normal retirement age (age 60 in most cases) are eligible for disability income from the System equal to 66-2/3% of Average 3-Year Earnings or, if lower, 80% of Average 3-Year Earnings less Worker's Compensation and Social Security Disability payments. Benefits are adjusted annually to reflect cost-of-living increases up to 4% per year. During the period of disability, the member continues to accrue retirement income, which eventually becomes payable when it exceeds the member's disability allowance or, if earlier, 10 years subsequent to normal retirement age (generally age 70). For purposes of determining eligibility for benefits, disability is defined as inability to perform the duties of his position as a result of a physical or mental impairment. After five years, however, the requirements become more stringent; the member must then be unable to engage in any substantially gainful activity for which he is qualified by training, education, or experience.

Survivor Benefits

If a member is survived by a spouse with dependent children, a monthly income benefit will be paid to the spouse and children as long as they are in the spouse's care. The amount of the benefit will be $150 per month for the spouse plus $150 for one child, $225 for two children, and $300 for three or more children. The spouse of a member who dies with 10 or more years of service but without dependent children will qualify for a life annuity of $150 per month. If the member had under 10 years of service and is survived only by a spouse, the spouse will receive a life annuity of $150 per month beginning at age 60. In the absence of a spouse or children, a surviving parent qualifies for a life annuity of $150 per month beginning no earlier than age 60. In any event, the minimum benefit equals a refund of the member's contributions, with interest.

Vesting

Members who terminate employment before eligibility for retirement but after completing 10 years of service will qualify for a deferred benefit beginning at age 60, calculated using the normal retirement formula. In any event, members qualify for a minimum benefit equal to their own contributions with credited interest.

Employee Contributions

Most employees are required to contribute 6.5% of salary in order to participate in the System. By withdrawing contributions, an employee will forfeit any vested benefits which he may have accrued.

III. METHODOLOGY FOR DESIGNING THE PROPOSED PROGRAM

The methodology for developing the proposed model program consisted of five principal steps:

1. Selection of the type of calculation formula to be used in determining annual retirement income.
2. Evaluation of the benefit levels produced by alternative calculation formulas.
3. Development of ancillary benefit provisions consistent with IRS requirements and, where possible, current practice.
4. Evaluation of the costs associated with alternative calculation formulas relative to the cost of the current program.
5. Development of transition provisions to facilitate administration of the new program.

Each of these steps will be discussed below.

1. Selection of Formula Type

The large majority of privately sponsored retirement plans are explicitly coordinated (or integrated) with the federal Social Security system in some fashion. Such plans are designed to compensate, in part, for the fact that the Social Security System provides proportionately higher benefits for employees in lower income brackets. To illustrate this point, we can examine the average replacement income provided by Social Security currently for workers retiring at age 65 at various earnings levels.

Pay at Retirement	Estimated Monthly Social Security Benefit	Replacement Percentage
$10,000	$401	48%
15,000	526	42
20,000	634	38
30,000	696	28
40,000	717	22

Privately sponsored plans which are integrated with Social Security typically provide larger benefits (as a percentage of pay) for higher income employees than for lower income employees and thereby narrow the sizable gap in replacement levels which would otherwise exist. There are a variety of ways to accomplish this integration. Some plans recognize Social Security benefits <u>indirectly</u> by stepping up the rate of benefit accrual at higher salary ranges. Such plans -- referred to as <u>step rate</u> plans -- will include a formula of the form:

X% of Salary <u>plus</u> Y% of Excess Salary

where Excess Salary represents the portion of an employee's salary above a certain earnings base. Alternatively, many plans reflect Social Security benefits <u>directly</u> by incorporating an offset equal to a percentage of the employee's Social Security benefit. These plans -- referred to as <u>offset</u> plans -- include a calculation formula of the form:

X% of Salary <u>less</u> Y% of Social Security

Offset plans have become more prevalent because they automatically adjust to changes in Social Security benefit levels, and we are therefore recommending a formula of this type for the model program. Because employees bear half the cost of the Social Security system through payroll taxes, we further recommend that the amount of the offset be limited to 50% of the Social Security benefit. Moreover, we are proposing that the employee's Social Security benefit for purposes of determining the offset be calculated using only his earnings while a member of both the MSRS and the Social Security system, even though his actual Social Security benefit may be higher because of prior covered employment. This approach appears to be the most equitable and is in compliance with existing Internal Revenue regulations.

A further complication in designing the proposed program is that the normal retirement age under the MSRS is age 60, whereas retirement benefits from the Social Security system begin no earlier than age 62. Accordingly, we recommend that the offset for Social Security be delayed until the employee reaches age 62, except in the case of disability where the Social Security offset would commence immediately.

2. Evaluation of Benefit Levels

Having established the basic form of the calculation formula and the magnitude of the Social Security offset, our next step was to test alternative salary coefficients for a career employee. Our objective, of course, was to develop a formula which will produce total benefit levels (inclusive of Social Security) at least equivalent to those provided by the current plan. It is worth noting here that the current plan bases benefits on average salary for the employee's three highest years and we see no reason to modify this definition of average salary in the future. Further, since a 25-year employee is now eligible for retirement under the current program, we decided to represent a career employee as one who is retiring after 25 years of service for purposes of testing alternative formulas. Our evaluation considered employees earning from $10,000 to $40,000 annually (in current dollars), and the formula which we found to best achieve our objectives is as follows:

1-2/3% x Average 3-Year Salary x Years of Service

less

50% x Social Security

Section IV of this report will describe the results of our benefit analysis in greater detail.

