

Connecticut Post-Employment Benefit Commission

October 28, 2010

The Honorable M. Jodi Rell  
Governor  
State of Connecticut  
State Capitol  
Hartford, Connecticut 06106

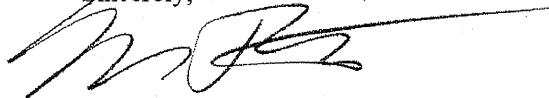
Dear Governor Rell:

I am pleased to present to you the final report of the Connecticut Post-Employment Benefits Commission, established by you pursuant to Executive Order #38. The Commission has endeavored to produce a report that is objective and can be used as a tool for future policy makers as they face the challenges presented by these issues. I would like to offer my sincerest thanks to the members of the Commission, who have all worked tirelessly in producing this report.

While the report speaks for itself, I believe it is important to note that, like many other states, Connecticut's unfunded liabilities and funding ratios related to its post-employment benefit plans for its employees and retirees prove to be major challenges facing policy makers in this state. These unfunded liabilities have led to increasing annual costs which have put pressure on other budgetary priorities. Unfortunately, these liabilities and associated annual costs will only continue to get worse if additional actions are not taken soon. While this report outlines a number of the many causes of our current situation, it more importantly offers a series of balanced and responsible strategies for consideration to mitigate these growing unfunded liabilities.

I would like to thank you for creating the Commission and bringing some much needed focus to this often overlooked area. Please note that the report will be posted on the Office of Policy and Management website: [www.ct.gov/opm](http://www.ct.gov/opm).

Sincerely,



Michael J. Cicchetti  
Chair

CC: Commission Members



October 28, 2010

Connecticut State Post-Employment Benefits Commission  
Final Report

# **Connecticut State Post-Employment Benefits Commission**

## **Final Report**

October 28, 2010

**Table of Contents**

**EXECUTIVE SUMMARY..... 4**

    LIABILITIES AND COSTS RELATED TO CONNECTICUT’S RETIREMENT SYSTEMS ..... 4

    CAUSES OF UNFUNDED LIABILITY FOR SERS AND STATE OPEB PLAN ..... 5

    STRATEGIES FOR FOR CONSIDERATION FOR ADDRESSING CONNECTICUT’S POST EMPLOYMENT BENEFIT LIABILITIES AND COSTS ..... 6

**INTRODUCTION ..... 9**

    COMMISSION MEMBERS..... 10

**COMMISSION’S APPROACH ..... 11**

**BACKGROUND ..... 12**

    LEGAL AND COLLECTIVE BARGAINING FRAMEWORK RE STATE EMPLOYEE RETIREMENT SYSTEMS..... 12

    2009 STATE AND SEBAC AGREEMENT ..... 12

    DESCRIPTIONS AND DEFINITIONS OF ACTUARIAL LIABILITIES AND CALCULATIONS..... 13

**STATE ADMINISTERED PENSION PLANS ..... 15**

    OVERVIEW OF STATE ADMINISTERED PENSION PLANS ..... 15

*State Employee Retirement System (SERS)* ..... 15

*Teachers Retirement System (TRS)*..... 17

*Judicial Retirement System (JRS)*..... 17

*Alternate Retirement Program*..... 17

    FUNDING HISTORY AND FUTURE PROJECTIONS FOR SERS ..... 18

*June 30, 2008 SERS Actuarial Valuation; Projection for June 30, 2010*..... 18

*Actuarial Accrued Liability among Tiers for SERS*..... 18

    CAUSES OF GROWTH IN SERS UNFUNDED LIABILITY AND LACK OF FUNDING PROGRESS ..... 18

    PENSIONS: COMPARISONS TO OTHER STATES, MUNICIPALITIES AND PRIVATE SECTOR ..... 25

*Connecticut’s Pension Funding Ratios*..... 25

*Connecticut’s Pension Plan Provisions* ..... 25

*Connecticut Municipal Pension Plans*..... 26

*Private Sector Pension Plans* ..... 27

**STATE OTHER POST EMPLOYMENT BENEFIT (OPEB) PLANS ..... 28**

    OVERVIEW OF STATE ADMINISTERED OPEB PLANS..... 28

*State Employee OPEB Plan*..... 28

*Retired Teachers Health Plan (RTHP)* ..... 29

    STATE OPEB ACTUARIAL ACCRUED LIABILITY AND ARC AMOUNTS ..... 29

    BREAKDOWN OF OPEB ACTUARIAL ACCRUED LIABILITY ..... 30

    IMPACT OF STATE AND EMPLOYEE CONTRIBUTIONS ON DISCOUNT RATE AND TOTAL LIABILITIES ..... 32

    HEALTH CARE COSTS AND TRENDS..... 33

    OPEB: COMPARISONS TO OTHER STATES, MUNICIPALITIES AND PRIVATE SECTOR ..... 34

*State OPEB Plans and Provisions*..... 34

*Municipalities and the Private Sector* ..... 35

**IMPACT OF PENSION AND OPEB LIABILITIES ON STATE’S BUDGETARY AND FINANCIAL OUTLOOK AND CREDIT RATINGS ..... 36**

STATE PENSION AND OPEB COSTS AS AN INCREASING PORTION OF STATE EXPENDITURES ..... 36

IMPACT ON FINANCIAL OUTLOOK AND CREDIT RATINGS ..... 39

**ACTIONS TAKEN IN OTHER STATES REGARDING PENSION AND OPEB LIABILITIES ..... 40**

**POTENTIAL STRATEGIES TO ADDRESS PENSION AND OPEB LIABILITIES AND COSTS ..... 41**

PENSION PLANS ..... 41

*Overall Strategy* ..... 41

FUNDING STRATEGIES ..... 42

*Paying the Annual Required Contribution (ARC)* ..... 42

*Calculating the ARC* ..... 42

*Employee Contributions to the Fund* ..... 44

*Pension Obligation Bonds* ..... 45

PLAN DESIGN AND BENEFIT MODIFICATION STRATEGIES ..... 47

STATE OPEB PLAN ..... 52

*Overall Strategy* ..... 52

*Prefunding in a Trust Fund* ..... 52

**CONCLUSION ..... 56**

**APPENDICES ..... 57**

## **Executive Summary**

---

Governor M. Jodi Rell established the State Post-Employment Benefits Commission (the Commission) through Executive Order #38. Although Governor Rell recognized that pension and other post employment benefits (OPEB) consisting mainly of retiree health insurance, play an important role in attracting and maintaining a skilled and capable work force, she highlighted the growing impacts of the unfunded liabilities and costs related to these plans on the State's budget and finances. The Governor charged the Commission with delivering a report that:

- Identifies the amount and extent of unfunded liabilities for pensions and other post-employment benefits;
- Compares and evaluates the advantages and disadvantages of various approaches for addressing unfunded pension liabilities and post-employment benefits; and
- Proposes short and long-term plans for addressing unfunded pension liabilities and post-employment benefits.

The Commission reviewed actuarial valuations, collective bargaining agreements and other information regarding Connecticut's retirement systems as well as research reports and articles addressing these issues. The Commission also obtained actuarial estimates of liabilities and various approaches to how they may be addressed.

### **Liabilities and Costs Related to Connecticut's Retirement Systems**

The State's pension plans include the Teachers Retirement System, the Judicial Retirement System, and the State Employees Retirement System (SERS) all of which are defined benefit plans. SERS covers the majority state employees and retirees as well as members of the General Assembly, constitutional officers and the Governor. Additionally, The State administers a defined contribution program for some higher education employees. The State also sponsors the State OPEB Plan (primarily health benefits) and the Retired Teacher Health Care Plan. The Commission focused on the SERS and State OPEB plans.

As of June 30, 2008, Connecticut's unfunded liability for SERS was \$9.2 billion and \$24.6 billion for OPEB, a total unfunded liability of \$33.8 billion. Consider that Connecticut's current year general fund budget is \$17.6 billion. Connecticut's 2008 funding ratio for its State-sponsored pension plans (plan assets as a percentage of plan liabilities), according to the Pew Center on the States, was the fifth lowest in the country. A November 2009 report by the Center for State and Local Government Excellence, indicated that Connecticut's unfunded OPEB liability was the third highest in the country

Connecticut's unfunded liabilities have lead to increasing costs consuming a growing percentage of state expenditures. In fiscal year 1992, the annual costs related to SERS, TRS and OPEB were 5.57 percent of state expenditures. They are projected to be 11.24 percent in the current fiscal year. If this trend continues, the percentages will grow to 13.7 percent in 2021 and almost 19 percent in 2032.

## Causes of Unfunded Liability for SERS and State OPEB Plan

### *State Employee Retirement System (SERS)*

The SERS plan has historically been underfunded, in part because, until the 1980's, it was funded on a pay-as-you-go basis. Indeed, the 2008 funding ratio of 51.9 percent is just slightly higher than the 1992 ratio of 51.4 percent, despite a decision to begin funding the Annual Required Contribution (ARC).

There are a number of reasons for a lack of progress with the SERS funding ratio. The Level Percent of Payroll method of calculating its ARC tends to have lower amortization amounts in the earlier years of the schedule. More importantly, interpretations applied to the 1995 and 1997 State and the State Employee Bargaining Agent Coalition agreements (SEBAC IV and V, respectively) have included annual reductions to the ARC. These reductions totaled over \$105 million in fiscal year 2011. Moreover, reductions in the ARC payments of \$314 million were included in the 2009 State and SEBAC agreement. The result is a heavy back-loading of the amortization schedule, resulting in a stagnant funding ratio and a growing annual ARC.

Some other reasons for a lack of funding progress include the 2009 and previous retirement incentive programs and the plan's assumed actuarial investment return. SERS, like most plans, was hurt by the severe market downturn in 2008, the main cause of the projected funding ratio decline to 46 percent as of June 30, 2010.

Historically, Connecticut has responded to concerns about unfunded liabilities by creating new tiers, as opposed to modifying existing tiers. SERS consists of three tiers: Tier I for those hired before July 1, 1984; Tier II for those hired from July 1, 1984 to June 30, 1997; and Tier IIA for those hired on or after July 1, 1997. According to the June 30, 2008 actuarial valuation, \$14.3 billion of SERS total actuarial accrued liabilities of \$19.2 billion are attributable to current retirees and Tier I active employees. This portion of the plan's liabilities would likely not be impacted by plan modifications given the legal issues involved.

Compared to other New England states, the annual payments as a percentage of final average salaries are lower for Tier II and IIA plans than the other states. The required employee contributions are lower in Connecticut as well. Connecticut's reductions in benefits related to early retirement are generally less than found in other New England states.

### *State Other Post Employment Benefit Plan (OPEB)*

The challenge with OPEB for Connecticut and many other states is that the difference between the ARC and the pay-as-you-go amount (which is the amount Connecticut has been paying) is very difficult to fund from a budgetary standpoint. In 2008, the ARC was \$1.65 billion. The actual amount paid for benefits was \$.464 billion. Difficult as it is, continuing along the pay-as-you-go path will subject the state to continuing growth in these costs as a result of health inflation and a growing number of retirees. From fiscal year 1999-00 to 2008-09, these costs increased from \$173.9 million to \$452.0 million, or 11.2 percent per year.

As noted, Connecticut's OPEB liabilities are high compared to other states. The three main reasons for differences in per capita OPEB liability amounts are: 1) benefits levels and plan costs; 2) population covered; and 3) funding policy. In Connecticut, a high cost state, employees who work at least ten years are eligible to receive full comprehensive health care coverage for themselves and their dependants when they begin receiving retirement benefits, with 55 being the early retirement age for non-hazardous duty employees. The premium shares are minimal, ranging from zero to a maximum of three percent. Unlike pensions, once vested, the level of benefits received is not tied to the number of years of service. The Rule of 75 (years of service plus age) in the 2009 SEBAC agreement will delay when affected employees (those with less than ten years of service as of July 1, 2009) can begin receiving retiree health insurance.

In regard to funding, most states, like Connecticut have zero or few assets in their OPEB plans. The 2009 SEBAC agreement, however, included a provision that involved a 3 percent of salary employee contribution during the first ten years of service. These contributions are projected at \$23 million in the current year. These contributions, by staying in the OPEB trust and not being used for current costs, will decrease the plan's actuarial liabilities and ARC.

#### **Strategies for Consideration for Addressing Connecticut's Post Employment Benefit Liabilities and Costs**

In light of the State's serious budgetary challenges over the next several years, and the pressure the growing costs of the State's retirement systems place on other budgetary needs, the Commission believes a number of approaches need to be considered to reduce the unfunded pension liabilities of the State. Consideration should be given to new funding strategies, financing alternatives, and plan design and benefit modifications. The issues and factors outlined in this report, among others, will need to be weighed when considering the strategies and approaches to be implemented in seeking to reduce these liabilities.

It is important to note that there are Commission members who did not agree with some of the strategies presented below in regard to the State pension and OPEB plans. Also, the Commission did not seek to prioritize these strategies. The main goal of this report has been to provide information and potential approaches to addressing these liabilities to policy-makers and stakeholders.

The State needs to develop a sound funding strategy for its retirement plans and have the fiscal discipline to carry it out. Timely analysis and multi-year actuarial projections are critical when policy makers are reviewing funding practices or making decisions impacting the plans. Policy makers need to question how a declining proportion of working-age citizens can fund Connecticut's unfunded liabilities for an increasing proportion of retirees.



*Summary of Strategies for Consideration for SERS and OPEB***Short Term Plan**

- **Pre-Fund OPEB**
- **Pay the ARC, and Eliminate Any Adjustments to Such.**
- **Increased Member Contributions.** The State and SEBAC should consider additional employee contributions for reinvestment in the plans (with a 1 percent increase totaling about \$32 million), while the State should consider enacting a provision that would dedicate, for example, a portion of future surpluses for the plans.
- **Increasing the Retirement Age or Incentives to Retire Later.** The State and SEBAC should consider raising the retirement age for those in Tiers II and IIA and increasing reductions related to early retirements, with any savings to be reinvested into the plans. For SERS, the projected savings totaled \$135 million related to these changes in the first year, savings would increase going forward.
- **Other Plan Design Strategies.** The State and SEBAC should consider plan modifications to SERS and OPEB, with any savings to be reinvested in the plans. In terms of OPEB, the changes for consideration include increased premium sharing and additional eligibility changes for employees moving directly to retirement from state service.
- **Service Delivery Changes.** It is also critical to continue slowing health care inflation through plan and service delivery changes, including through the implementation of medical homes and other initiatives. A one percent reduction in the annual health inflation below the actuary's assumed level would lower the calculated actuarial liability from \$26.6 billion to \$22.1 billion.

**Long Term Plan**

- **ARC and Funding Strategies.** The State should commit to a funding strategy targeting funding ratio benchmarks (e.g. 55 percent by 2018 for SERS), and consider establishing a "floor" below which ARC will not go below.
- **Actuarial Analysis and Projections.** The biennial actuarial valuations should reflect projections for liabilities and ARC amounts for all remaining years of the amortization schedule (not just two years).
- **Future Changes.** No action, such as a retirement incentive program or plan changes, should be enacted without a full actuarial analysis.

