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Hartford, Connecticut  
September 27, 1946

TO THE MEMBERS OF THE CONNECTICUT LEGISLATIVE COUNCIL:

Attached please find a report of an actuarial survey of the State Employees' Retirement Plan. It seems to the undersigned that there are two important problems for decision; and that the earlier decisions are reached the more satisfactory it will be for all concerned, both State employees and taxpayers.

The first problem is as to the method of financing of the pensions. The report compares four methods of financing. The undersigned recommend that serious consideration be given to the method of financing estimated in Table C of the report. This is substantially the same method as is already being used in connection with the Teachers' Retirement Plan.

The second problem is as to whether the benefits and probable future costs of the present plan are reasonable or whether in justice both to State employees and to taxpayers some change should be made. Tables D, E, and F give some comparisons between the estimated future cost of the present plan and of certain other plans which might logically be considered. These comparisons are made on the present basis of financing, but somewhat the same comparative picture would have been shown if any of the other methods of financing had been used as a basis for comparison.

The undersigned will be glad to make themselves available for discussion with you of the actuarial principles involved, at your convenience.

Yours very truly,

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CONNECTICUT STATE EMPLOYEES' RETIREMENT PLAN  
REPORT OF ACTUARIAL RESTUDY

The present State Employees' Retirement Plan was adopted in 1939. During the first six years of its operation, it cost the state an average of only \$150,000 per year. The current cost is \$400,000 per year. A preliminary actuarial survey made early in 1945 indicated that this cost can be expected to grow until it reaches something in excess of \$4½ millions.

However, the 1945 survey was based on a 1944 payroll of about 10,500 employees with salaries of about \$23 millions per year. At present the number of covered state employees is close to 12,000 with salaries of about \$30 millions per year. In order to recognize this substantial increase, a rather rough adjustment has been added in this report to various figures calculated on the assumptions stated and described in the Appendix to the 1945 survey.

Since those assumptions were not over-conservative, it must be kept in mind that the estimates given in this report can easily be exceeded in the actual working-out of the Plan--in fact, from some limited calculations based on revised assumptions, it would appear that the estimates in this report should be considered as indicating something close to minimum probable future costs.

All of the estimates assume a constant future payroll of about 12,000 employees with salaries of about \$30 millions per year. Any substantial variation in future payroll will, of course, alter the figures more or less proportionately.

The past costs and estimated future costs of the present plan, under the present method of financing, are shown in Table A:

TABLE A

<u>Period</u>	<u>Average Annual Cost to State</u>
1939-45	\$ 150,000
1945-47	420,000
1947-49	550,000
1949-54	820,000
1954-59	1,300,000
30 Years Hence	5,800,000, or 19.3% of payroll

The present method of financing has been attacked as unsound. One-half of all pension payments is taken out of the Contributions Fund (as the present Retirement Fund will be called in this report). As a result, the amount left in the Contributions Fund on December 31, 1944 was already \$530,000 less than the contributions then standing to the credit of active employees--in other words, if the Retirement Plan had then been wound up by repayment of past contributions to all unretired employees, the state would have had to find \$530,000 somewhere in order to make up the deficit in the Contributions Fund. Moreover, if the present method of financing is continued, the calculations on which the foregoing Table A is based indicate that the Contributions Fund will some day become completely exhausted, and when that happens the aggregate contributions nominally standing to the credit of employees then in active service will be between \$10 millions and \$15 millions.

Consideration should obviously be given to a change in the method of financing, so as to maintain in the Contributions Fund at all times an amount equal to the total contributions standing to the credit of active employees. In order to do

this the state must appropriate enough to cover all pension payments except such amounts as are covered by

- (1) interest earned on the Contributions Fund, and
- (2) the contributions standing to the credit of retired employees at their dates of retirement.

Table B shows the resulting costs, estimated on the same assumptions as Table A:

TABLE B

<u>Period</u>	<u>Average Annual Cost to State</u>	<u>Contributions Fund at End of Period</u>
1939-45	\$ 150,000	\$ 2,000,000
1945-47	420,000	3,000,000
1947-49	1,600,000*	5,000,000
1949-54	1,300,000	9,000,000
1954-59	2,100,000	12,000,000
30 Years Hence	5,500,000, or 18.3% of payroll	15,000,000

\*Including the amount necessary to make up the present deficit in the Contributions Fund.