3. Development of Ancillary Benefit Provisions

With respect to ancillary (non-retirement) benefits, the most important recommended departure from existing practice is in the area of death benefits. The current provisions for spouse, children, and parents benefits are not sufficient to meet IRS requirements applicable to qualified plans, as mandated by the Employee Retirement Income Security Act of 1974 (ERISA) and the recent Retirement Equity Act (REA). Accordingly, we are recommending that the model program include a surviving spouse benefit for all active, vested employees. This benefit, to be described in Section IV, will be in compliance with the ERISA and REA requirements.

With respect to disability benefits, we are suggesting an approach similar to current practice, with minor modification. Under the existing plan, the basic disability benefit equals two-thirds of Average 3-Year Salary. The proposed plan would retain this targeted total benefit level, but would offset for Social Security benefits to the extent allowable under IRS integration rules. Under these rules, it appears that the offset may have to be restricted to 64% of the employee's Social Security Disability benefit. If this is the case, a disability benefit from the plan of 60% of 3-Year Average Salary less 64% of Social Security would, in conjunction with the employee's Social Security benefit, at least equal the current plan benefit. The proposed program would also include a provision for continued accrual of pension during periods of disability.

We are proposing that current provisions for vesting and early retirement be retained in the proposed program. In order for the plan to meet IRS qualification standards, however, vested employees who withdraw their own contributions to the plan would retain rights to their accrued retirement benefit <u>less</u> the benefit equivalent of their withdrawn contributions. Under the current program, employees who withdraw contributions forfeit all benefits from the plan.

4. <u>Evaluation of Costs</u>

Since the proposed program is intended to apply primarily to new employees, our cost analysis was performed using a demographic profile based on actual new entrants into the System over the last three years. Separate analyses were performed for State employees, teachers, and participating districts. (Appendices B-1, B-2, and B-3 provide data summaries which were used in performing our analysis.) Section V of this report contains a detailed explanation of our cost analysis and the underlying actuarial assumptions used in projecting costs.

5. <u>Development of Transition Provisions</u>

Although the model program is being designed for new entrants into the System, it is possible that some districts may wish to cover existing employees and possibly grant past service credit to these employees under the new program. In addition, it is possible that certain districts may wish to provide an alternative level of benefits. Although these variations run counter to the objective of uniformity, we have designed a program which can be sufficiently flexible to accommodate these choices without creating excessive and costly administrative burdens. Section VI of this report will address this issue.

IV. DESCRIPTION OF THE PROPOSED PROGRAM

In this section, we will describe, in detail, the proposed provisions of the model program and provide comparative benefit illustrations for career employees.

Retirement Benefits

Members of the proposed program will be eligible for full retirement benefits at age 60. The annual benefit payable at that time will be calculated as:

1-2/3% x Average 3-Year Earnings x Service

Beginning at age 62, the benefit from the program will be reduced by 50% of the employee's Social Security benefit based on his earnings while covered under the program and Social Security.

Exhibit IV-1 on the following page illustrates the level of benefits from the proposed plan and Social Security relative to those provided by the current program for employees in various salary ranges retiring at age 60 with 25 years of service. As shown, the current non-integrated program provides a uniform level of benefits as a percentage of pay across all salary levels. In contrast, the new program, inclusive of Social Security, will produce higher levels of replacement at the lower income ranges because of the weighting inherent in the Social Security system. Replacement levels from the proposed plan after age 62 (column 10) are greater or equal to those produced by the current program (column 4) for all sample employees shown.

MAINE STATE RETIREMENT SYSTEM

COMPARISON OF RETIREMENT BENEFITS UNDER CURRENT AND PROPOSED PROGRAMS

Employee Retiring at Age 60 With 25 Years of Service -- Full Social Security Benefits at Age 65

Final Year's Salary	3-Year Average Salary	Current Program		Proposed Program -- to Age 62		Proposed Program -- After Age 62			
		Plan Benefit	%	Plan Benefit	%	Plan Benefit	Social Security	Total	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$10,000	$ 9,240	$ 4,621	46%	$ 3,850	39%	$ 1,840	$4,020	$ 5,860	59%
12,500	11,550	5,776	46	4,813	39	2,508	4,608	7,116	57
15,000	13,861	6,930	46	5,776	39	3,189	5,172	8,361	56
17,500	16,171	8,085	46	6,738	39	3,930	5,616	9,546	55
20,000	18,481	9,240	46	7,700	39	4,760	5,880	10,640	53
25,000	23,101	11,551	46	9,626	39	6,475	6,300	12,775	51
30,000	27,721	13,861	46	11,550	39	8,274	6,552	14,826	49
35,000	32,342	16,171	46	13,476	39	10,110	6,732	16,842	48
40,000	36,961	18,481	46	15,400	39	12,010	6,780	18,790	47

1. Current Program Benefit Formula: 2% x Service x Final 3-Year Average Salary
2. Proposed Program Benefit Formula: 1-2/3% x Service x Final 3-Year Average Salary - 50% x Social Security
3. Salaries are assumed to increase at 5.5% per year

MAINE STATE RETIREMENT SYSTEM

COMPARISON OF RETIREMENT BENEFITS UNDER CURRENT AND PROPOSED PROGRAMS

Employee Retiring at Age 60 With 25 Years of Service -- Full Social Security Benefits at Age 67