Considerable discussion was dedicated to the pros and cons of closing the defined benefit plan and replacing with a defined contribution arrangement for new employees; however, no consensus was reached as to whether this change would be beneficial to the State overall. Those on the Commission who opposed a defined contribution plan for new employees believe that such a plan would be more costly to the state and would not address the current unfunded liability problem, while providing lower and less secure retirement benefits to its employees. Those on the Commission who believed that a defined contribution plan should be considered expressed significant concern that the problems and

issues associated with the defined benefit plan could be perpetuated going forward at a growing cost to the State, especially if the recommendations in this report are ignored.

The challenge for the State will be to balance the need to increase the funding ratio of its pension and OPEB plans with the need to manage its overall budgetary needs. These increasing costs could lead to crowding out additional investments in education, infrastructure, health care, and in other critical areas.

It is the Commission's hope that this report will provide useful information to the Governor, other elected officials, and the stakeholders in adding to the understanding of the State's liabilities and costs related to its retirement system and in assessing the options available to address these issues.

## Introduction

---

Through Executive Order Number 38, dated February 3, 2010, Governor M. Jodi Rell established the State Post-Employment Benefits Commission. In establishing the Commission, Governor Rell indicated that pension and other post-employment benefits (OPEB), including retiree health insurance, play an important role in attracting and maintaining a work force capable of protecting the health and safety of the State and its residents. At the same time, Governor Rell recognized the growing budgetary challenges and impact on the State's finances, including its credit rating, associated with the unfunded liabilities and future costs related to these benefit plans.

The Governor created the Commission to assist her, other elected officials and stakeholders in developing and assessing short and long-term strategies for addressing these post-employment liabilities. Therefore, the Governor charged the Commission with delivering a report that:

- Identifies the amount and extent of unfunded liabilities for pensions and other post-employment benefits;
- Compares and evaluates the advantages and disadvantages of various approaches for addressing unfunded pension liabilities and post-employment benefits; and
- Proposes a short and long-term plan or plans for addressing unfunded pension liabilities and post-employment benefits.

The Governor originally requested delivery of the report by July 1, 2010, but additional time was provided given the challenges encountered in receiving necessary actuarial information reflecting, among other matters, the impact of the 2009 SEBAC changes. Most importantly, additional time was needed to thoroughly explore and discuss all of the issues and options associated with the State's pension and OPEB liabilities.

**Commission Members**

The members of the Commission, appointed in accordance with Executive Order Number 38, are:

<u>Member</u>	<u>Representing/Field</u>
<b>Michael J. Cicchetti</b> , Chairman and Deputy Secretary of the Office of Policy and Management	State of Connecticut Office of Policy & Management
<b>Thomas C. Woodruff</b> , Ph.D., Director Healthcare Policy & Benefit Services, Office of the Comptroller	State of Connecticut, Office of the Comptroller
<b>Christine Shaw J.D., M.B.A.</b> , Director of Government Relations, Office of the Treasurer	State of Connecticut, Office of the State Treasurer
<b>Sal Luciano</b> , Executive Director, Council 4, American Federation of State, County and Municipal Employees	State Employees Bargaining Agent Coalition
<b>Julie E. McNeal</b> , CPA, Technical Activities Director, Connecticut Society of Certified Public Accountants	Certified Public Accountants
<b>Gregory M. Stump</b> , FSA, EA, FCA, MAAA, Vice President, EFI-Actuaries	Public Pension Actuary
<b>J. Paul Mansour</b> , Head of Municipal Research, Conning	Business Community
<b>Other Participants</b>	
<b>Attorney Jamie Young</b> , Governor's Legal Office	Office of the Governor
<b>Judge Harry Calmar</b>	State of Connecticut, Judicial Branch

## Commission's Approach

---

The Commission's approach included reviewing numerous research reports and articles written about pension and OPEB issues. The Commission also reviewed significant amounts of information related specifically to Connecticut's plans, including past and most recent actuarial valuations, pension and retiree health plan provisions, investment reports related to plan assets, as well as original and subsequent modifications to the collective bargaining agreement between State and the State Employee Bargaining Agent Coalition (SEBAC) that establish, in part, retiree benefit plans. The Commission also received information and presentations regarding how actuarial liabilities related to pensions and OPEB plans are measured and how the annual Actuarial Required Contribution (ARC) is calculated. Many of the documents reviewed by the Commission are available on its website. [http://www.ct.gov/opm/cwp/view.asp?a=2998&q=457846&opmNav\\_GID=1791](http://www.ct.gov/opm/cwp/view.asp?a=2998&q=457846&opmNav_GID=1791)

The Commission developed a list of potential solutions or approaches in terms of funding and plan design and benefits based on reports pertaining to actions taken by other governments or organizations or through the members own professional experiences. The Commission focused on the State Employee Retirement System (SERS) plan. The Commission did not spend as much time reviewing the Teachers Retirement System (TRS) because this plan recently received significant attention related to a 2008 issuance of Pension Obligation Bonds (POBs). As part of the POB issuance, some of the requirements related to funding the ARC and plan benefits were built into the bond indenture or State Statutes. Nonetheless, a number of the recommendations in this report may apply to the TRS plan as well as the Judicial Retirement System (JRS) administered by the State.

The Commission sought to create a baseline for the current plans and funding approaches against which potential changes could be compared. The Commission's approach was to obtain actuarial estimates that would provide projections of these liabilities and the potential impact of various approaches to addressing these obligations. Additional actuarial work and analysis may be needed as part of pursuing any of the changes recommended. As required by the Governor's executive order, this report contains a discussion of the advantages and disadvantages of approaches considered.

## Background

---

### Legal and Collective Bargaining Framework re State Employee Retirement Systems

The Commission reviewed the legal framework in which OPEB and pension benefits are provided to State employees and retirees. These retirement plans are provided largely in accordance with the collective bargaining agreement negotiated between the State and the State Employee Bargaining Agent Coalition (SEBAC). SEBAC is comprised of thirteen unions, and was recognized in 1986 by Public Act 86-411 to negotiate with the State on health benefits and retirement issues. The agreement also established the joint labor-management Health Care Cost Containment Committee. In 1997, the State and SEBAC negotiated a long-term health and retirement benefit agreement, which is effective through 2017. This agreement was most recently modified by the parties in 2009.

The Commission recognized that the ability to modify the benefits received by current retirees is limited, although there is current legal action in this regard in one or more states. In terms of active employees, most proposed benefit plan changes would have to be negotiated between the State and the coalition of bargaining units. As will be described, there have been some modifications to the 1997 agreement. The Commission also discussed the State's ability to make benefit changes related to a group of former employees, known as terminated vested employees. Terminated vested employees have left state services but are eligible to begin receiving pension and/or retiree health insurance at some future date.

### 2009 State and SEBAC Agreement

In addition to a Retirement Incentive Program (RIP), the 2009 SEBAC agreement contained a number of other modifications. Including:

- Increases in co-pays for prescription drugs and mandatory generic substitution except in cases of medical necessity certified by a member's physician;
- An increase in active employee premium shares of \$350 per year with a prorated amount to be reflected in future premium share percentages;
- Reductions in preventive care co-pays;
- The application of the "Rule of 75" (combination of age and service must equal 75) for eligibility for retiree health insurance for those with less than ten years of service as of July 1, 2009; and
- A 3 percent of salary contribution up through ten years of state employment for those with fewer than five years of service as of July 1, 2010. Contributions prior to July 1, 2013, according to the agreement, are available to reduce budgeted General Fund payments for retiree health care.

The 2009 SEBAC agreement also allowed the State to defer a contribution of \$14.5 million that was budgeted for OPEB in fiscal year 2008-09, as well as to reduce contributions to SERS by \$50 million in fiscal year 2008-09, and by \$64.5 million in fiscal year 2009-10, below the ARCs calculated for those two years. The agreement also contained a trigger permitting the State to reduce its contribution to

SERS by \$100 million below the ARCs calculated for fiscal years 2009-10, and 2010-11, if revenues fell below a certain level. The total reductions included in State budgets related to SERS contributions were \$314 million for the three-year period.

### **Descriptions and Definitions of Actuarial Liabilities and Calculations**

Some of the terms used in this report are specific to actuarial calculations, and should be understood to appreciate the issues discussed herein.

*What is an actuarial liability and how is it measured?*

Employee benefits plans are generally defined in terms of three things:

- Who is entitled to receive benefits?
- Under what circumstances will they receive the benefits?
- What amount or level of benefits are they entitled to?

In the context of a pension or retiree healthcare plan, an actuarial liability is a dollar value that represents the present value of an expected benefit payment or stream of payments. The actuary takes into account a variety of actuarial assumptions, including life expectancy, expected retirement age, and projected future salaries and cost-of-living adjustments if appropriate. The most crucial assumption is the expected future return on plan assets. For most large pension funds, this assumption is around 8.0 percent annually. Based on anticipated future events, the assumptions are inevitably incorrect on a year-to-year basis, creating *actuarial gains and losses*. A reliable set of assumptions, however, will reasonably represent the true experience of a plan over the long-term.

When plans are funded using actuarial principles, monies are contributed annually to an account as benefits are earned. The annual contribution is designed to cover benefits expected to be earned during the year, and past actuarial gains or losses. Generally, the desired outcome is a relatively predictable steady stream of contributions, typically measured as a percentage of payroll for covered members.

The *funding ratio* that is referred to most often in actuarial reports represents the ratio of two numbers: the value of benefits earned compared to the value of assets used to support those benefits. Ideally, this ratio would be consistently equal to or near 100 percent; however, the reality of economic cycles causes a great deal of volatility in such. Nonetheless, on average, over three-quarters of all statewide pension systems maintained a funding ratio between 75 percent and 125 percent, as reported in the annual surveys conducted by the National Association of Retirement Administrators (NASRA) from 2003 through 2008. Ratios for many of these systems have likely fallen below this range by 2010.

The funding ratio in Connecticut is now well below this range, for reasons discussed within this report. Improved funding can come about through a variety of strategies, but it is important to keep in

mind that pension funding and any improvements thereof, are long-term in nature and should be treated as such.

#### KEY DEFINITIONS

**Actuarial Accrued Liability (AAL):** The AAL represents a funding target equal to the present value of fully projected benefits earned or accrued as of the date of the actuarial valuation. The amount of the AAL is a result of a number of factors, including the level of benefits offered, eligibility requirements for benefits, the assumed rate of return on plan assets, and other actuarial assumptions (retirement age, longevity, etc).

**Unfunded Actuarial Accrued Liability (UAAL):** The UAAL is the excess of the AAL over the actuarial value of plan assets. In other words, the UAAL is the present value of benefits earned to date that are not covered by current plan assets. A large UAAL is generally associated with plans that do not consistently receive ARC contributions.

**Actuarially Required Contribution (ARC):** The ARC is the annual employer contribution calculated by the actuary for a plan that is the sum of: (1) the employer "normal cost" of retirement benefits earned by active employees in the current year; and (2) the amount needed to amortize the existing unfunded liabilities over a period, not more than thirty years. Employee contributions are typically used to partially offset the employer's normal cost. The goal of the ARC is to help account for costs as they accrue and to reduce unfunded liabilities (or surpluses) over time.

**Normal Cost:** The Normal Cost, also known as the annual benefit cost, generally represents the portion of the cost of projected benefits allocated to the current plan year. The employer normal cost equals the total normal cost of the plan reduced by employee contributions.



## **State Administered Pension Plans**

---

### **Overview of State Administered Pension Plans**

#### **State Employee Retirement System (SERS)**

SERS is a single-employer defined-benefit pension plan covering most of the State's full-time employees. The plan also covers members of the General Assembly, constitutional officers and the Governor. According to the most recent actuarial valuation as of June 30, 2008, there were 38,093 retirees and beneficiaries receiving benefits; 1,592 terminated plan members entitled to, but not yet receiving benefits, and 53,196 active employee plan members. Subsequent to June 30, 2008, these numbers have changed through the normal course of business and, more significantly, the 2009 retirement incentive program agreed to by the State and SEBAC through which approximately 3,700 active SERS members retired. SERS is administered by the State Employees Retirement Commission and the State Comptroller's Office.

SERS consists of Tier I (Generally for those hired prior to July 1, 1984), Tier II (Generally for those hired on or after July 1, 1984 and prior to July 1, 1997), and Tier IIA (for those hired on or after July 1, 1997). Historically, Connecticut has created new tiers, as opposed to modifying existing plans, in reaction to concerns relative to the plan's unfunded liabilities. As discussed previously, the 1997 changes were part of a twenty year agreement, through 2017, regarding active employee health coverage and retiree healthcare benefits.

Provided below in Schedule 1 is a summary of plan provisions, with a more detailed description of these provisions provided in Appendix 2 of this report.

**Schedule 1****SUMMARY OF KEY SERS PLAN PROVISIONS**

**Final Average Earnings (all tiers):** Average of three highest paid years (including overtime for some units), with no one year being greater than 130% of average of two prior years.

**Normal Retirement Eligibility:**

- Tier I and II, IIA-Hazardous Duty: 20 years of service
- Tier I-Others: Age 55 with 25 years of service, age 60 with 10 years, or age 70 with 5 years
- Tier II and IIA: Age 62 with 10 years of service, age 60 with 25 years of service, age 70 with 5 years, or age 62 and 5 years for terminations on or after July 1, 1997

**Normal Retirement Benefit:**

- Tier I-Hazardous Duty: 50% of Final Average Earnings, plus 2% for each year over 20 years
- Tier II-Hazardous Duty: 2.5% of Final Average Earnings times up to 20 years, plus 2% for each year over 20 years
- Tier I-Others: Generally, 2% of Final Average Earnings times years of service.
- Tier II-Others: Generally, 1 1/3% of Final Average Earnings for each year of service, plus 1/2% of earnings in excess of breakpoint\* (\*\$10,700 increased by 6% each year since 1982 but not greater than Social Security Compensation)

**Early Retirement:**

- Tier I-Hazardous Duty: None
- Tier I-Others: Age 55 with 10 years of service; benefit is normal retirement reduced for retirement prior to age 60 with 25 years of service
- Tier II and IIA: Age 55 with 10 years of service, benefit reduced 1/4% per month prior to normal retirement.

**Deferred Retirement:**

- Tier I: May be deferred
- Tier II and IIA: May be deferred; Benefit is based on salary and service to actual retirement.

**Vesting:**

- Tier I: 10 years of service
- Tier II & IIA: Effective July 1, 1997, 5 years of actual state service, 10 years of vesting service, or age 70 with 5 years of service.