Under this method of financing, if at any time it should become desirable to wind up the Plan (as, for example, by reason of the extension of Social Security to cover state employees) the Contributions Fund would contain enough money to pay active employees their contributions back, which would certainly have to be done under these circumstances.

Even with the change suggested in Table B, the State Employees' Retirement Plan would not be on as conservative a basis as the State Teachers' Retirement Association.

Teachers' Financing Basis

Under the operation of the State Teachers' Pensions, the teachers' contributions are accumulated in a Contributions Fund, and a Pensions Fund is maintained for the payment of pensions to retired teachers. When a teacher retires, the accumulated contributions of that teacher are transferred from the first fund to the second fund and the state appropriates to the second fund the actuarial present value of that part of the teacher's pension which will not be paid out of the teacher's own accumulated contributions,

If this method of financing were adopted for the State Employees' Retirement Plan, it would have the advantage that, if it should ever become desirable to wind up the plan,

- (1) there would be enough money in the Contributions Fund to repay all active employees the aggregate contributions standing to their credit, and

- (2) there would be enough money in the Pensions Fund to pay out all future pension payments to previously retired employees, without further appropriations by the state (except possibly, for some small appropriations to cover deficits caused by such a situation as that, for example, the retired employees might live a little longer on the average than the actuaries had assumed in calculating the present values of pensions or interest earnings on the Pensions Fund might be less than had been assumed).

If this method of financing is adopted, Table C shows the costs, estimated on the same assumptions as underlie Table A.

TABLE C

<u>Period</u>	<u>Average Annual Cost to State</u>	<u>Funds at End of Period</u>	
		<u>Contributions Fund</u>	<u>Pensions Fund</u>
1939-45	\$ 150,000	\$ 2,000,000	\$ -
1945-47	420,000	3,000,000	-
1947-49	7,800,000*	5,000,000	12,500,000
1949-54	2,800,000	9,000,000	22,000,000
1954-59	4,100,000	12,000,000	35,000,000
30 Years Hence	4,100,000, or 13.7% of payroll	15,000,000	60,000,000

\*Including the amount necessary to cover the actuarial present values of pensions still being paid to employees retired in the 1939-47 period. If such amount were spread over 7 years, instead of 2 years, the total cost in 1947-54 would be about \$4,200,000 per year.

The last line in Table C really shows the position the state would be in, under the three methods of financing represented by Tables A, B, and C, if the plan should be wound up in 1977:

- (A) If the present method of financing is continued, the state would have to find
  - (i) about \$15 millions to pay off employees who would have been contributing to the plan but would not have yet retired, plus
  - (ii) about \$60 millions to provide for future pension payments to retired employees then drawing pensions--alternatively, these pensions could be paid out yearly, starting at the rate of about \$6,500,000 per year, and decreasing slowly until all the then pensioners had died, the aggregate annual appropriations required after the termination of the plan amounting to considerably in excess of \$60 millions.
- (B) If the Table B financing method were adopted, the \$15 millions in (i) above, would be available in the Contributions Fund, but the \$60 millions in (ii) above would have to be found.

(C) If the teachers' method of financing were adopted, the \$15 millions would be available in the Contributions Fund, and the \$60 millions would be available in the Pensions Fund.

Private-Plan Financing Basis

If a retirement plan is adopted by a private employer, such as a manufacturer or a bank, it is now well-nigh universally conceded that financial and actuarial soundness requires the accumulation of still larger reserves than any of the above methods. The unsoundness of the third method described above, if adopted by a private employer, appears when it is noticed that the employer's whole appropriation with respect to an individual employee's pension is made on his retirement date. Yet the employee earned his pension while he was working, not on the date he retired. The employer should have paid for it while the employee was working for the employer, not at or after his retirement.

In a private-plan method of financing, a distinction is usually made between the cost of pensions earned by service rendered after the adoption of the method and called "future service pensions", and the cost of the "past service pensions" earned previously.

A computation has been made of the cost to the state of adopting this method. The future service pensions would cost about \$2,900,000 per year.

The past service pensions could be covered in various ways:

- (1) A single appropriation of \$50,000,000.
- (2) An appropriation of \$2,400,000 per year for the next 30 years.
- (3) A larger appropriation for a shorter period than 30 years.