		Current Program		Proposed Program -- to Age 62		Proposed Program -- After Age 62			
Final Year's Salary (1)	3-Year Average Salary (2)	Plan Benefit (3)	% (4)	Plan Benefit (5)	% (6)	Plan Benefit (7)	Social Security (8)	Total (9)	% (10)
$10,000	$ 9,240	$ 4,621	46%	$ 3,850	39%	$ 2,092	$3,516	$ 5,608	56%
12,500	11,550	5,776	46	4,813	39	2,796	4,032	6,828	55
15,000	13,861	6,930	46	5,776	39	3,513	4,524	8,037	54
17,500	16,171	8,085	46	6,738	39	4,284	4,908	9,192	53
20,000	18,481	9,240	46	7,700	39	5,126	5,148	10,274	51
25,000	23,101	11,551	46	9,626	39	6,871	5,508	12,379	50
30,000	27,721	13,861	46	11,550	39	8,682	5,736	14,418	48
35,000	32,342	16,171	46	13,476	39	10,530	5,892	16,422	47
40,000	36,961	18,481	46	15,400	39	12,430	5,940	18,370	46

1.Current Program Benefit Formula: 2% x Service x Final 3-Year Average Salary

2.Proposed Program Benefit Formula: 1-2/3% x Service x Final 3-Year Average Salary - 50% x Social Security

3.Salaries are assumed to increase at 5.5% per year

Exhibit IV-1 is based upon the Social Security law now in effect for retirees born in 1937 or earlier, under which Social Security benefits at age 62 are calculated as 80% of the benefit payable at normal retirement age 65. Legislation enacted in 1983 will ultimately postpone normal retirement age under the system to age 67 for individuals born in 1960 or later. As a result, benefits payable at age 62 will eventually be calculated as 70% of the benefit payable at normal retirement age rather than 80%. As shown by comparing columns 10 and 4 on Exhibit IV-2, the new program will still produce benefits at least equivalent to those produced by the current program for the sample group. It should be noted that until Social Security commences at age 62, the new program provides a slightly lower level of income (column 6) than the existing program. For information purposes, Appendix C provides comparative benefit illustrations for 40-year career employees.

As under the current program, all benefits from the State System will be adjusted for inflation up to a maximum annual increase of 4%. Social Security benefits are fully indexed with no annual percentage maximum.

Under the proposed program, members who have completed 25 years of service or more may retire before age 60 with a reduced benefit. The applicable reduction factors will be the same as those used at present. The 50% offset for Social Security benefits will not occur until the retiree attains age 62.

Disability Retirement

Under the proposed program, members who become disabled while in service before normal retirement age will be eligible for disability income from the System equal to 60% of Average 3-Year Earnings less 64% of Social Security. Benefits will be adjusted to reflect cost-of-living increases up to 4% per year. As under the current program, the member will continue to accrue pension during the period of disability, using imputed indexed earnings. This pension benefit would become payable at age 62, at which time the member's normal retirement allowance will begin.

Survivor Benefits

To comply with the ERISA and REA requirements applicable to qualified plans, the proposed plan would incorporate a surviving spouse benefit for all vested employees. For spouses of employees who die after completing 10 years of service, the program would provide an immediate lifetime annuity of equivalent value to 50% of the benefit which would have been payable had the member retired immediately prior to death and elected a 50% joint and survivor annuity.

Vesting

Consistent with current practice, the proposed program would provide full vesting after 10 years of service. Terminated vested employees would be eligible for deferred retirement benefits beginning at age 60.

Employee Contributions

Since members of the new program would be paying Social Security taxes (7.15% of covered earnings for 1986), it may be difficult to require employees to make substantial additional contributions to the State program. However, if costs of the proposed program prove to be unduly burdensome to the State, a modest employee contribution may be necessary. The next section of this report addresses the cost implications of the proposed program.

* * * * * *

For reference purposes, Appendix A contains a summary of the present and proposed programs. Appendix D contains detailed illustrations of calculation procedures.

V. COST ANALYSIS

Our analysis of the cost of the proposed program consisted of four parts:

- Evaluation of the cost of the current program
- Review of actuarial assumptions
- Evaluation of the cost of the proposed program
- Analysis of the sensitivity of costs to changes in benefit parameters

Each of these will be discussed below.

Current Program Costs

As reported in the most recent actuarial report, the cost to the State of the existing program is now over 15% of payroll for State employees and over 16% of payroll for teachers. Exhibit V-1 on the following page provides a breakdown of this cost between future service cost and payments for unfunded past service liabilities (past service cost). As shown, past service cost accounts for almost two-thirds of the State's cost of maintaining the existing retirement program.

Since the new program would apply only prospectively, a proper cost comparison necessitates an evaluation of the cost of the current program for new entrants only. Our evaluation of this cost is shown in the last three columns of Exhibit V-1, based on the current set of actuarial assumptions. As shown, costs for new entrants alone are estimated to be below 4% of payroll based on current actuarial assumptions.

MAINE STATE RETIREMENT SYSTEM

COSTS OF THE CURRENT PROGRAM

BASED UPON EXISTING ACTUARIAL ASSUMPTIONS

	Costs Reported in 6/30/84 Valuation Report			Costs for New Entrants, Future Service Only		
	State	Teachers	Districts*	State	Teachers	Districts*
1. Retirement and Death Benefits						
Future Service Cost	4.04%	4.42%	N/A	2.07%	2.22%	2.53%
Past Service Cost	9.66	10.82	N/A	n/a	n/a	n/a
Total	13.70	15.24	N/A	2.07	2.22	2.53
2. Disability Benefits	1.48	1.58	N/A	1.20	1.20	1.20
3. Total Cost: (1) + (2)	15.18%	16.82%	N/A	3.27%	3.42%	3.73%

N/A = Not Available.

n/a = Not Applicable.