**Member Contributions:**

- Tier I-Hazardous Duty: 4% of earnings, plus 5% of earnings above Social Security Taxable Wages
- Tier I: 2% of earnings, plus 5% of earnings above Social Security Taxable Wages (Plan B); 5% of earnings (Plan C)
- Tier II: None
- Tier II-Hazardous Duty: 4% of earnings; Tier IIA-5% of earnings
- Tier IIA-All Others: 2% of earnings

**Cost of Living:**

- For employees retiring after June 30, 1999, adjustment not less than 2.5% and no greater than 6%, calculations based on percentage of CPI

**Teachers Retirement System (TRS)**

The Teachers' Retirement System, administered by the Teachers Retirement Board, is a single-employer defined-benefit pension plan covering any teacher, principal, superintendent or supervisor engaged in service to public schools in Connecticut. The plan provides retirement, disability and death benefits and annual cost-of-living adjustments to plan members and their beneficiaries. As of June 30, 2008, there were 28,787 retirees and beneficiaries receiving benefits, 1,394 terminated plan members entitled to, but not yet receiving benefits, and 81,919 active plan members.

For many years the State's actual contributions to the TRS fell short of the calculated ARC, with fiscal year 2005-06 being the first year in which the actual contribution met the calculated ARC. Going forward, the bond indenture related to the TRS pension obligation bonds issuance requires that the state contribute the calculated ARC. There are provisions that would lift this requirement temporarily, if certain criteria related to severe budgetary problems are met. The current budgetary difficulties have not yet reached the thresholds established.

As with SERS, the ARC for the TRS plan is calculated using the level percent-of-payroll method, meaning that the ARC, even if all actuarial assumptions were to be realized, will continue to increase each year.

In the most recent actuarial valuation for the TRS plan for the period ending June 30, 2008, the total liability for the plan is \$21.8 billion with plan assets of \$15.3 billion, resulting in a funding ratio of 70.05%. This is up from a funding ratio of 62.99% in 2006, largely resulting from issuance of \$2.0 billion in POBs in 2008. As is projected for SERS, the 2008 funding ratio likely will drop in the 2010 valuation as the 2008 market losses are gradually recognized. Funding ratios are also affected by, among other factors, differences between the actual retirement ages, mortality, and population demographics experienced and the actuarial assumptions used in conducting valuations.

**Judicial Retirement System (JRS)**

The Judicial Retirement System is a single-employer defined-benefit pension plan covering any appointed judge or compensation commissioner in the state. The plan provides retirement, disability and death benefits and annual cost-of-living adjustments to plan members and their beneficiaries. As of June 30, 2008, there were 225 retirees and beneficiaries receiving benefits, 1 terminated plan member entitled to, but not yet receiving benefits, and 220 active plan members.

**Alternate Retirement Program**

The State also sponsors the Alternate Retirement Program (ARP), a defined-contribution plan available to unclassified employees at any units of the Connecticut State System of Higher Education. Plan members are required to contribute 5 percent of their annual salaries, with the State contributing 8 percent of covered salary. During fiscal year 2009, plan members and the State contributed \$35.3 million and \$21.7 million, respectively.

## Funding History and Future Projections for SERS

### June 30, 2008 SERS Actuarial Valuation; Projection for June 30, 2010

The most recent actuarial valuation completed for the SERS plan was as of June 30, 2008, which indicated that the plan's Actuarial Accrued Liability (AAL) was \$19.243 billion, with assets valued at \$9.990 billion, for a funding ratio of 51.92 percent. This funding ratio is among the lowest in the nation, for statewide plans.

### Actuarial Accrued Liability among Tiers for SERS

According to the actuarial valuation as of June 30, 2008, \$14.3 billion of the \$19.2 billion total liability in SERS is attributable to current retirees (a large majority of which are Tier I) and Tier I actives, with the balance associated with active members of Tiers II and IIA. While this is the total liability, the proportion of the unfunded liability for each tier probably bears a similar relationship to the proportion of the total liability. One implication of tiered liabilities is; choices are now limited to reduce the liability for Tier I plan members. Another consideration is that the projections produced by Cavanaugh Macdonald Consulting LLC ("Cavanaugh Macdonald") for the period ending June 30, 2010 and beyond, reflect a significant increase in the unfunded liability for SERS, which will impact all three tiers.

**Schedule 2-SERS Liabilities by Groups/Tiers (as of 6/30/08)**

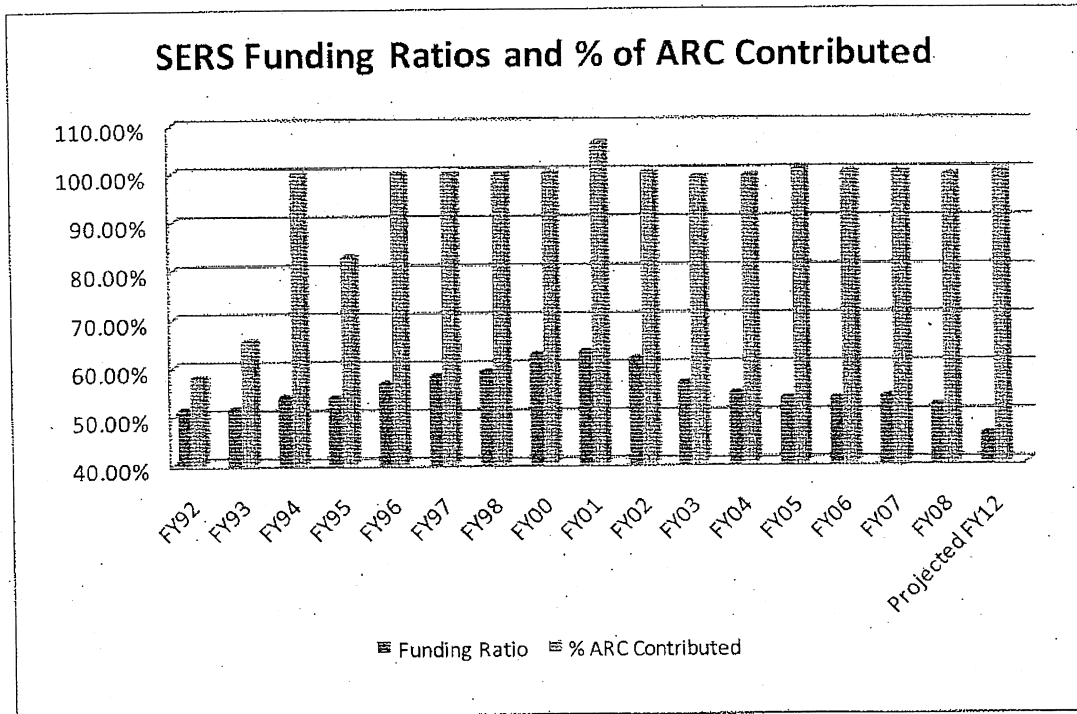
Group	Actuarial Accrued Liability	Normal Costs % of Payroll
Inactives	\$11.4 billion	
Tier I Actives	\$2.9 billion	Hazardous Duty: 13.08 %; B: 13.90 %; C: 10.90 %
Tier II Actives	\$4.0 billion	Hazardous Duty: 14.80 %; all others: 9.75 %
Tier IIA Actives	\$9 billion	Hazardous Duty: 6.95 %; all others: 4.70 %
<b>Total</b>	<b>\$19.2 billion</b>	<b>9.44%</b>

A recent projection done for the Commission by the actuarial firm Cavanaugh Macdonald indicates, based on the loss in value of plan assets, along with lower contributions and the RIP, that the funding ratio will drop to 45.8 percent for the period ending June 30, 2010. A significant ongoing budgetary challenge is the steady increase in the ARC for the years beginning 2011-12 and beyond. The \$1.029 billion ARC projected by Cavanaugh Macdonald for fiscal year 2011-2012 is \$185 million higher than the \$844 million contribution being made by the state in the current year, fiscal year 2010-11, and will continue to increase each year thereafter, until the unfunded accrued liability is fully amortized.

### **Causes of Growth in SERS Unfunded Liability and Lack of Funding Progress**

The SERS plan has historically been underfunded based in part because until the 1980's, it was funded on a pay-as-you-go basis. As can be seen in Chart 1, the funding ratio for this plan is just slightly above the level that existed back in 1992, despite a decision to begin funding the ARC. The lack of funding progress is due to the several contributing factors as described below.

Chart 1



Sources: June 30, 2008 SERS Actuarial Valuation; Projected FY 12 by Cavanaugh Macdonald, new actuaries for SERS **Note:** The Annual Required Contributions above reflect the deductions made based on the interpretation of the requirements related to SEBAC IV and V. The ARC before these adjustments was generally 10% to 15% higher than the ARC shown above.

The factors contributing to the magnitude of the SERS actuarial accrued liability include:

- (1) **Methods of Calculating the ARC.** The Level Percent-of-Payroll method used to calculate the amortization component of a plan's ARC is similar to a home mortgage where mostly interest is paid in the early years. The dollar amount of the ARC rises over time by including an automatic cost escalator (typically 2% to 5% per year). This makes it more difficult to make progress improving the plan's funding ratio until half way through the amortization period.

Under the Level Dollar method, the ARC payment starts higher but does not increase as precipitously over the years as under the percent-of-payroll method. Higher funding in the earlier years provides consistent progress in improving the plan's funding ratio. Charts 2 and 3 below demonstrate the differences in these two methods with projections done in August 2010 by Cavanaugh Macdonald. While both methods of calculating the ARC are acceptable approaches, the actuary's application of the level percent-of-payroll approach helps to explain, in part, why the plan's funding ratio will not show improvement in the near term.

Chart 2

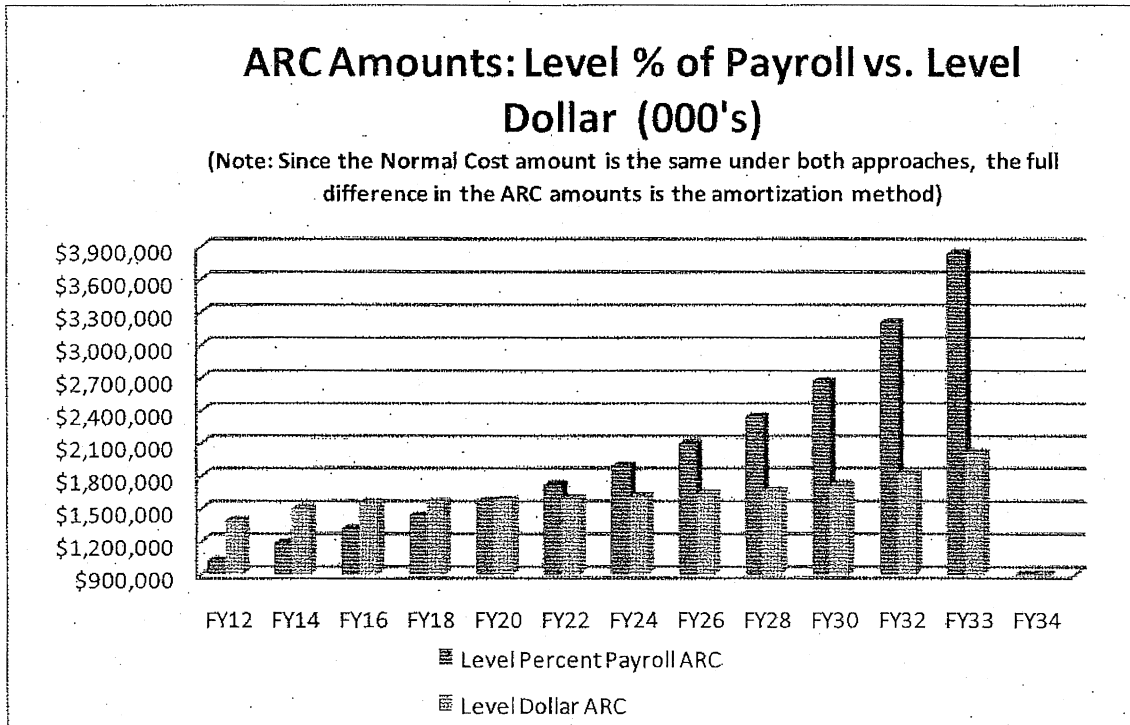
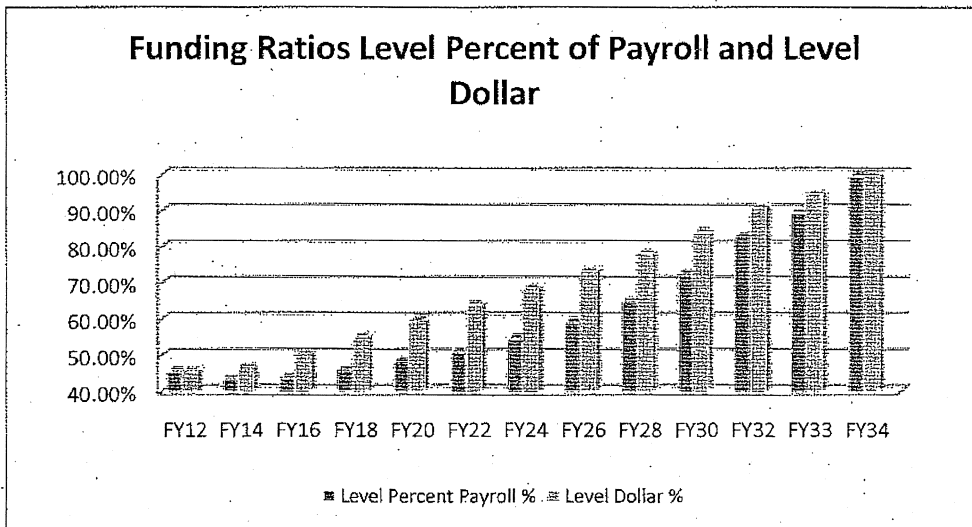


Chart 3



**NOTE:** As seen in Charts 2 and 3, contribution amounts are much larger in the early years under a level-dollar amortization; however, the funding ratio improves more quickly. A similar funding ratio improvement can be achieved using a level percent-of-payroll amortization with a shorter amortization period.

**(2) Adjustments to Amortization Schedule; Contributing less than the Full ARC.** Another critical issue for the SERS plan is the effect that the SEBAC agreements IV and V, negotiated by the State and the coalition in 1995 and 1997, respectively, have had on the ARC calculation. Each year the ARC is calculated in accordance with actuarial standards, and then reduced under interpretations of SEBAC IV and V. These reductions were \$43.7 million and \$61.8 million, respectively, for a total reduction in the ARC of \$105.5 million in the ARC calculation for fiscal year 2011.

The calculations for fiscal years 2002-2011 are provided below in Schedule 3, which reflects adjustments made related to SEBAC IV and V in the 2009 agreement. It is unclear if the provisions of SEBAC IV and SEBAC V have been interpreted correctly in terms of applying these reductions to the ARC. The total reductions for these 10 years is \$820 million, with the full amount through the agreement period likely being \$1.0 billion or more. According to Cavanaugh Macdonald, the impact of the SEBAC IV and V interpretations has been to exacerbate the back-loading of the amortization schedule already inherent in the level percent-of-payroll method, which leads to further growth each year in the ARC and delays improving the plan's funding ratio.