In one sense, the past service pensions constitute a "debt" to be paid off in one sum or in instalments. The smallest practical yearly appropriation for this method of financing is about \$5,300,000 per year for 30 years and \$2,900,000 per year thereafter.

This method of financing would develop a fund of about \$115 millions 30 years hence. A comparison with the other methods of financing follows:

<u>Method of Financing</u>	<u>Estimated Accumulated Funds in 1977</u>	<u>Estimated Yearly Cost to State after 1977</u>
Present Method as per Table A	None	\$ 5,800,000
Maintain solvency of Contributions Fund, as per Table B	\$ 15,000,000	5,500,000
Method similar to that of Teachers' Plan, as per Table C	75,000,000	4,100,000
Private-plan Method	115,000,000	2,900,000

Comparison of State Plan with Municipal Plan

The benefits provided by the present state plan are considerably larger than the benefits provided by the recently adopted Municipal Plan. Table D shows the estimated costs of

- (1) the State Plan, as per Table A;
- (2) using the rules of the Municipal Plan to determine retirement benefits of all employees who retire on or after September 1, 1947, except employees eligible to retire before that date under the present rules;
- (3) using the present state rules for determining the amounts of pension credited for service rendered before September 1, 1947, and the Municipal rules for determining amounts of pension based on service rendered after September 1, 1947. The Municipal rules are used to determine eligibility to retire, except for employees eligible to retire before September 1, 1947, under the present state rules.

TABLE D

Average Annual Costs to State (Present method of financing)

<u>Period</u>	<u>Present Plan</u>	<u>Municipal Plan</u>	<u>Combination Described Above</u>
1939-45	\$ 150,000	\$ -	\$ -
1945-47	420,000	-	-
1947-49	550,000	530,000	570,000
1949-54	820,000	680,000	720,000
1954-59	1,300,000	900,000	1,000,000
30 Years Hence	5,800,000	3,300,000	3,600,000
Cost 30 Years Hence as % of payroll	19.3%	11.0%	12.0%

Comparison With Teachers' Plan

The following Table E compares the cost of the present State Plan with what the cost would be if the rules of the State Teachers' Plan were substituted, either in whole or in part, as described above for the Municipal Plan:

TABLE E

Average Annual Costs to State (Present method of financing)

<u>Period</u>	<u>Present Plan</u>	<u>Teachers' Plan</u>	<u>Combination Described Above</u>
1939-45	\$ 150,000	\$ -	\$ -
1945-47	420,000	-	-
1947-49	550,000	540,000	570,000
1949-54	820,000	730,000	810,000
1954-59	1,300,000	1,100,000	1,200,000
30 Years Hence	5,800,000	4,200,000	4,900,000
Cost 30 Years Hence as % of payroll	19.3%	14.0%	16.3%

Restricting Retirements to Age 65 for Men and Age 60 for Women

The present State Plan allows employees who have completed 25 years of service and reached age 55 for men, or age 50 for women, to retire on the full pensions provided for their years of service. Most private pension plans allow full pensions only on retirement at or after age 65 for men or age 60 for women. (Employees who retire earlier are paid reduced pensions, the amount of reduction being based on the number of years of advancement of retirement age, so as to allow a pension of only equivalent actuarial value.)

Table F shows the change in estimated costs if the State Plan were changed accordingly as to employees who, on September 1, 1947, are not yet eligible to retire under the present rules.

TABLE F

Average Annual Costs to State

<u>Period</u>	<u>Present Plan</u>	<u>Changed Plan</u>
1939-45	\$ 150,000	\$ -
1945-47	420,000	-
1947-49	550,000	510,000
1949-54	820,000	700,000
1954-59	1,300,000	1,000,000
30 Years Hence	5,800,000	4,300,000
Cost 30 Years Hence as % of payroll	19.3%	14.3%

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Reduction of Pension Credit for Years of Service after 25

The present plan provides a 50% pension for 20 years of service, with proportionately reduced pensions for shorter periods of service. It allows an additional 2% pension for each year of service in excess of 25 years. The average private plan allows rather less liberal pensions. One suggested rule for reducing the pensions has been to allow an increase of only 1% (instead of 2%) for each year of service rendered in the future after the first 25 years of service. An estimate of the financial effect of this change shows that it will make little difference for the next ten or fifteen years, and will probably reduce the ultimate cost to the state by about 10%.

\* \* \* \* \*

The detailed tables and explanations on which the above summary is based are available for study and reference.