*Total Costs for the various classifications of Districts range from 7.14% for School Districts to 16.30% for Cities and Towns.

Review of Actuarial Assumptions

Following a complete review of the current set of actuarial assumptions in light of actual experience, we have concluded that certain modifications are appropriate in order to obtain a truer picture of pension cost for the current and proposed programs. Specifically, these modifications are:

- The assumed retirement age of 65 now used appears to result in an understatement of costs, since the average retirement age in recent years has been closer to 62 for State employees and 60 for teachers.

- The assumed rate of salary increase of 5-1/2% appears to be relatively low, thereby understating costs to an extent. Based upon actual salary experience, we are recommending that an allowance for merit and promotion be added to the 5-1/2% salary progression rate.

- The assumed rates of turnover appear to be low relative to actual experience in the early years of employment. We have therefore constructed revised turnover tables, separate for State employees, teachers, and district employees.

Exhibit V-2 on the following page shows a comparison of the current and revised actuarial assumptions.

MAINE STATE RETIREMENT SYSTEM

SUMMARY OF CURRENT AND REVISED ACTUARIAL ASSUMPTIONS

		Current Assumptions	Proposed Assumptions
1.	Rate of Investment Return	8-1/2% per year.	Same.
2.	Rate of Salary Increase	5-1/2% per year	5-1/2% per year plus allowance for merit and promotion at earlier ages as follows: (see table below)
3.	Retirement Age	65	62 for State and Participating Districts, 60 for teachers.
4.	Rates of Termination	(see table below)	(see table below)
5.	Rate of Inflation	Not specified, but at least 4%.	4-1/2%
6.	Mortality Rates	1971 Group Annuity Tables	1984 Unisex Pension Table
7.	Funding Method	Entry Age Normal - Frozen Initial Liability	Entry Age Normal - Frozen Initial Liability

2. Rate of Salary Increase — Proposed Assumptions:

	State & Teachers	Participating Districts
To age 27	4%	3-1/2%
27 - 32	3%	2%
32 - 37	2%	1%

4. Rates of Termination — Current Assumptions:

Age	Rate (all causes)
20	8%
30	7
40	6
50	5
60	5

4. Rates of Termination — Proposed Assumptions:

Completed Years of Service	Rates State	Teachers	District
0	25%	25%	20%
1	15	20	15
2	12	15	15
3	10	10	15
4	10	5	15
5+	3	3	5

Cost of Proposed Program

As shown by comparing columns (4) and (8) on Exhibit V-3, the revised set of actuarial assumptions, which we believe present a truer picture of the costs of the current program, result in an increase in cost to the State from 3.46% of payroll to 5.16% of payroll for new entrants. Using these assumptions, the proposed plan is projected to cost the State 5.70% of payroll (column 12, line 3) assuming no employee contributions. When Social Security tax is added, the total cost to the State of the new program is projected to be 12.85% of payroll. Of this cost, roughly 1.35% of payroll represents Hospital Insurance (Medicare) taxes. Even if we deduct this percentage from the total cost of 12.85%, the cost of retirement and disability benefits under the new program will be roughly 11.50%, as compared to costs under the current program of 5.16% for new entrants. The reason for this increase is that the Social Security tax rate incorporates a substantial past service component. It is worth noting, however, that projected costs of the proposed program for new entrants will still fall below the State's current contribution rate of 15% to 16% of payroll.

Exhibit V-3

MAINE STATE RETIREMENT SYSTEM

COMPARISON OF COSTS UNDER CURRENT AND PROPOSED PROGRAMS

APPLICABLE TO NEW ENTRANTS FOR FUTURE SERVICE ONLY

(Costs Expressed as a Percentage of Payroll)

	Current Plan, Current Assumptions				Current Plan, Revised Assumptions				Proposed Plan, Revised Assumptions			
	State (1)	Teachers (2)	Districts (3)	Total (4)	State (5)	Teachers (6)	Districts (7)	Total (8)	State (9)	Teachers (10)	Districts (11)	Total (12)
1. Total Cost of the Plan												
-- Retirement and Death Benefits	8.57%	8.72%	9.03%	8.76%	10.29%	11.67%	9.30%	10.46%	5.04%	6.12%	3.87%	5.05%
-- Disability Benefits	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.65	.65	.65	.65
-- Total Cost	9.77	9.92	10.23	9.96	11.49	12.87	10.50	11.66	5.69	6.77	4.52	5.70
2. Employee Contributions	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	--	--	--	--
3. Net Plan Cost to the State	3.27	3.42	3.73	3.46	4.99	6.37	4.00	5.16	5.69	6.77	4.52	5.70
4. Social Security Tax	--	--	--	--	--	--	--	--	7.15*	7.15*	7.15*	7.15*
5. Total Cost of the Program to the State (3) + (4)	3.27%	3.42%	3.73%	3.46%	4.99%	6.37%	4.00%	5.16%	12.84%	13.92%	11.67%	12.85%

*Includes 1.35% for Hospital Insurance (Medicare) taxes.