**Schedule 3-ARC Calculation for Fiscal Years 2002-2011 (from Actuarial Valuations)**

ARC Calculation (Amortization Period)	Amortization Payment-Undfunded Liability	Normal Cost	Total ARC before Adjustments	SEBAC IV Asset Adjustment	SEBAC V Asset Adjustment	Reported ARC	Additional Adjustment per SEBAC 2009	Actual Contribution	Actual Contribution as a Percent of ARC before Adjustments
FY2002(3-Yrs)	\$224,822,810	\$254,856,678	\$479,679,488	(\$26,606,725)	(\$37,580,164)	\$415,492,599	N/A	\$415,492,599	87%
FY 2003 (30)	227,445,258	265,853,449	493,298,707	(27,937,061)	(39,459,172)	425,902,474	N/A	421,451,731	85%
FY 2004 (29)	290,512,660	271,856,543	562,369,203	(29,333,914)	(41,432,130)	491,603,159	N/A	470,332,944	84%
FY 2005 (28)	316,448,241	280,857,803	597,306,044	(30,800,610)	(43,503,737)	523,001,697	N/A	518,768,821	87%
FY 2006 (27)	421,328,884	279,753,428	701,082,312	(32,340,640)	(45,678,924)	623,062,748	N/A	623,062,732	89%
FY 2007 (26)	453,571,533	292,275,360	745,846,893	(33,957,672)	(47,962,870)	663,926,351	N/A	663,930,735	89%
FY 2008 (25)	490,600,066	312,360,768	802,960,834	(35,655,556)	(50,361,014)	716,944,264	N/A	711,555,274	89%
FY 2009 (24)	523,100,250	320,915,187	844,015,437	(37,438,334)	(52,879,064)	753,698,039	(\$50,000,000)	\$703,698,039	83%
FY 2010 (23)	663,525,189	335,323,144	998,848,333	(42,040,683)	(59,379,565)	897,428,085	(\$164,500,000)	\$732,928,085	73%
FY2011 (22)	708,627,332	340,926,657	1,049,553,989	(43,722,310)	(61,754,747)	944,076,932	(\$100,000,000)*	\$844,076,932	80%
<b>10 Year Total</b>			<b>\$7,274,961,240</b>	<b>(\$339,833,505)</b>	<b>(\$479,991,387)</b>	<b>\$6,455,136,348</b>	<b>(\$314,500,000)</b>	<b>\$6,105,297,892</b>	<b>84%</b>

\*The FY2011 state budget presumes that the lower state revenue amounts will trigger a provision that allows for a \$100 million reduction in the contribution.



**(3) Investment Return Experience.** When the actual rates of return are less than the actuarial assumption, the result will likely be a decrease in the funding ratio and a costlier ARC. For SERS, the late 1990's reflected strong investment returns while the results from 2001 on, have generally been below the assumed level.

Like all but a handful of states, Connecticut smoothes its investment gains and losses over a set number of years, recording only a portion of the impact each year. This means that under current smoothing techniques the funding levels will likely continue to drop for the next four or five years, as the major losses experienced in 2008 are gradually incorporated. In a year when the pension fund loses value, its position is doubly compromised. It loses both a portion of the funds' assets and the assumed earnings. The Pew Center report notes that the "critical question for states is whether the investment returns of the past two years are anomalous or whether they signal a fundamental change in how the markets will be operating."

In February 2010 the Pew Center on the States Report reported that seventeen states use an investment return assumption of less than 8 percent, while twenty-two others use an 8.0 percent assumption. According to the report, Connecticut is one of eleven states utilizing an investment return assumption greater than 8.0 percent. However, it is important to assess the reasonableness of the return assumption not by itself but in its relationship to the assumed rate of inflation. When returns are lower than expected (an actuarial loss), this is often partially offset by inflation being lower than expected (an actuarial gain).

<u>Fiscal Year</u>	<u>Assumed Rate of Return</u>	<u>Actual Market Value</u>	<u>Actual Actuarial Value</u>
1993	8.50%	11.70%	8.80%
1994	8.50%	4.50%	7.40%
1995	8.50%	13.10%	8.40%
1996	8.50%	14.40%	10.70%
1997	8.50%	19.00%	12.90%
1998	8.50%	17.20%	14.30%
1999	8.50%	10.30%	14.60%
2000	8.50%	13.10%	15.00%
2001	8.50%	-3.71%	9.02%
2002	8.50%	-6.61%	5.84%
2003	8.50%	1.91%	5.08%
2004	8.50%	15.20%	6.74%
2005	8.50%	10.45%	7.37%
2006	8.50%	11.01%	8.03%
2007	8.50%	17.11%	9.80%
2008	8.50%	-4.80%	6.76%
2009	8.25%	-18.58%	2.63%
Compound Return 1993-2009		<b>6.86%</b>	<b>8.97%</b>

**(4) Retirement Incentive Programs (RIP).** Actuaries make pension liability computations based upon assumptions and projections including when employees will retire. There are two kinds of retirement incentive programs; those that incent employees to retire earlier than they might otherwise have; and those that incent employees to delay retirement. Historically, Connecticut RIPs have incentivized employees to retire early by offering additional benefits. These incentive plans add to the state's liability. Conversely, if Connecticut incentivized employees to delay retirement with an actuarially sound plan, the liability would decrease.

**(5) Actuarial Gains and Losses.** There are numerous actuarial assumptions that are made when calculating liabilities and ARCs, including turnover, salary increases and a number of others. To the extent that some of these assumptions are not realized, the actuarial amounts will be different than projected. An overview of the major actuarial methods and assumptions used for State-administered pension plans are included in Schedule 5.

**Schedule 5- Actuarial Methods and Assumptions from Comptroller's June 30, 2009  
Comprehensive Annual Financial Report**

The following is information as of the most recent actuarial valuation:

	<u>SERF</u>	<u>TRF</u>	<u>JRS</u>
Valuation Date	6/30/2008	6/30/2008	6/30/08
Actuarial Cost Method	Projected unit credit cost method	Entry age actuarial cost method using level percent of payroll funding	Projected unit credit cost method
Amortization Method	Level percent of payroll	Level percent of payroll	Level percent of payroll
Remaining Amortization Period	24 Years	29.2 years	23 Years
Asset Valuation Method	20% of declining balance method*	4-year smoothed market	5-year smoothed market
Actuarial Assumptions:			
Investment Rate of Return	8.25%	8.5%	8.25%
Projected Salary Increases	4.0%-20.0%	4.0%-7.5%	5.25%
Includes inflation at	4.0%	4.0%	5.25%
Cost-of-Living Adjustments	2.7%-3.6%	2.0%-3.0%	2.75%-5.25%

\* This method has since been changed to a 5-year smoothed market value.

## **Pensions: Comparisons to Other States, Municipalities and Private Sector**

### **Connecticut's Pension Funding Ratios**

In the Pew Center on the States report on state retirement systems issued in February 2010, the State of Connecticut's combined 2008 funding ratio in regard to its three pension plans of 61.6 percent was the fifth lowest among the fifty states. Similarly, the National Association of Retirement Systems Administrators 2008 survey found Connecticut ranked 49<sup>th</sup> out of 51 states and the District of Columbia in terms of the combined ratio of the SERS and TRS funding ratio (58.5 percent). Individually, the SERS (53.3 percent as of June 30, 2005) and TRS (63.0 percent as of June 30, 2006) plans were 115<sup>th</sup> and 121<sup>st</sup>, respectively, out of 125 statewide plans listed in the survey. The total average funding ratio for all the plans surveyed was 85.3 percent.

### **Connecticut's Pension Plan Provisions**

Comparing pension benefit levels between states is complicated by the differences in the actuarial assumptions utilized (e.g., discount rates) and the timing of valuations. Data for state-administered pension plans from the February 2010 Pew Report indicated that Connecticut's total liability per capita for its three pension plans is 10<sup>th</sup> highest in the country. The data included the liabilities associated with Tier I, which has not had new participants since July 1, 1984.

The Federal Reserve Bank of Boston recently completed a report regarding state pension plans in the six New England States. The report did not include Tier I in Connecticut in its comparisons; since it has not been available to new employees since 1984. In comparing Connecticut's Tier II/IIA plan provisions to plans in other states, the pension salaries at retirement are lower in Connecticut than the other states, with comparisons to Massachusetts and Maine being somewhat more difficult because their employees are not eligible for social security. The other New England states paying into the social security fund for employees have significantly higher employee contribution amounts than Connecticut. The other New England states range from 5.1 percent in Vermont to 8.75 percent in Rhode Island. Connecticut's comparable employee contributions for non-hazardous duty employees in Tiers II and IIA are zero and 2 percent, respectively. The other New England states also generally have a steeper reduction in benefit amounts for early retirements.

Connecticut inflation based cost-of-living adjustments (COLAs) for Tiers II and IIA range from 2.5 percent to 6.0 percent, calculated as a percentage of CPI, with the actuarial assumption used being 2.7 percent. COLA provisions vary across the country and between municipalities in Connecticut. Among New England states, Massachusetts indexes only the first \$12,000 per year, up to a maximum of 3 percent. The maximums in Maine and Rhode Island are 4 percent and 3 percent respectively, while Vermont's range is 1 to 5 percent. New Hampshire has no automatic COLA, but the legislature makes regular ad-hoc adjustments.

In terms of the percentage of final average salary earned per year of service, Tiers II and IIA, representing most members' current benefit accruals in SERS, are lower than other New England states. Another important benefit component is the calculation of final average salaries. Most state plans determine final average salaries over a 3 to 5 year period, with most of those, like Connecticut, being at 3 years. A shorter period results in a final salary that is closer to a person's earnings near retirement, which benefits those with rapidly growing salaries.

A related issue addressed in Connecticut's plans and in others involves "spiking" of final average salaries through increased use of overtime and by other means. Massachusetts's special commission on its retirement systems indicated that 45 of the 108 largest state-administered plans currently have anti-spiking provisions in place. Some states simply have language that prohibits unusual payments just prior to retirement, but twenty-seven plans have percentage limits on the annual increases used in calculating final average salary. These anti-spiking provisions vary, with limits on annual salary growth of 5 to 20 percent, with a median of 10 percent. Connecticut's SERS and TRS limits were annualized at 14 percent in the Massachusetts report. The level of base salaries and the types of additional compensation included in final average salaries (e.g., overtime, longevity) are other critical areas in which plans may differ.

Another issue discussed by the Commission was the ability for members to buy additional years of service in a plan, whether such service was in local government, the military or in other areas. Plans have differing provisions in this regard, however the amount charged for buying additional years should reflect the actuarial value of the added benefit.

There has been some attention given to those who have retired under the SERS plan with pensions of at least \$100,000. These pensions are often related to high salaried positions in our state university systems. Many of these individuals are likely in Tier I. The concerns about these high pensions include what impact they will have on the plan's liabilities and costs and perhaps a sense that high-salaried employees should assume more responsibility for their retirement needs. There is a maximum annual benefit (currently \$195,000, indexed for inflation and adjusted for age at retirement) based on the Internal Revenue Code. Cavanaugh Macdonald projected very minor changes in the ARC associated with placing caps of \$150,000 and \$125,000 on pensions in Tiers II and IIA, respectively. While the annual pension payments for retired members range from very low amounts to these higher amounts, the average pension payment was approximately \$27,500 per year in the June 30, 2008 valuation.

### **Connecticut Municipal Pension Plans**

170 Connecticut municipalities, including both the Town and City of Groton, submitted audit information to the Office of Policy and Management (OPM). Some of the summary data from the June 30, 2008 audit reports related to pension plans is as follows:

- Only 7 municipalities reported not offering a pension plan to any of their employees, while 163 municipalities offer a pension plan to some or all of their employees.

- There were 208 defined-benefit plans, 61 defined-contribution plans, and 45 municipalities participating in the State's Municipal Employee Retirement Fund (MERF) (20 municipalities offered only MERF).
- There were 24 municipalities with a defined-contribution plan only, while 113 had at least one self-administered defined-benefit Plan.
- For the 178 defined-benefit plans for which data was available, the aggregate total actuarial accrued liability was \$8.2 billion with \$6.8 billion in assets, for a funding ratio of 83.3 percent.

#### Private Sector Pension Plans

According to the Employee Benefit Research Institute, a nonprofit research institute in Washington, D.C. in 2008, 79 percent of public sector employees had a defined-benefit plan. In comparison, 33 percent of private-sector employees were enrolled in a defined-benefit pension plan in the same period. Eighteen percent of state workers had a defined-contribution plan in 2008, compared with 55 percent of private sector workers enrolled in a defined-contribution plan.

## State Other Post Employment Benefit (OPEB) Plans

---

### Overview of State Administered OPEB Plans

The State sponsors two defined-benefit OPEB plans: the State Employee OPEB Plan and the Retired Teacher Health Care Plan (RTHP). The State OPEB plan is administered by the State Comptroller's Office, while the RTHP is administered by the Teachers' Retirement Board. While OPEB plans involve life insurance and other non-pension post-employment benefits, almost all of the liability in this area relates to retiree health insurance plans.

### State Employee OPEB Plan

The State Employee OPEB Plan is a single-employer defined-benefit OPEB plan that covers retired employees of the State who are receiving benefits from SERS or other state-sponsored retirement systems, except TRS and the Municipal Employee Retirement System. As of the 2006 OPEB valuation, there were 59,347 active members, 42,395 retired members and 27,266 spouses of retirees, for a total of 129,008 members. Of the 129,008 members, 11,887 were Non-SERS members. These numbers have, of course, changed since the last full valuation in 2006.

A Summary of Plan Provisions is outlined in Schedule 6. OPEB benefits (i.e., Life Insurance, Dental, and Medical) are available for those who retire with a normal, early or disability retirement under the applicable retirement system. Participants who are deemed terminated vested in the retirement system have been, to date, eligible for OPEB benefits when they begin collecting retirement benefits. The "Rule of 75" in the 2009 SEBAC agreement, described later in this report, makes changes in this category. The ability to leave state service after ten years for another job and at later date begin receiving full retiree health benefits is reportedly not found in many other state plans.

#### **Schedule 6: Summary of OPEB Plan Provisions (not including life insurance)**

- Pre-65 retirees have the choice of the State's POE and POS medical plans (PPO plan was closed for future retirees as part of the 2009 SEBAC agreement).
- For those eligible for Medicare, Medicare is primary plan and the State plan is administered as a supplement to Medicare.
- For those who retired before July 1, 1997 or under the 1997 Early Retirement Incentive Program (ERIP), the premium share is zero percent, with participants only responsible for co-pays.
- For those who retired July 1, 1997 to June 30, 1999, the retiree pays 0 percent except those in the PPO plan who pay up to a maximum of approximately 3 percent.
- For those retired July 1, 1999 or later, 'POE/out of area PPO', the premium share is 0 percent, while Pre-65 'POS/PPO' premium shares are a variable amount up to a maximum of about 3 percent for retiree and dependant coverage. Premium shares for Post-65 POS/PPO coverage is 0 percent for retiree coverage and a variable amount for dependant coverage up to a maximum of approximately 3 percent.
- Retirees pay 80% of dental premiums.

**Retired Teachers Health Plan (RTHP)**

The RTHP is a single-employer defined-benefit OPEB plan that covers retired teachers and administrators of public schools in Connecticut who are receiving benefits from the Teachers' Retirement System. The plan provides healthcare insurance benefits to eligible retirees and their spouses. The cost of providing plan benefits is designed to be financed on a pay-as-you-go basis as follows: active teachers pay for one-third of plan costs through a contribution of 1.25 percent of their annual salary, retired teachers pay for one-third of plan costs through monthly premiums, and the State pays for one-third of plan costs through an annual appropriation in the General Fund. As of June 30, 2008, the plan had 30,619 retirees and beneficiaries receiving benefits. In fiscal year 2009, the General Fund contribution was \$22.433 million, although no contributions were made in fiscal years 2010 and likely in 2011 in response to the State's budget situation. The RTHP was recently able to lower its costs associated with its prescription drug plan by purchasing prescription drugs through the state employee health plan.

**State OPEB Actuarial Accrued Liability and ARC Amounts**

Statements 43 and 45 from the Governmental Accounting Standards Board (GASB) required governments to begin reflecting their OPEB liabilities in their financial statements similar to their pension liabilities. As will be discussed, the OPEB plan's actuary uses a 4.50 percent discount rate related to the pay-as-you-go approach, even though no assets are accumulating. The State of Connecticut's first valuation for its OPEB plan was completed for the period ending April 1, 2006. An update to the 2006 valuation was provided for the period ending April 30, 2008. Milliman, the actuary for the State OPEB plan, recently produced an interim report again using the 2008 data. The AAL, ARC and actual state payments from the valuation and updates are in Schedule 7.

**Schedule 7: OPEB Valuation Summaries**

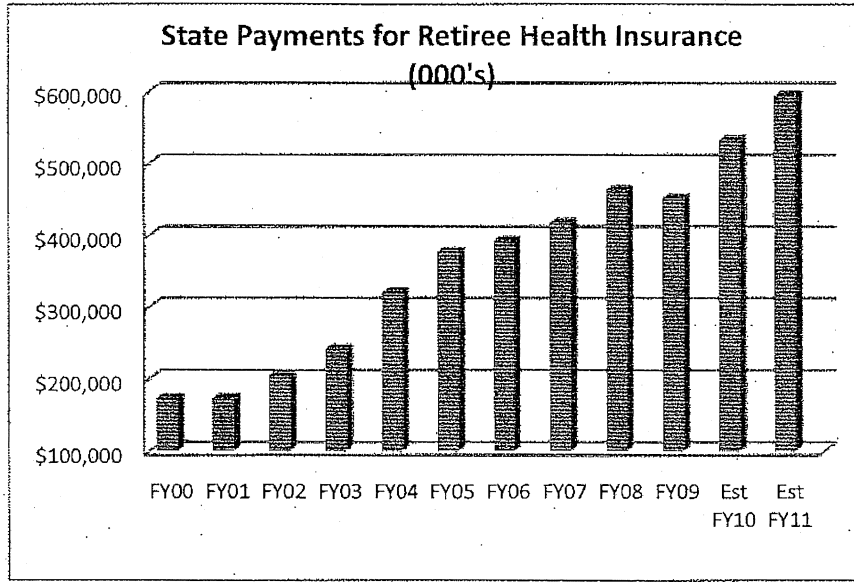
Valuation Date/Discount Rate	Actuarial Accrued Liability (AAL)*	ARC	State Actual Payment
<b>Period Ending April 1, 2006</b>			
• 4.50 % Discount Rate (Pay-as-you-go)	\$21.7 billion	\$1.6 billion	\$.418 billion
• 8.50 % Discount Rate (Pay Full ARC)	\$11.4 billion	\$.96 billion	\$.418 billion
<b>Period Ending April 1, 2008 (update)</b>			
• 4.50 % Discount Rate (Pay-as-you-go)	\$24.6 billion	\$1.66 billion	\$.464 billion
• 8.50 % Discount Rate (Pay Full ARC)	\$13.2 billion	\$1.01 billion	\$.464 billion
<b>Period Ending April 1, 2008(interim July 2010)**</b>			
• 4.50 % Discount Rate (Pay-as-you-go)	\$26.6 billion	\$1.9 billion	\$.464 billion
• 8.25 % Discount Rate (Pay Full ARC)	\$14.0 billion	\$1.2 billion	\$.464 billion

\*The Unfunded Accrued Liability is equal to the AAL because there are no plan assets.

\*\* Does not reflect the 2009 SEBAC agreement, including the RIP, the Rule of 75 and the 3 percent contribution for newer employees for up through 10 years of service.

Connecticut's OPEB funding challenge is finding the additional dollars necessary to fund the ARC. On the other hand, continuing pay-as-you-go will subject the state to a significant and continuing escalation in these costs from a combination of health care inflation and a growing number of retirees. From fiscal year 1999-00 to 2008-09, these costs increased at an annual rate of 11.2 percent.

Chart 4



**Breakdown of OPEB Actuarial Accrued Liability**

Schedules 8a and 8b, which were provided by the actuarial firm, Milliman, provide breakdowns of the actuarial liability and the related ARC for the state OPEB plan reflecting their recent interim update of the liabilities using the April 1, 2008 data. As indicated, these projections do not reflect the 2009 SEBAC agreement. The schedules break out the estimated actuarial accrued liabilities (AAL) and related ARCs for OPEB benefits to be provided to:

- Active employees in Tiers I, II, and IIA and in non-SERS plans;
- Terminated vested employees; and
- Current retirees (In-pay status).

The AAL and related ARCs are further broken down for active and terminated vested employees

- Member (i.e. employee) Pre-65 and Member post-65 and
- Dependant Pre-65 and Dependant Post-65.

The information is provided for a 4.50 percent discount rate (Schedule 8a) and an 8.25 percent discount rate (pay full ARC, Schedule 8b). As can be seen in the schedules, \$14.6 billion of the AAL with a 4.50 percent discount rate is related to active employees and \$11.9 billion related to current retirees and terminated vested employees, for a total AAL of \$26.5 billion. The projected AAL declines to \$14.0 billion when a discount rate of 8.25 percent is utilized as an acknowledgement of fully funding the ARC.



**Schedule 8a: OPEB Liability and ARC Breakdown 4/1/08 Valuation Preliminary Results**

Details of Accrued Liability and ARC (\$000s)

Discount Rate= 4.50% Pay-as-you-go

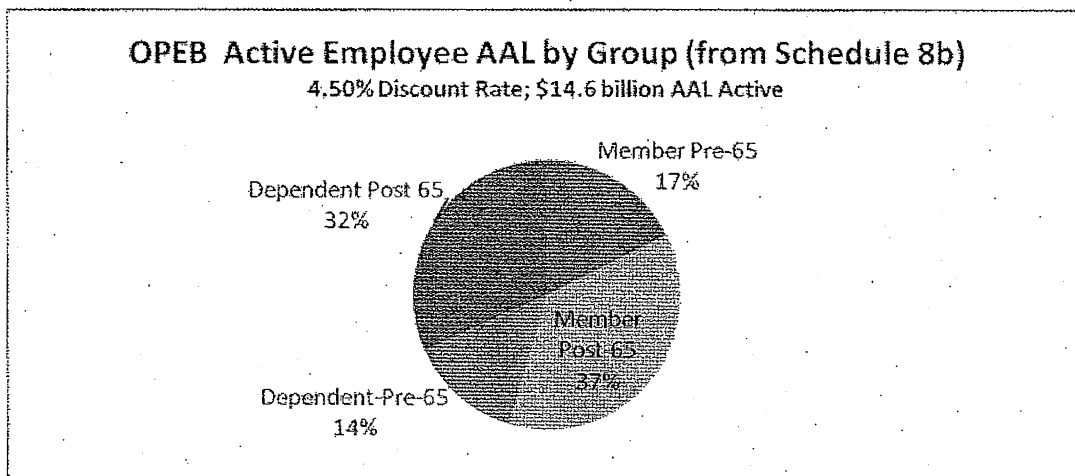
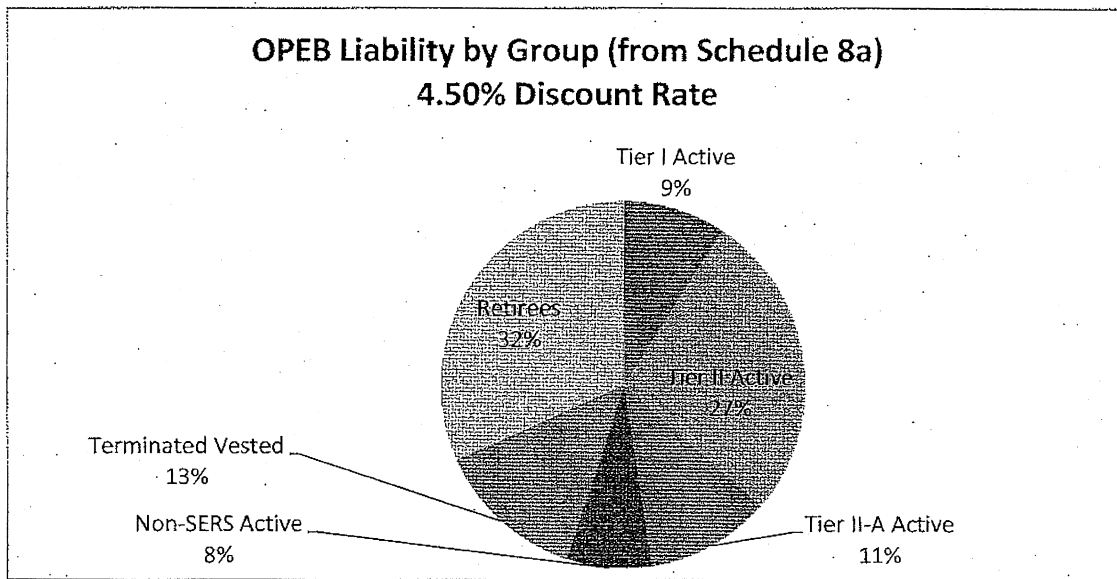
Accrued Liability	Tier I Actives	Tier II Actives	Tier IIA Actives	Non-SERS Active	Total Active	Terminated Vested	In-Pay Status	Total In-pay/Term	Total
Member pre-65	\$390,370	\$1,375,732	\$554,684	\$260,729	\$2,581,515	\$737,155	\$0	\$737,155	\$3,318,670
Member post-65	956,216	2,622,284	1,062,259	766,942	5,407,701	1,223,080	0	1,223,080	6,630,781
Dependant pre-65	280,517	1,058,930	440,585	233,160	2,013,192	587,689	0	587,689	2,600,881
Dependant post-65	792,280	2,199,352	891,622	762,931	4,646,185	946,979	0	946,979	5,593,434
Retirees	0	0	0	0	0	0	8,423,446	8,423,446	8,423,446
<b>Totals</b>	<b>\$2,419,383</b>	<b>\$7,256,298</b>	<b>\$2,949,150</b>	<b>\$2,023,762</b>	<b>\$14,648,593</b>	<b>\$3,494,903</b>	<b>\$8,423,446</b>	<b>\$11,918,349</b>	<b>\$26,566,942</b>
<b>ARC</b>	<b>Tier I Actives</b>	<b>Tier II Actives</b>	<b>Tier IIA Actives</b>	<b>Non-SERS Active</b>	<b>Total Active</b>	<b>Terminated Vested</b>	<b>In-Pay Status</b>	<b>Total In-pay/Term</b>	<b>Total</b>
Member pre-65	\$23,073	\$113,600	\$101,634	\$35,099	\$273,406	\$27,469	\$0	\$27,469	\$300,875
Member post-65	53,474	200,168	187,581	95,486	536,709	45,575	0	45,575	582,284
Dependant pre-65	16,921	88,557	82,163	32,805	220,446	21,899	0	21,899	242,345
Dependant post-65	44,137	169,088	159,619	94,844	467,688	35,287	0	35,287	502,975
Retirees	0	0	0	0	0	0	313,879	313,879	313,879
<b>Totals</b>	<b>\$137,605</b>	<b>\$571,413</b>	<b>\$530,997</b>	<b>\$258,234</b>	<b>\$1,498,249</b>	<b>\$130,230</b>	<b>\$313,879</b>	<b>\$444,109</b>	<b>1,942,358</b>

**Schedule 8b: OPEB Liability and ARC Breakdown 4/1/08 Valuation Preliminary Results**

Details of Accrued Liability and ARC (\$000s)

Discount Rate= 8.25% Pay full ARC

Accrued Liability	Tier I Actives	Tier II Actives	Tier IIA Actives	Non-SERS Active	Total Active	Terminated Vested	In-Pay Status	Total In-pay/Term	Total
Member pre-65	\$273,980	\$833,293	\$286,742	\$152,805	\$1,546,820	\$491,446	\$0	\$491,446	\$2,038,266
Member post-65	432,869	1,026,984	371,414	322,374	2,153,641	458,634	0	458,634	2,612,275
Dependant pre-65	206,123	654,218	229,915	141,374	1,231,630	391,880	0	391,880	1,623,510
Dependant post-65	358,994	855,324	309,705	321,718	1,845,741	358,331	0	358,331	2,204,072
Retirees	0	0	0	0	0	0	5,546,622	5,546,622	5,546,622
<b>Totals</b>	<b>\$1,271,966</b>	<b>\$3,369,819</b>	<b>\$1,197,776</b>	<b>\$938,271</b>	<b>\$6,777,832</b>	<b>\$1,700,291</b>	<b>\$5,546,622</b>	<b>\$7,246,913</b>	<b>\$14,024,745</b>
<b>ARC</b>	<b>Tier I Actives</b>	<b>Tier II Actives</b>	<b>Tier IIA Actives</b>	<b>Non-SERS Active</b>	<b>Total Active</b>	<b>Terminated Vested</b>	<b>In-Pay Status</b>	<b>Total In-pay/Term</b>	<b>Total</b>
Member pre-65	\$21,723	\$84,348	\$55,832	\$22,097	\$184,000	\$28,665	\$0	\$28,665	\$212,665
Member post-65	32,401	94,934	69,327	42,629	239,291	26,752	0	26,752	266,043
Dependant pre-65	16,524	66,763	45,394	21,073	149,754	22,858	0	22,858	172,612
Dependant post-65	26,825	79,513	58,340	42,503	207,181	20,900	0	20,900	228,081
Retirees	0	0	0	0	0	0	323,522	323,522	323,522
<b>Totals</b>	<b>\$97,473</b>	<b>\$325,558</b>	<b>\$228,893</b>	<b>\$128,302</b>	<b>\$780,226</b>	<b>\$99,175</b>	<b>\$323,522</b>	<b>\$422,697</b>	<b>\$1,202,923</b>



**Impact of State and Employee Contributions on Discount Rate and Total Liabilities**

The OPEB plan’s actuary uses a 4.50 percent discount rate to the pay-as-you-go approach, even though no assets are accumulating. This rate represents a long-term expected rate of return on short-term fixed income securities, which are typically found in the assets of the employer. A number of Commission members expressed concern as to whether this 4.50 percent discount rate underestimates the AAL; however, the members deferred to the actuary’s application of standard practices in making these assumptions.