Current Plan
2% of Final 3-Year Average Salary for each year of service

Proposed Plan
1-2/3% of Final 3-Year Average Salary for each year of service
less
50% of Primary Social Security (based on earnings while a plan member)

Sensitivity of Costs to Variations in Benefit Parameters

To enable the State to evaluate the costs associated with alternative plan provisions, we have developed the following relationships:

- In the proposed benefit formula, each .1% increase will raise costs by .46% of payroll. For example, if the proposed formula were 1.77% of Final 3-Year Average Salary less 50% of Social Security, the cost of the proposed plan (excluding Social Security) would be 6.16% of payroll (5.70% + .46%).

- If employees contribute to the proposed program (in addition to their Social Security taxes) the cost to the State will decrease by .85% of payroll for each 1% of payroll contributed by employees.

VI. TRANSITION PROVISIONS AND OPTIONAL BENEFIT LEVEL

For administrative ease, and to facilitate benefit portability, we are recommending that a single, uniform contribution rate for the new program be determined each year based upon the pooled experience for all participating districts. We recognize, however, that some districts may wish to depart from the basic model in either of two respects:

- By covering existing employees (in addition to new employees) or providing past service credits under the new program.
- By providing a higher level of benefit accrual, such as 2% rather than 1-2/3% of average salary for each year of service.

In order to accommodate variations such as these without creating the need to perform separate actuarial valuations for the districts on an ongoing basis, we have developed the recommended procedures described below.

For a district which decides to cover existing employees or provide past service credits under the new program, we are suggesting that a special one-time actuarial valuation of incremental liabilities be performed upon entrance into the program. The district will then be charged for these incremental liabilities through a series of fixed annual amortization payments over a specified time period. Once established, the schedule of amortization payments will not change. Any actuarial gains or losses will be pooled with the experience of the program as a whole.

With respect to a district which elects a higher rate of benefit accrual, we are suggesting that any additional cost be borne by employees. For example, an increase in the accrual rate to 2% would require employee contributions of roughly 1.8%. A district which decides to offer a 2% benefit accrual rate would therefore be charged the uniform contribution rate applicable to all districts and its employees would contribute an additional 1.8% of pay.

VII. SUMMARY

The model plan being proposed is an offset-type plan which, in conjunction with Social Security, can be expected to produce benefit levels at least equivalent to those now provided by the MSRS. The cost of the proposed plan to the State (including Social Security) is expected to be much greater for new entrants than the current program (without Social Security). However, anticipated costs are less than the State's current contribution rate of over 15%.

The model plan could be extended to districts which participate in Social Security, and a uniform contribution rate could be charged to these districts calculated based upon the pooled experience of all districts combined. If benefit options are elected by a district at the outset, a one-time calculation of incremental liabilities could be performed, and the district would be charged a fixed annual amortization payment to fund these additional liabilities. Any required employee contributions to the new program could be tax-sheltered under Section 414(h) of the Tax Code.

Appendix A

MAINE STATE RETIREMENT SYSTEM

COMPARATIVE SUMMARY OF PRESENT AND PROPOSED PROGRAMS

PROVISION	PRESENT PLAN	PROPOSED PLAN
Normal Retirement		
-- Eligibility	Age 60 except for special classifications such as policemen and firemen who can retire after a specified number of years of service (generally 20 to 25 years) and other special groups who can retire at ages 50 to 55 with 20 to 25 years of service.	Same.
-- Benefit	2% of Final 3-Year Average Salary multiplied by years of service.	To Age 62: 1-2/3% of Final 3-Year Average Salary multiplied by years of service. After Age 62: 1-2/3% of Final 3-Year Average Salary multiplied by years of service less 50% of Primary Social Security (based on earnings while covered under the Maine system only and increased by CPI from benefit commencement to age 62 with a maximum of 4% per year).
Early Retirement		
--Eligibility	25 years of service, except for special classifications which have no early retirement provision.	Same.
-- Benefit	Calculated using normal retirement benefit formula, reduced by 2.4%/year from age 60 to 55; 2.0% from 55 to 50; and 1.6% from 50 to 45.	Same, with Social Security offset beginning at age 62.
Disability Retirement		
-- Eligibility	Upon disability at any time while in service before normal retirement agė.	Same.
-- Benefit	The smaller of: o 66-2/3% of Final 3-Year Average Salary o 80% of Final 3-Year Average Salary less 100% of Primary Social Security Normal retirement benefit becomes payable when it exceeds the disability benefit, or, if earlier, 10 years subsequent to normal retirement age. The normal retirement benefit is determined by crediting service and indexing earnings by cost of living adjustments over the period of disability.	60% of Final 3-Year Average Salary less 64% of Disability Social Security. The normal retirement benefit becomes payable at age 62. The normal retirement benefit is calculated by crediting service over the period of disability.

PROVISION	PRESENT PLAN	PROPOSED PLAN
Vesting		
-- Eligibility	10 years of service.	Same.
-- Benefit	Calculated using normal retirement benefit formula, with payment deferred to age 60. Minimum of refund of member contributions with interest.	Same.
Survivor Benefits		
-- Eligibility	Death while in active service or on disability.	10 years of service.
-- Benefit	Refund of employee contributions or: • $150 per month to the spouse for life if the member had 10 years of service, or • $150 per month to the spouse plus up to $300 per month for children as long as spouse has children in his or her care. • $150 per month beginning at age 60 if member had less than 10 years of service at death.	A lifetime annuity to the surviving spouse equal to 50% of the benefit which would have been payable had the member retired immediately prior to death and elected a 50% joint and survivor annuity. Minimum of refund of any employee contributions.
Cost-of-Living Adjustments		
-- Eligibility	All retirees.	Same.
-- Benefit	Benefits adjusted annually for increases in the Consumer Price Index up to 4% per year.	Same.
Employee Contributions	Generally, 6.5% of salary.	To be determined.