Milliman also produced AAL and ARC projections using a blended discount rate reflecting the 4.50 percent discount rate referenced previously and varying levels of accumulating assets beyond the pay-as-you-go amount. These discount rates are weighted proportionally to the respective reliance

expected to be placed on plan assets to pay OPEB benefits when due or on annual budgets to pay OPEB benefits when due. One scenario involved a 6.08% discount rate related to a partial pre-funding arrangement based upon a State contribution of \$100 million and future State contributions of \$50 million per year increasing by 5 percent per year after the first year. The resulting AAL and ARC amounts are included in Schedule 9.

Another projection was provided by Milliman related to an alternate pre-funding strategy in which an initial State contribution of \$10 million and employee contributions of \$17 million per year growing by 4 percent each year related to the 3 percent of payroll contribution up through 10 years of state employment for those with fewer than 5 years of service as of July 1, 2010 included in the 2009 SEBAC agreement. Recent estimates are that these contributions will be \$23 million in the current year, up from the \$17 million original estimate. Milliman noted that if these employee contributions were used to cover current year cost of benefits, as SEBAC 2009 allows up to 2013, there would be no change in the AAL since there would be no accumulation of assets. On the other hand, if there were to be a policy to place the contributions in the trust for a significant time period (20-30 years or more), there would be an impact on both the AAL and ARC.

Milliman calculated a discount rate of 5.02 percent related to allowing the employee contributions to remain in the trust, with related decreases in the AAL and ARC of \$2.547 billion and \$155 million, respectively, compared to the pay-as-you-go amounts (see Schedule 9). From a budgetary standpoint, the State would be paying for many years to come the full pay-as-you-go amount, which would continue to grow each year. The policy question is at what point plan assets would be used to pay for current expenses since the use of higher discount rates assumes that contributions above the pay-as-you-go amount would remain in the trust for a significant amount of time.

**Schedule 9: OPEB AAL and ARC by Discount Rate (as of April 1, 2008)**

Discount Rate	AAL	ARC
4.50% (Pay-as-you-go)	\$26.567 billion	\$1.942 billion
5.02%	\$24.020 billion	\$1.787 billion
6.08%	\$19.814 billion	\$1.536 billion
8.25% (Pay full ARC)	\$14.025 billion	\$1.203 billion

**Health Care Costs and Trends**

Milliman also did some projections related to the impact on the AAL and ARC associated with changes in the health care inflation trends. The health care inflation trends utilized by Milliman in making their projections were 7.65 percent in the first five years, 5.9 percent for the next five years, and then gradually trending down to 4.70 percent by year 52. Some members questioned if this trend is too high based on the State's experience, however, the Commission understands that there is a great deal of uncertainty with these assumptions.

Milliman's projections demonstrated that changes in the health care inflation assumption have a significant impact on the OPEB plan's liabilities. Milliman projected that a 1 percent ongoing increase above the amount assumed would increase the total OPEB liability by \$3.75 billion, while a 2 percent increase would increase the total by \$8.55 billion (both using a 6.08 percent discount rate). On the other hand, a 1 percent decrease below the baseline trend would lead to a \$2.96 billion projected reduction in liability, with the projected impact of 2 percent reduction below the trend being a decrease of \$5.33 billion in the liability.

If health care cost trends can be brought down through improvements in the delivery of health care, such as the use of medical homes, plan changes and other measures, the impact on lowering the State's annual costs and liabilities associated with its OPEB plan could be significant.

The State is now pursuing a medical home pilot with respect to the state employee plan to determine the impact of this change in service delivery method. The State is also seeking to take part in a multi-payer medical home demonstration project as part of the federal health care reform. The goal of these pilot programs is to determine if the savings from strengthening primary care will be equal to the additional payment levels for primary care. The savings anticipated under the medical home model include those associated with fewer emergency room visits, reducing major illnesses through working with patients to follow testing and other medical protocols and in other areas. One of the serious challenges raised with this model is whether it can work without major reforms to the current fee-for-service payment method.

## **OPEB: Comparisons to Other States, Municipalities and Private Sector**

### **State OPEB Plans and Provisions**

A November 2009 report done by the Center for State and Local Government Excellence found that Connecticut's unfunded OPEB liability per capita was the third highest in the nation, behind only New Jersey and Hawaii. Connecticut is fourth highest in terms of its total liability per capita. Most states, including Connecticut, have zero or a very low level of assets in dedicated OPEB funds, with only 7 or 8 states reporting any meaningful level of funding.

The Center for State and Local Government Excellence report states that the "substantial variation in the unfunded liabilities is a function of the size of the workforce, the generosity of the retiree health plan, the portion of the total cost of the health care program paid by the state, and the type of employees included in the plan." The inclusion or treatment of spouses and dependants is also a factor, as well as the provisions related to retirees who are eligible for Medicare. The extent to which states have certain services provided by county governments could impact these per capita comparisons as well. Unlike a number of other states, Connecticut does not have county governments.

As an example of these differences, in a 2007 report, the Federal Reserve Bank of Boston indicated that among the New England states, benefit payments per eligible retiree in 2006, recorded on

a pay-as-you-go basis, ranged from approximately \$3,300 for Maine to \$11,000 for Connecticut, according to the states' Comprehensive Annual Financial Reports. There are also a number of states across the country whose liabilities are limited to or include only the "implicit subsidy" involved with allowing retirees (who generally have higher medical costs than younger active workers) to participate in the state's plan with the retiree paying the full premium. Premium sharing by Connecticut retirees is currently minimal, ranging from zero to 3 percent.

Commonly state employees go directly into retirement in order to receive state employee retiree health insurance, rather than leaving State employment with the idea of collecting benefits years later.

A number of states prorate the amount of premium share paid by retirees based on the number of years of service. The report of the Massachusetts special commission on its retirement systems issued in 2009 listed thirteen states whose retiree health plans include a percent reduction for each year of service below a certain number (e.g., 20 years) in the amount of premium to be paid by the state, while 9 states have a dollar amount reduction for each year of service below a certain number. These reductions make retiree health plans analogous to pension plans in that the amount of the benefit received is correlated to the number of years of service provided. Other states have rules similar to Connecticut's Rule of 75 related to retiree health care eligibility.

#### **Municipalities and the Private Sector**

Fiscal year 2008 was the first year for many municipalities to include OPEB status information, based on an actuarial valuation, in their financial reports. Aggregating the data for the 25 Connecticut municipalities having valuations, the total actuarial accrued liability was \$5.0 billion, with assets of \$3,200,000, for a funding ratio of less than 0.1 percent.

While not reporting funding ratios related to the private sector regarding OPEB-type benefits, the Kaiser Family Foundation's Employer Health Benefits Survey for 2009 did contain information about the percentage of firms that offer active health benefits that also offer retiree health benefits. Of all large firms of 200 or more workers that offered active employee health insurance, 29 percent of these employers offer retiree health benefits. State/local government was the highest at 81 percent. Of the large firms that do provide retiree health insurance, 92 percent provide retiree health benefits to early retirees, with 68 percent offering retiree health for Medicare-Age Retirees. The percentages for State/local government surveyed in this regard were 100 and 73, respectively.

## **Impact of Pension and OPEB Liabilities on State's Budgetary and Financial Outlook and Credit Ratings**

---

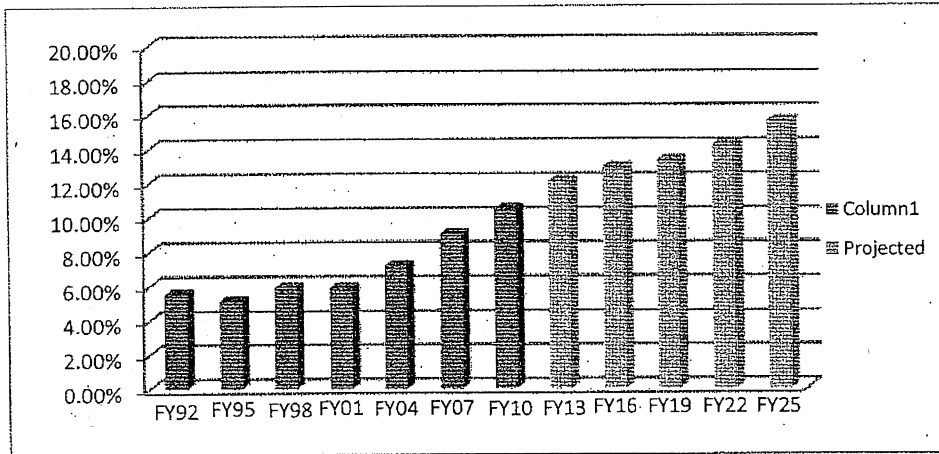
### **State Pension and OPEB Costs as an Increasing Portion of State Expenditures**

In order to provide a baseline for the potential budgetary and funding implications of continuing current approaches and practices, Schedule 10 provides actual and projected expenditures for a 40 year period related to the State budget and contributions to SERS, TRS and OPEB. Schedule 10 also provides available actual and projected funding ratios, where available. The projections for future years in the schedule involved making certain assumptions, which are outlined in the notes to the schedule. These assumptions include:

- State expenditures will grow at 4.75 percent per year, the average from 1992 through the 2014 projection amount;
- SERS contributions will reflect the Cavanaugh Macdonald projections using the current funding method;
- TRS contributions and POB debt service based on a 2007 contribution schedule done for the State by the Public Resources Advisory Group (PRAG) and the debt service schedule from the Treasurer's Office; and
- OPEB state costs to increase by 10 percent per year. This last assumption is based on the average increase for 2000 to 2009 of 11.2 percent per year.

As indicated in Schedule 10, the costs for SERS, TRS and OPEB grew from 5.57 percent of budgeted expenditures in 1992 to 11.24 percent of expenditures in the current year, fiscal year 2010-11. These costs grew by an average of 8.8 percent per year during from 1992 to 2011. Using the assumptions described above, annual costs for SERS, TRS, and OPEB are projected to reach 18.97 percent of the budget in fiscal year 2032. The growth for fiscal year 2012 alone is almost \$270 million higher than that expended in these areas in the current fiscal year. The challenge for the State will be to balance the need to increase the funding ratio of its pension and OPEB plans with the need to manage its overall budgetary needs. These increasing costs could crowd out additional investments in education, infrastructure, health care, and other critical areas.

**Chart 5**  
**Pension and OPEB Actual and Projected Costs as a Percentage of State Expenditures**  
**(from Schedule 10)**



Schedule 10

Table with 13 columns: Col 1 (Fiscal Year Ending 3/31/00), Col 2 (All Appropriated Funds - Actual/Projected), Col 3 (SERs, State's Actual/Projected Contribution), Col 4 (TRS, State's Actual/Projected Contribution), Col 5 (TERs, POB Debt Service), Col 6 (Actual/Projected Costs, OPEB), Col 7 (Total SERS, TERs, POB & OPEB), Col 8 (% of Expenditures SERS, TERs, POB & OPEB), Col 9 (% Growth Expenditures), Col 10 (Funding Ratio SERS, TERs, POB & OPEB), Col 11 (Funding Ratio SERS, TERs, POB & OPEB), Col 12 (Funding Ratio IERS), Col 13 (Funding Ratio OPEB). Rows include years from 1992 to 2032.

Data sources and projection assumptions:
Fiscal Year ending June 30 of year noted in column...
General Fund, Transportation funds, other appropriated funds, surplus (primarily one-time items), and appropriations...
Budget books, 2010 to 2014 (June 30, 2010 OFA projection, 2015 to 2032 reflects average annual increase of 4.75%...)



### Impact on Financial Outlook and Credit Ratings

Demographic factors must be considered when analyzing and seeking solutions to the State's pension and OPEB liabilities. Nationwide and in Connecticut, the ratio of active workers to retirees will continue to decline as the baby boom generation ages, leaving fewer workers to pay for amortization of past liabilities.

Connecticut's state spending growth has outpaced its population growth, increases in gross state product, and income growth over the past several decades. Although job growth in the State has lagged that of the nation, Connecticut residents' income growth has outperformed national growth over the long-term. In fact, Connecticut continues to have the highest per capita income in the nation. Commission members have noted, however, that there is a growing income disparity, in which those at the higher end of the income scale have seen their incomes rise rapidly through the years in contrast to those in the lower and middle income levels.

Connecticut was 5<sup>th</sup> highest in terms of state taxes per capita in 2009, while it was 19<sup>th</sup> highest in terms of state taxes as a percentage of income. For total state and local taxes, Connecticut was 5<sup>th</sup> highest on a per capita basis and 11<sup>th</sup> highest in terms of per capita taxes as a percentage of income.

The bond rating agencies give a third-party view of Connecticut's financial to potential creditors. These bond ratings have an impact on how much the State will pay in interest on the bonds it issues to pay for capital projects. The rating criteria used by the agencies include the following factors: the State's economy; debt structure; financial condition; demographic factors; and management practices of the governing body and administration. The three major rating agencies have Connecticut rated in the middle tier of the high quality category (Moody's: Aa2; Fitch AA; and Standard and Poor's: AA). The best quality category is marked by those with AAA ratings. Fitch had temporarily raised Connecticut's bond rating to AA+ but reduced it in 2010 to AA based on the state's budgetary problems.

In a recent article about pension funding, Standard and Poor's noted that the decline in public pension fund assets, which has occurred across the country, is contributing to the type of budget distress that States are experiencing. A separate report also asserted Standard and Poor's position that pension liabilities and the costs associated with them on an annual basis are an important credit factor. Rating agencies are interested in the steps states are taking and the overall plans they have in place to address these liabilities, which they understand must be funded over time.

In addition to appropriate planning, ratios and other measures are used by the rating agencies to determine the level of flexibility states have to address their fiscal challenges. In this regard, Standard and Poor's July 8, 2010 report indicated that Connecticut has the second highest combined debt and pension unfunded liability per capita as a percent of income in the country. High liability levels reduce the State's flexibility to address other critical services and investments to maintain Connecticut's competitive advantage.

### **Actions Taken in Other States Regarding Pension and OPEB Liabilities**

---

The Pew Report noted that fifteen states passed legislation in 2009 to reform some aspect of their state run retirement systems, compared with twelve states in 2008 and eleven in 2007. Legal restrictions regarding reducing benefits for current employees shifted many of the changes to benefits for new employees.

Ten states increased the contributions made by current and new employees to their benefit systems, while ten states lowered benefits for new employees or set higher retirement ages or longer service requirements. A 2009 report from the Center for State and Local Government Excellence indicates that a number of states have amended their retiree health plans to address the related costs and liabilities. Changes have included higher premium shares, higher deductibles, higher co-payments and more years of service to qualify for retiree health coverage. Pew places the changes into five general categories:

- Keeping up with funding requirements;
- Reducing benefits or increasing retirement age;
- Sharing the risk with employees;
- Increasing employee contributions; and
- Improving governance and investment oversight.

The range of actions taken by other states to address pension and OPEB liability issues was gathered by the National Conference of State Legislators, which actions are summarized in Appendix 3.

## **Potential Strategies to Address Pension and OPEB Liabilities and Costs**

---

### **Pension Plans**

#### **Overall Strategy**

The size of State's unfunded pension liabilities are a result of many factors. The early approach to the SERS Plan was pay-as-you-go, there was no prefunding of future benefit payments. Even after a decision was made to prevent the growth of the unfunded liability and to amortize the past liabilities over time through payment of the ARC, little progress has been made in improving the Plan's funding ratio for the reasons described in this report. This has recently been exacerbated by losses in asset values, which affected plans throughout the country. Using the current funding strategy, the funded ratio is projected to drop from its June 30, 2008 level of 52 percent down to 46 percent as of June 30, 2010 based on preliminary projections done by Cavanaugh Macdonald.

Cavanaugh Macdonald also projected that the ARC for fiscal year 2012 will be \$185 million higher than the contribution being made in the current year, and will grow each year thereafter until the unfunded accrued liability is fully amortized. Even with these growing ARC amounts, the funding ratio is projected to decrease further over the next few years and not rise above 46 percent until 2016, based on the current calculation methods.

Given the State's serious budgetary challenges over the next several years, and the pressure that the growing costs of the State's retirement systems place on other budgetary needs, a number of approaches need to be considered to reduce the unfunded pension liabilities of the State. Consideration should be given to new funding strategies, financing alternatives, plan design and benefit modifications. It is critical in the Commission's view, to reinvest any benefit related State ARC savings into reducing the plan's unfunded liabilities.

Finally, the Commission discussed the potential benefits and drawbacks of creating a defined-contribution plan in lieu of a defined-benefit plan for new employees, or a hybrid plan that would include both a defined-benefit and defined-contribution component for these employees.

It is important to note that there are Commission members who did not agree with some of the strategies presented below in regard to the State pension and OPEB plans. Also, the Commission did not seek to prioritize these strategies. The main goal of this report has been to provide information and potential approaches to addressing these liabilities to policy-makers and stakeholders.

## Funding Strategies

### Paying the Annual Required Contribution (ARC)

Paying the ARC calculated under accepted actuarial standards and a carefully structured funding policy, each and every year, would put the state on a surer path towards reducing and eventually eliminating its unfunded pension liabilities and limiting further growth in these liabilities. When the ARC is not fully contributed, the State falls behind in improving its funding, which in turn increases future ARC costs. The State also loses the investment income assumed to be achieved on the timely payment of the calculated ARC.

- 1) *The State should, each year, make the full ARC payment determined by its plan actuaries in accordance with accepted actuarial principles and the State's funding plan.*

### Calculating the ARC

In addition to paying the ARC each year, it is critical for the State to review how the ARC is calculated. Some of the issues, which have been described in this report, include:

- *Approaches to Calculating the ARC: Level Percent-of-Payroll vs. Level Dollar.* The State, like many other public plans, uses the level percent-of-payroll approach to calculate the amortization component of the ARC for its three major plans. This approach back-loads the amortization of the unfunded liabilities, resulting in steady increases each year in the ARC and slower progress in improving a plan's funding ratio. In contrast, the level dollar amortization approach, as demonstrated by the Cavanaugh Macdonald projections (see Schedule 11 below), increases the funding ratio more rapidly and achieves budget stability through smaller annual increases in the ARC. The ARC is significantly higher in the earlier years with the level dollar approach.

Another issue of great concern involves the reductions made to the ARC based the interpretation that has been given to certain provisions of SEBAC IV and SEBAC V. For the past ten years, the reductions to the ARC related to these agreements total nearly \$820 million, and likely total \$1.0 billion or more for all of the years of the agreement period. The impact of these reductions is a further back-loading of the payment schedule and an accompanying lack of progress in improving the funding ratio of the Plan. Exacerbating this concern is that the SEBAC 2009 agreement allowed for additional reductions in pension contributions of \$314 million over the period of fiscal years 2009 to 2011.

While difficult to achieve from a budget standpoint, the Cavanaugh Macdonald projections found in Schedule 11 demonstrate that payments beyond the current ARC levels would have a significant impact of improving the State's funding position and lowering its annual budget costs in the long-term.

**Schedule 11: Comparison of ARCs, Funding Ratios, Level Percent of Payroll vs. Level Dollar Methods**  
(000's) (taken from Appendix 4 of this report)

Fiscal Year Ending	Level Percent of Payroll ARC Appendix B Attachment 2	Level Percent of Payroll Funding Ratio Appendix B Attachment 1	Level Dollar ARC Appendix B Attachment 2	Level Dollar Payroll Funding Ratio Append. B Attachment 1	Difference in ARC: Level \$ minus Level %	Difference in Funding Ratio Level \$ minus Level %
6/30/12	1,029,991	45.8%	1,393,288	45.8%	363,297	N/A
6/30/15	1,272,116	42.8%	1,558,482	47.7%	286,366	4.9%
6/30/18	1,438,420	46.2%	1,570,442	55.3%	132,022	9.1%
6/30/21	1,645,126	49.9%	1,593,733	62.1%	(51,393)	12.2%
6/30/24	1,895,189	55.0%	1,618,180	68.8%	(277,009)	13.8%
6/30/27	2,217,889	62.1%	1,657,110	76.0%	(560,779)	13.9%
6/30/30	2,670,732	72.9%	1,720,765	84.4%	(949,967)	11.5%
6/30/33	3,839,879	89.8%	2,013,616	94.9%	(1,826,263)	5.1%
6/30/36	326,738	100.0%	326,738	100.0%	0	0%

Note: The actuaries' application of SEBAC IV and V reductions are reflected in all of the above projections.

- *Actuarial Assumptions, including Investment Return/Discount Rate Assumption.* If the actual investment returns are lower than those assumed in the actuarial valuation, the result will be a growth in the unfunded liabilities and the ARC going forward. In comparing Connecticut to other states, our assumed rate of return of 8.25 percent is higher than the 8.0 percent or below that is assumed by thirty-nine other states. The real rate of return (total return less inflation) assumed by Connecticut is near the median of statewide assumptions.

A lower investment return rate would reduce the impact of a loss in plan asset values, but would increase the amount of the ARC. The actuarial rate of investment returns for SERS for the past decade have generally been below the actuarial assumed rate, and will remain below this level for a number of years as 2008 investment losses are incorporated into the calculations of the actuarial rate of return. While the investment return assumption is important, this assumption must be viewed in the context of all of the assumptions used in calculating actuarial liabilities.

- 2) *The State should eliminate the reductions in ARC payments as has been interpreted in SEBAC IV and V.*
- 3) *The State should consider decreasing its assumed rates of return and inflation to reflect more realistic and conservative expectations about the economy and capital markets.*
- 4) *The State and SEBAC should adopt a more rigorous funding strategy targeted at achieving specified minimum funding ratios over time. This enhanced funding could be financed through additional state and employee contributions and plan modifications.*

*An example of such targeted funding ratios follows:*

	<u>Targeted Funding Ratio</u>	<u>Projected Ratio: Current Method</u>
• Fiscal Year Ending 6/30/15:	47.5 percent	42.8 percent
• Fiscal Year Ending 6/30/18:	55.0 percent	46.2 percent
• Fiscal Year Ending 6/30/21:	62.5 percent	49.9 percent
• Fiscal Year Ending 6/30/24:	70.0 percent	55.0 percent
• Fiscal Year Ending 6/30/27:	75.0 percent	62.1 percent

- 5) *The State should consider adopting a funding policy which addresses both Tier I legacy liabilities and ongoing accruals for Tiers II and IIA. One possible strategy is to install a contribution minimum. The minimum amount contributed to the SERS fund in a given year by the State shall not be less than the sum of expected benefit payments to Tier I retirees and the employer normal cost for Tiers II and IIA.*
- 6) *The State should require that each pension and OPEB valuation contain a projection for each year of the remaining amortization schedule, thereby highlighting the long-term impact of its funding practices.*

#### **Employee Contributions to the Fund**

As described earlier in this report, hazardous duty employees in Tiers II and IIA contribute 4 percent and 5 percent, respectively, towards the SERS Plan, while other Tier II employees contribute nothing and Tier IIA employees contribute 2 percent. Other New England states have employee contribution rates of between 5.1 percent and 8.75 percent for non-hazardous duty employees. Increasing employee contributions is among the strategies employed in a number of states to address these liabilities.

Based on an active employee payroll of almost \$3.2 billion preliminarily projected by Cavanaugh Macdonald for the period ending June 30, 2010, each 1 percent increase in average employee contributions would add \$32.0 million in contributions. These contributions likely could be made on a pre-tax basis, thereby mitigating the impact on employees.

While the State is currently experiencing serious and continuing budgetary challenges, there have been provisions proposed and/or enacted in the past to dedicate a portion of operating budget surpluses to addressing pension, OPEB or other long-term liabilities. The longer-term positive impact on pension, OPEB and other liabilities of consistent and significant funding above the current ARC has been demonstrated by actuarial work done for the Commission. Another approach, reportedly considered in Massachusetts, is to dedicate a portion of cyclical revenues (e.g., capital gains tax) to a pension and/or OPEB trust when these revenue sources go above a certain levels.

- 7) *The State and SEBAC should consider increasing employee contribution rates to levels found in other states, taking into account differing benefit levels and plan funding ratios. A study may be needed to determine appropriate levels of cost sharing between employer and employee. Such additional contributions should go towards moving the State fully or closer each year to achieving the recommended minimum funding ratio targets.*
- 8) *In addition to the State meeting its obligation to pay the ARC each year, a mechanism for dedicating a specified proportion of future operating budget surpluses or large increases in cyclical revenue sources towards the pension and OPEB liabilities should be enacted.*

#### Pension Obligation Bonds

Pension Obligation Bonds (POBs) are generally defined as a type of general obligation bond issued to reduce the unfunded liabilities of a defined-benefit pension plan. POBs can help a government to lower its costs of carrying an unfunded liability, particularly when: (1) the cost of issuing POBs is lower than the cost of carrying the unfunded pension liabilities at the plan's assumed rate of return; and (2) the rate of return on the amount borrowed and ultimately invested is greater than the interest on the bonds (which, according to federal tax law, are taxable). An important element of this approach is that the government issuing the POBs should continue to pay the actuarially recommended contribution (ARC) associated with whatever unfunded liability remains after the bond issuance. Some issuers have used POBs to fund their current contribution, and this can add to budget instability.

POBs have been issued by a number of governmental entities across the nation, including several municipalities here in Connecticut. In 2008, the State of Connecticut issued POBs in order to reduce the unfunded liability of the Teachers' Retirement System (TRS) and to ensure future funding through a bond covenant.

Current market conditions suggest that POBs for SERS could be issued at a taxable rate of approximately 5.75%. Consequently, an issuance of POBs would be feasible only if a number of conditions were satisfied, chief among them: the average rate of return over the life of the bonds must exceed the cost of borrowing by an acceptable margin. As a frame of historical reference, the SERS' annualized net return for the period ended June 30, 2010 was 12.93% for the 2010 fiscal year; 2.89% for ten years; 6.71% for fifteen years; 7.08% for twenty years and 8.02% for twenty-five years. These figures reflect the extraordinary global economic crisis in 2008 and 2009, which resulted in a -18.3% return for fiscal year 2009.

The economic conditions and experiences that justified Connecticut's issuance of POBs in the Spring of 2008, may not now exist for SERS. Prospects for long-term investment returns have moderated following the financial meltdown of the fall of 2008, and leading indicators suggest very slow economic growth following the ensuing recession. Consequently, a number of factors suggest that the issuance of POBs to reduce the unfunded liability of SERS may be unwarranted at this time. Among them:

- Impact on State Debt Levels: The issuance of POBs for SERS would increase the State's debt levels. Given that Connecticut already has relatively high debt levels, the Governor and legislature must consider any POB in the context of other competing priorities for bonding during a period of budget stress.
  - Financial Flexibility: The issuance of POBs converts the State's commitment to fund annual pension contributions for a portion of the unfunded liability to a fixed debt liability. When the State issued POBs for the TRS, one of the primary objectives was to bind the State to fully funding the ARC going forward, allowing the fund to gain the benefit of compounding of investment earnings over time and to end the practice of chronic underfunding. However, in the case of SERS, under its labor agreements in effect through 2017, the State has already committed to fully fund the ARC annually -- although the State has recently negotiated reductions in such payments.
  - Rating Agency Views: The State needs to consider how a POB for SERS could be viewed by rating agencies given the State's existing debt levels. Since the rating agencies already include unfunded pension liabilities in the State's total long-term obligations, these liabilities are already accounted for, but POBs will be considered a hard liability. If the State issues bonds to fund current pension contributions, it would be considered a deficit financing by the credit rating agencies. The State did not use the POBs issued in 2008 to fund current contributions for TRS.
  - Prospect for Long-Term Investments Returns: The potential benefit of a POB is the spread between the POB debt cost and the long-term return on assets. The State needs to consider the risk of earning certain levels of future investment returns in the near and long-term and incorporate that into any decision to issue POBs. If the State does not earn at least the debt cost over the long-term through the investment of proceeds from the issuance of POBs, then the transaction will result in dissavings.
- 9) *Pension Obligation Bonds, if properly structured and timed, could help a government to lower its costs of carrying an unfunded pension liability, but there are a number of issues and risks that must be carefully considered before issuing bonds for this purpose. A number of factors, however, suggest that the issuance of POB's may be unwarranted at this time.*



### **Plan Design and Benefit Modification Strategies**

Tiers II and IIA, the SERS plan benefits offered to employees hired after 1984 are, in a number of respects, reasonable in terms of a defined-benefit plan when compared to other states in New England. In reviewing the options outlined below, the Commission considered areas where modifications may be appropriate in light of similar provisions in other governmental plans. The need to consider modifications, however, is based on the need to make these plans sustainable for the State, its employees and taxpayers. As noted previously, the State's funding progress is among about the worst in the country.

The Commission considered the degree to which employees have made future plans based on the plan provisions as they now exist. This becomes a greater issue, the closer an employee is to retirement. The impact of the disruptions and serious declines in the financial markets, however, will likely cause many individuals to delay their retirement age throughout our state and country. The economic downturn has also challenged the ability of governments to pay for commitments made to both its employees and its citizens.

### **Conducting Actuarial Valuations of Proposed Plan Changes, Early Retirement Programs and Other Major Actions**

A major goal for the Governor in creating the Commission was to increase the level of transparency and understanding of pension and OPEB liabilities and costs. During a budgetary crisis or legislative session, the ability to undertake a full vetting of the impact of changes affecting pension or OPEB liabilities, can be limited. This type of information, however, is necessary for elected officials and the public, in terms of assessing the short and long-term impacts of actions contemplated in these areas.

***10) A mechanism should be established to require and obtain independent actuarial information regarding the impact of plan changes and other major actions affecting pension and OPEB plan liabilities for each of the years remaining in the plan's current amortization schedule prior to the enactment of any such changes or actions. Any change that increases a plan's unfunded liability should be accompanied by a funding strategy to fully address such increased liability.***

***11) The State should seek to avoid future retirement incentive programs, unless: 1) a multi-year actuarial analysis is first undertaken and 2) a method of funding any actuarial losses is identified and implemented.***

### **Increasing Retirement Age or Providing Incentives to Retire Later; Other Pension Benefit Modifications**

The Federal Reserve Bank of Boston recently reported that traditional pension plans for most state employees in New England discourage continued work at older ages. This places stress on plans as people live longer and involves the macroeconomic question of how a proportionately smaller working-age population can support the unfunded liabilities of a proportionately larger retirement population. While Connecticut's percentage of final average salaries paid under Tier II and Tier IIA are lower than

other states, these other states generally have a steeper reduction, greater than Connecticut's 3 percent per year, for early retirements. Connecticut's 3 percent reduction does not reflect the full actuarial impact of those retiring earlier. A related incentive to retire early is that Connecticut offers early retirees health insurance at a lower cost than if they kept working.