MAINE STATE RETIREMENT SYSTEM

DISTRIBUTION OF STATE EMPLOYEES BY AGE AND SERVICE

COMPLETED YEARS OF SERVICE

AGE	LESS THAN 1 NO.	LESS THAN 1 EARNS.	1 YEAR NO.	1 YEAR EARNS.	2 YEARS NO.	2 YEARS EARNS.	3 - 4 NO.	3 - 4 EARNS.
to 21	59	$ 9958	17	$ 8639	11	$ 10869	0	$ 0
21-25	172	11501	128	9838	96	11672	113	12194
25-29	198	11518	180	10987	154	13971	294	14075
30-34	196	12013	138	12255	150	14809	290	15648
35-39	149	11957	152	11918	148	15513	236	16476
40-44	90	12418	97	11772	82	17321	146	16254
45-49	58	11721	64	11391	56	14720	116	15086
50-54	48	12220	50	12053	43	15617	92	16280
55-59	25	10217	35	13528	31	14177	53	15068
60-64	13	10510	13	10313	11	13164	30	13803
65-69	5	8193	0	0	1	17569	5	10230
70+	1	15808	1	8197	1	8032	1	10952
TOTAL	1014	$ 11652	875	$ 11401	784	$ 14585	1376	$ 15144

AGE	5 - 9 NO.	5 - 9 EARNS.	10 - 14 NO.	10 - 14 EARNS.	15 - 19 NO.	15 - 19 EARNS.	20 - 24 NO.	20 - 24 EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	0	$ 0
21-25	67	13128	0	0	0	0	0	0
25-29	630	15070	40	14373	0	0	0	0
30-34	863	17675	421	17444	58	17586	0	0
35-39	646	18238	596	20831	407	20691	28	19114
40-44	336	18327	311	20880	338	21916	218	21194
45-49	273	16924	217	19557	246	20902	191	22625
50-54	265	16672	238	18645	205	19393	149	21282
55-59	218	16361	224	18110	259	18989	119	19884
60-64	110	16953	137	17890	124	18519	61	20333
65-69	24	17057	31	16605	23	15993	14	22276
70+	14	18527	11	15944	7	17240	9	18621
TOTAL	3446	$ 17036	2226	$ 19186	1667	$ 20197	789	$ 21209

AGE	25 - 29 NO.	25 - 29 EARNS.	30 - 34 NO.	30 - 34 EARNS.	35 & OVER NO.	35 & OVER EARNS.	TOTAL NO.	TOTAL EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	87	$ 9815
21-25	0	0	0	0	0	0	576	11485
25-29	0	0	0	0	0	0	1496	13781
30-34	0	0	0	0	0	0	2116	16268
35-39	1	17154	0	0	0	0	2363	18175
40-44	23	19760	0	0	0	0	1641	19005
45-49	132	21511	14	21973	0	0	1367	18623
50-54	149	23024	74	21174	13	20347	1326	18569
55-59	101	23368	61	27156	65	23239	1191	18809
60-64	44	21811	21	28004	39	25139	603	18591
65-69	11	19184	4	22315	10	18847	128	17205
70+	9	22477	3	19442	5	18358	62	18039
TOTAL	470	$ 22287	177	$ 24105	132	$ 22998	12956	$ 17263

MAINE STATE RETIREMENT SYSTEM

DISTRIBUTION OF TEACHERS BY AGE AND SERVICE

COMPLETED YEARS OF SERVICE

	LESS THAN 1		1 YEAR		2 YEARS		3 - 4	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	3	$ 7717	0	$ 0	1	$ 6614	0	$ 0
21-25	134	10217	146	10471	106	10989	53	10530
25-29	153	10719	193	11499	269	11466	534	12768
30-34	168	12203	159	12720	193	13346	344	14011
35-39	161	12873	196	13076	171	13716	325	14097
40-44	88	13713	94	13256	98	14494	242	14486
45-49	42	14326	43	14328	41	14372	123	14578
50-54	27	14119	23	14293	24	12838	57	12892
55-59	19	13866	12	13723	12	15221	30	14944
60-64	7	12944	9	14651	9	13274	13	11840
65-69	1	11400	4	8091	0	0	4	11737
70+	1	6124	0	0	0	0	1	15158
TOTAL	804	$ 12085	879	$ 12347	924	$ 12767	1726	$ 13601

	5 - 9		10 - 14		15 - 19		20 - 24	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	0	$ 0
21-25	7	11757	0	0	0	0	0	0
25-29	669	14018	10	14238	0	0	0	0
30-34	1539	15570	902	17637	15	16961	0	0
35-39	859	15989	1711	19078	731	20500	8	17744
40-44	585	16096	590	19477	952	21303	361	21682
45-49	326	15336	349	18735	372	20400	611	22539
50-54	217	15107	297	18272	256	19251	228	21937
55-59	98	14784	175	16178	203	17992	136	19221
60-64	37	15273	66	16265	73	18482	57	19595
65-69	8	10910	7	14720	20	16367	8	18580
70+	2	13941	0	0	1	19820	0	0
TOTAL	4347	$ 15408	4107	$ 18543	2623	$ 20353	1409	$ 21733

	25 - 29		30 - 34		35 & OVER		TOTAL	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	4	$ 7441
21-25	0	0	0	0	0	0	446	10545
25-29	0	0	0	0	0	0	1828	12737
30-34	0	0	0	0	0	0	3320	15540
35-39	2	18097	0	0	0	0	4164	17556
40-44	3	20894	0	0	0	0	3013	18738
45-49	213	21942	6	17043	0	0	2126	19414
50-54	347	23035	121	22021	7	22192	1604	19452
55-59	106	22369	139	22595	64	20846	994	18563
60-64	26	18856	20	21912	42	20714	359	17824
65-69	7	22983	8	20112	12	21111	79	16862
70+	0	0	1	5658	2	20265	8	14396
TOTAL	704	$ 22426	295	$ 22076	127	$ 20892	17945	$ 17160

MAINE STATE RETIREMENT SYSTEM

DISTRIBUTION OF PARTICIPATING DISTRICT EMPLOYEES BY AGE AND SERVICE

COMPLETED YEARS OF SERVICE

	LESS THAN 1		1 YEAR		2 YEARS		3 - 4	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	61	$ 9755	7	$ 10987	3	$ 13106	1	$ 6503
21-25	172	11402	78	12864	55	13194	40	14092
25-29	181	12131	127	13614	90	14633	167	15782
30-34	169	12574	112	12898	94	14951	156	15962
35-39	148	13014	99	12909	96	14152	138	13980
40-44	103	14056	62	12618	64	14090	100	15216
45-49	82	13059	49	13067	57	13967	79	12932
50-54	67	17835	43	13309	44	14679	77	12846
55-59	62	13930	37	12266	22	14099	80	12770
60-64	32	20635	13	13583	16	14319	45	12740
65-69	5	25431	3	10684	1	25489	11	12854
70+	2	12314	1	11564	0	0	0	0
TOTAL	1084	$ 13093	631	$ 12996	542	$ 14307	894	$ 14422

	5 - 9		10 - 14		15 - 19		20 - 24	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	0	$ 0
21-25	9	12569	0	0	0	0	0	0
25-29	230	16674	9	16490	0	0	0	0
30-34	362	17165	226	18094	7	15983	0	0
35-39	275	17281	333	19116	95	19970	0	0
40-44	224	16113	216	18428	217	20778	35	19610
45-49	228	15112	184	15675	120	19490	87	21421
50-54	217	13720	217	14978	110	17326	73	19377
55-59	209	14680	240	14643	185	15066	57	17043
60-64	152	14581	139	15256	104	15950	36	18825
65-69	37	14712	28	13648	23	15495	10	13721
70+	5	11064	23	11244	13	13303	1	17258
TOTAL	1948	$ 15827	1615	$ 16714	874	$ 18007	299	$ 19291

	25 - 29		30 - 34		35 & OVER		TOTAL	
AGE	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.	NO.	EARNS.
to 21	0	$ 0	0	$ 0	0	$ 0	72	$ 9970
21-25	0	0	0	0	0	0	354	12336
25-29	0	0	0	0	0	0	804	14752
30-34	0	0	0	0	0	0	1126	15879
35-39	0	0	0	0	0	0	1184	16475
40-44	1	11958	0	0	0	0	1022	17075
45-49	20	20307	0	0	0	0	906	15968
50-54	40	21812	11	20621	0	0	899	15628
55-59	24	18833	10	21665	2	20222	928	14762
60-64	23	18224	13	18536	8	21173	581	15735
65-69	6	17741	2	17472	2	23973	128	15121
70+	1	13810	0	0	1	10000	47	12003
TOTAL	115	$ 19843	36	$ 19983	13	$ 20598	8051	$ 15606

MAINE STATE RETIREMENT SYSTEM

COMPARISON OF RETIREMENT BENEFITS UNDER CURRENT AND PROPOSED PROGRAMS

Employee Retiring at Age 60 With 40 Years of Service -- Full Social Security Benefits at Age 65

		Current Program		Proposed Program -- to Age 62		Proposed Program -- After Age 62			
Final Year's Salary	3-Year Average Salary	Plan Benefit	%	Plan Benefit	%	Plan Benefit	Social Security	Total	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$10,000	$ 9,240	$ 7,392	74%	$ 6,160	62%	$ 3,922	$4,476	$ 8,398	84%
12,500	11,550	9,240	74	7,700	62	5,108	5,184	10,292	82
15,000	13,861	11,089	74	9,240	62	6,307	5,868	12,175	81
17,500	16,171	12,936	74	10,781	62	7,571	6,420	13,991	80
20,000	18,481	14,785	74	12,321	62	8,925	6,792	15,717	79
25,000	23,101	18,481	74	15,401	62	11,795	7,212	19,007	76
30,000	27,721	22,177	74	18,481	62	14,803	7,356	22,159	74
35,000	32,342	25,873	74	21,561	62	17,847	7,428	25,275	72
40,000	36,961	29,569	74	24,640	62	20,915	7,452	28,367	71

1. Current Program Benefit Formula: 2% x Service x Final 3-Year Average Salary
2. Proposed Program Benefit Formula: 1-2/3% x Service x Final 3-Year Average Salary - 50% x Social Security
3. Salaries are assumed to increase at 5.5% per year

MAINE STATE RETIREMENT SYSTEM

COMPARISON OF RETIREMENT BENEFITS UNDER CURRENT AND PROPOSED PROGRAMS

Employee Retiring at Age 60 With 40 Years of Service -- Full Social Security Benefits at Age 67

Final Year's Salary	3-Year Average Salary	Current Program		Proposed Program -- to Age 62		Proposed Program -- After Age 62			
		Plan Benefit	%	Plan Benefit	%	Plan Benefit	Social Security	Total	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$10,000	$ 9,240	$ 7,392	74%	$ 6,160	62%	$ 4,204	$3,912	$ 8,116	81%
12,500	11,550	9,240	74	7,700	62	5,432	4,536	9,968	80
15,000	13,861	11,089	74	9,240	62	6,679	5,124	11,803	79
17,500	16,171	12,936	74	10,781	62	7,973	5,616	13,589	78
20,000	18,481	14,785	74	12,321	62	9,351	5,940	15,291	76
25,000	23,101	18,481	74	15,401	62	12,245	6,312	18,557	74
30,000	27,721	22,177	74	18,481	62	15,265	6,432	21,697	72
35,000	32,342	25,873	74	21,561	62	18,309	6,504	24,813	71
40,000	36,961	29,569	74	24,640	62	21,383	6,516	27,889	70

1. Current Program Benefit Formula: 2% x Service x Final 3-Year Average Salary
2. Proposed Program Benefit Formula: 1-2/3% x Service x Final 3-Year Average Salary - 50% x Social Security
3. Salaries are assumed to increase at 5.5% per year

MAINE STATE RETIREMENT SYSTEM

ILLUSTRATIONS OF CALCULATION PROCEDURES FOR PROPOSED PROGRAM

1. Normal Retirement Benefit

Employee Retiring at Age 60

Years of Service:	25
Final Salary:	$20,000
Average 3-Year Earnings:	$18,481
Social Security at Age 62:	$ 5,880 (calculated at age 60)
Cost-of-Living Increases:	4% per year

a. Annual Benefit Payable at Age 60
   1-2/3% x 25 x $18,481 = $ 7,700

b. Annual Benefit Payable at Age 61
   $7,700 x 1.04 = $ 8,008

c. Annual Benefit Payable at Age 62
   -- From Plan
      ($7,700 - .5 x $5,880) x $(1.04)^2$ = $5,148
   -- From Social Security: 5,880*
   -- Total $11,028

d. Annual Benefit Payable after 62
   $11,028 x $(1.04)^n$ where n is the number of years elapsed since age 62.

* Note that actual Social Security amounts payable may be higher because of covered employment elsewhere.

2. Early Retirement Benefit

Employee Retiring at Age 55
Years of Service: 25
Final Salary: $15,000
Average 3-Year Earnings: $13,861
Social Security at Age 62: $ 4,526 (calculated at age 55)
Cost-of-Living Increases: 4% per year

a. Annual Benefit Payable at Age 55
   1-2/3% x 25 x $13,861 x .88 = $5,082

b. Annual Benefit Payable from 56 to 61
   $5,082 x $(1.04)^n$ where n = number of years elapsed since age 55

c. Annual Benefit Payable at Age 62

   -- From Plan:
   ($5,082 - .5 x $4,526) x $(1.04)^7$ = $3,710

   -- From Social Security: 4,526 *

   -- Total $8,236

d. Annual Benefit Payable after 62
   $8,236 x $(1.04)^n$ where n is the number of years elapsed since age 62

* Note that actual Social Security amounts payable may be higher because of covered employment elsewhere.

3. Disability Benefit

Employee Disabled at Age 45

Years of Service:	10
Final Salary:	$15,000
Average 3-Year Earnings:	$13,861
Social Security Disability Benefit:	$ 6,500
Social Security Retirement Benefit at Age 62:	$ 5,200
Cost-of-Living Increases:	4% per year

a. Annual Disability Benefit Payable to Age 62

-- From Plan:
.60 x $13,861 - .64 x $6,500 = $4,157

-- From Social Security: 6,500

-- Total $10,657

This would be indexed by 4% per year.

b. Annual Retirement Benefit Payable Beginning at Age 62

-- From Plan:
(1-2/3% x 27 x $13,861 - .5 x $5,200)
= $3,637 x $(1.04)^n$

-- From Social Security: 6,500 x $(1.04)^n$

-- Total $10,137 x $(1.04)^n$

where n is the number of years elapsed since age 45

4. Surviving Spouse Benefit

Employee Dies at Age 45	
Years of Service:	25
Final Salary:	$15,000
Average 3-Year Earnings:	$13,861
Social Security Retirement Benefit at Age 62:	$ 5,500
Reduction Factor for 50% Joint & Survivor:	.90
Reduction Factor for Early Retirement:	.7

a. Employee's Accrued Benefit on a 50% Joint & Survivor Basis

-- To age 62
1-2/3% x 25 x $13,861 x .7 x .9 = $3,639

-- After age 62
$3,639 - .5 x $5,500 x .9 = $1,164

(Indexing up to 4% per year would apply.)

b. To comply with law, spouse would receive an annuity of 1/2 of (a), or $1,820 until employee's 62nd birthday and $582 thereafter per year.

c. Benefit to Surviving Spouse equals a level life annuity of equivalent actuarial value to (b). For a spouse age 45, a life annuity of $1,613 would be produced.