The potential impact on total liabilities and ARC costs from delaying the age for early and normal retirements and increasing the reductions associated with early retirements was projected by Cavanaugh Macdonald. In addition to pension plan impacts, delaying the age of retirement would have an impact on the State's OPEB liability because the State only pays for a supplemental plan once a retiree reaches Medicare eligibility. Actuarial estimates were requested for all of Tier II and all of Tier IIA actives under four scenarios:

**Scenario 1-Tier II, Non-Hazardous:**

- Proposed Early Retirement Eligibility: Age 62 with 10 years of service (Current: Age 55, 10 years);
- Proposed Normal Retirement: Age 65 and 10 years or 70 and 5 (Current: 62 and 10, 60 and 25 or 70 and 5); and
- Early Retirement Reduction change from 3% to 6%.

**Scenario 2-Tier IIA, Non-Hazardous:**

- Proposed Early Retirement Eligibility: Age 62 with 20 years of service (Current: Age 55, 10 years);
- Proposed Normal Retirement: Age 65 and 10 years or 70 and 5 (Current: 62 and 10, 60 and 25 or 70 and 5); and
- Early Retirement Reduction change from 3% to 6%.

**Scenario 3-Tier II, Hazardous:**

- Eligibility of Retirement: 25 years of service (Current: 20 years of service)

**Scenario 4-Tier IIA, Hazardous:**

- Eligibility of Retirement: 25 years of service and age 55 (Current: 20 years of service)

The full schedules for these changes done by Cavanaugh Macdonald, and the baseline related to current plan are in Appendix 4. Schedule 12 below compares the ARC with each of these scenarios to the baseline related to the current plan, as well as a total for the four scenarios.

**Schedule 12-Comparison of ARCs for Scenarios 1 to 4 with Baseline**

Based on Level Percent of Payroll (000's)

Fiscal Year Ending	Baseline ARC	Scenario 1 ARC	Scen. 1 ARC Savings	Scenario 2 ARC	Scen. 2 ARC Savings	Scenario 3 ARC	Scen. 3 ARC Savings	Scenario 4 ARC	Scen. 4 ARC Savings	Scen 1-4 Total Savings
6/30/12	1,029,991	974,615	(55,376)	1,008,257	(21,734)	993,993	(35,998)	1,008,094	(21,897)	(135,005)
6/30/15	1,272,116	1,199,751	(72,365)	1,238,826	(33,290)	1,229,189	(42,927)	1,233,628	(38,488)	(187,070)
6/30/18	1,438,420	1,367,317	(71,103)	1,403,752	(34,668)	1,403,933	(34,487)	1,387,500	(50,920)	(191,178)
6/30/21	1,645,126	1,574,830	(70,296)	1,610,540	(34,586)	1,611,453	(33,673)	1,584,579	(60,547)	(199,102)
6/30/24	1,895,189	1,826,693	(68,496)	1,856,527	(38,662)	1,851,637	(43,552)	1,838,965	(56,224)	(206,934)
6/30/27	2,217,889	2,143,540	(74,349)	2,172,387	(45,502)	2,163,483	(54,406)	2,164,932	(52,957)	(227,214)
6/30/30	2,670,732	2,575,063	(95,669)	2,618,229	(52,503)	2,605,127	(65,605)	2,625,400	(45,332)	(259,109)
6/30/33	3,839,879	3,709,911	(129,968)	3,783,185	(56,694)	3,762,792	(77,087)	3,782,279	(57,600)	(321,349)
6/30/36	326,738	329,305	2,567	298,188	(28,550)	324,923	(1,815)	288,752	(37,986)	(65,784)

While the changes described above would likely have some overall positive impact on the plan's funding ratio, "reinvesting" the ARC savings into the plan would help Connecticut reach the minimum funding ratio targets.

**12) The State and SEBAC should consider raising the retirement age for those in Tiers II and IIA and increase the reductions related to early retirements in order to achieve ARC savings, which should be applied towards achieving the recommended minimum funding ratio targets.**

In order to test the impact of certain proposals on the ARC, Cavanaugh Macdonald provided actuarial projections, using the 2008 valuation data (which does not reflect the 2009 Retirement Incentive Program and other changes since 2008), with respect to the potential changes described below. Actuarial estimates were only requested for Tiers II and IIA since, at this point, it was considered to be too late to consider changes in Tier I.

**Schedule 13: Impact of Various Benefit Changes**

Potential Change for Currently Active Employees	% Change in Normal Cost	% Change in ARC	\$ Savings in ARC-1 <sup>st</sup> Year (Savings would grow as ARC grows)
Tier II-Final Average Salary based on last 5 years (not current three)	(0.17%)	(0.48%)	\$17.4 million
Tier IIA-Final Average Salary based on last 5 years (not current three)	(0.09%)	(0.13%)	\$4.7 million
Tier II-COLA capped at 2.0%	(0.35%)	(0.84%)	\$30.4 million
Tier IIA-COLA capped at 1.5%	(0.29%)	(0.44%)	\$15.9 million
Tier II-Maximum Pension-\$150,000		(0.01%)	\$.5 million
Tier IIA-Maximum Pension-\$125,000	Liability decrease too small for impact on ARC		\$0

Based on the time and costs related to obtaining actuarial estimates, projections were not obtained for all potential changes, including those related to spiking, rates charged for additional years of service for military, local government or other service, and others being implemented in other states (see Appendix 3).

**13) The State and SEBAC should consider plan modifications in order to achieve ARC savings, which should be applied towards achieving the recommended minimum funding ratio targets.**

### Defined Contribution and Hybrid Plans for New Employees

Another issue considered by the Commission is how to prevent the problems that have been described above with defined-benefit plans from being perpetuated going forward. While less significant at this point in time than Tier I, the unfunded liabilities related to Tiers II and IIA have been growing and will continue to grow unless properly funded.

The Commission had significant discussions regarding the pros and cons of defined-contribution plans. The main advantage for the State of a defined-contribution plan is that its liability would be limited to a known and fixed percentage of payroll. Under a defined-contribution plan, the risks associated with not realizing the assumed investment returns and not adequately saving for future costs moves from the State to the employee, significantly impacting an employee's ability to retire during difficult economic times. An advantage of defined-contribution plans is that they are portable for those who change jobs or leave State service with relatively few years of service.

Defined-benefits plans typically have the advantage of professional investment management and have been shown to provide benefits at a significantly lower administrative cost. Defined-benefit plans also provide lifetime incomes without the financial risk, for individual employees, of large market losses or of large individual withdrawals that can be associated with defined-contribution plans. Under a defined-benefit plan these risks are pooled and become the responsibility of the State and its taxpayers.

Defined-contribution plans are the most prevalent plans for those employed in the private sector, primarily due to the profit-making nature of business, mobility of their workforces, and questions about the ongoing existence of some businesses. Eliminating the risk of large cost fluctuations and unfunded liabilities is an important concern for such businesses.

Defined-benefit plans remain the most prevalent plans for state and local governments, although there has been movement among some Connecticut municipalities towards providing defined-contribution plans. Some states, such as Michigan, have moved to a defined-contribution plan for new employees, while Georgia has created a hybrid or combination defined-contribution/defined-benefit plan for new employees. States such as Maine and Massachusetts have looked at this approach and have decided to remain with a defined-benefit plan, with some changes.

Hybrid plans often include a defined-benefit plan with a lower annual benefit amount supplemented by a defined-contribution plan. Hybrid plans have been viewed by some states and entities as a means of addressing, in part, the advantages and disadvantages to defined-benefit and defined-contribution plans that have been described above.

Connecticut's Alternate Retirement Plan has an 8 percent of salary state contribution, with an employee contribution of 5 percent. The employer contribution percentage in a defined-contribution

plan represents the employer's cost for the benefits and is considered comparable to the normal costs as a percentage of payroll for a defined-benefit plan. The normal cost as a percent of payroll for SERS' Tier IIA (from the June 30, 2008 valuation and the related actuarial assumptions) non-hazardous duty employees was 4.70 percent. The Tier IIA-non- hazardous duty percentage is projected to grow to 7 percent or so over time. The normal cost projections for Tier II-A indicate that the current level of benefits being accrued by new members of SERS are not as significant a problem as addressing financing the Tier I liabilities. The normal cost of a plan, however, does not reflect the need to amortize unfunded liabilities that have arisen from past funding shortfalls and continue to grow in many defined-benefit plans, including SERS.

A concern was raised that problems that could arise with the investment of plan assets by having a separate plan for new employees and a "closed" plan for current employees and retirees. Such a closed plan would need, over time, to shift more of its investments away from equities towards more fixed income to support a population of mostly retirees. The result would be that the State may have to increase contributions to the fund to make up for lower expected investment returns.

The Commission was in agreement that a move towards a different plan for new employees would have little or no impact on the State's current liabilities, because past benefits would not be affected. Some of the members of the Commission, however, feel that Connecticut's history regarding its non ARC-compliant contributions to the plan, offering retirement incentives and other actions requires that a defined-contribution or hybrid plan be considered, while other members feel that the Commission should not make recommendations based on an expectation of irresponsible State funding decisions.

Those on the Commission who opposed a defined-contribution plan for new employees believe that such a plan would be more costly to the state and would not address the current unfunded liability problem, while providing lower and less secure retirement benefits to its employees. Those on the Commission who believed that a defined-contribution plan should be considered expressed significant concern that the problems and issues associated with the defined-benefit plan could be perpetuated going forward at a growing cost to the State, especially if the recommendations in this report are ignored.

**State OPEB Plan****Overall Strategy**

A significant challenge for the State going forward will be managing the cost of its retiree health care benefits. According to the most recent actuarial projection, for the period ending April 1, 2008, the total unfunded OPEB liability was \$26.56 billion using a 4.50 percent discount rate, with an associated ARC of \$1.94 billion. This ARC is more than three times the \$595 million that the State is paying on a pay-as-you-go amount in the current year. As indicated previously, Connecticut's 2008 actuarial accrued liability (AAL) related to its OPEB plan per capita is the fourth highest in the nation.

The challenge for the State is that until it can begin to significantly address this unfunded liability, it is destined to pay a higher amount each year for retiree health insurance for decades to come. From 2000 to 2009, the growth in the State's actual costs was 11.2 percent per year. The overall strategy is to close the gap between the ARC and the amount contributed by the State and its employees. Connecticut's goal should be to fully fund the ARC each year. In order to achieve this goal, Connecticut must find ways to reduce and move its AAL and ARC per capita for OPEB closer to the average levels found in other states.

The range in the AAL and ARC per capita for New England states are listed below in Schedule 14. There three main reasons for the differences below are: 1) benefit levels and cost of plans; 2) retiree population covered; and 3) funding policy.

**Schedule 14: 2008 State OPEB AAL and ARC Per Capita: New England States**  
(Pew Report, February 2010)

State	2008 OPEB AAL Per Capita (as % of Per Capita Income)	2008 OPEB ARC Per Capita	2008 Funding Ratio
Connecticut*	\$7,428 (11.8%)	\$491	0%
Maine	3,334 (8.7%)	124	1.2%
Massachusetts	2,339 (4.1%)	128	1.8%
New Hampshire	2,443 (5.1%)	203	5.4%
Rhode Island	748 (1.7%)	44	0%
Vermont	2,606 (6.1%)	173	0.2%

\*The figures in the 2008 Pew Report figures for Connecticut reflected a 4.50 percent pay-as-you-go discount rate.

As with the Pension plan, the major strategies will fall into two categories, funding and plan design and methods of addressing the size of the liabilities.

**Prefunding in a Trust Fund**

The only portion of the ARC that has traditionally been funded by Connecticut is the pay-as-you-go amount for benefits received by existing retirees. The two basic components of prefunding are: (1) establishing a trust specific to OPEB and (2) making annual contributions to the trust that would exceed

current year costs. If these additional funds accumulate and remain in the trust for a significant amount of time, this would result in a lower actuarial accrued liabilities (AAL) and ARCs, as investment returns would become a significant source of benefit funding. The extent of the impact depends upon the amount contributed to the trust each year.

If it is assumed that the \$17 million related to the 3 percent contribution for employees with less than 10 years of service (now estimated at \$23 million) were to be placed in the trust, the ARC would decrease from \$1.94 billion to \$1.787 billion. If the State were to contribute another \$50 million to the trust beyond the \$17 million, the ARC is projected to further decrease to \$1.606 billion.

- 1) *The State should consider further increasing its contributions into the OPEB trust fund. This should include contributing to the OPEB Trust Fund a designated portion of future budget surpluses.*
- 2) *The State and SEBAC should consider increasing the level of employee contributions into the OPEB trust fund. Any increase in employee contributions should go towards prefunding the trust fund and not towards current costs.*

**Schedule 15: OPEB Liability and ARC Breakdown 4/1/08 Valuation Preliminary Results**

Details of Accrued Liability and ARC (\$000s)

Discount Rate= 4.50% Pay-as-you-go\*

Accrued Liability (AAL)	Tier I Actives	Tier II, IIA, and Non-SERS Actives	Total Active	Terminated Vested	In- Pay Status (Retirees)	Total
Member pre-65	\$390,370	\$2,191,145	\$2,581,515	\$737,155	\$0	\$3,318,670
Member post-65	956,216	4,451,485	5,407,701	1,223,080	0	6,630,781
Dependant pre-65	280,517	1,732,675	2,013,192	587,689	0	2,600,881
Dependant post-65	792,280	3,853,905	4,646,185	946,979	0	5,593,164
Retirees	0	0	0	0	8,423,446	8,423,446
<b>Totals</b>	<b>\$2,419,383</b>	<b>\$12,229,210</b>	<b>\$14,648,593</b>	<b>\$3,494,903</b>	<b>\$8,423,446</b>	<b>\$26,566,942</b>
ARC	Tier I Actives	Tier II, IIA, and Non-SERS Actives	Total Active	Terminated Vested	In-Pay Status	Total
Member pre-65	\$23,073	\$250,333	\$273,406	\$27,469	\$0	\$300,875
Member post-65	53,474	483,235	536,709	45,575	0	582,284
Dependant pre-65	16,921	203,525	220,446	21,899	0	242,345
Dependant post-65	44,137	423,551	467,688	35,287	0	502,975
Retirees	0	0	0	0	313,879	313,879
<b>Totals</b>	<b>\$137,605</b>	<b>\$1,360,644</b>	<b>\$1,498,249</b>	<b>\$130,230</b>	<b>\$313,879</b>	<b>1,942,358</b>

\*With the 5.02% discount rate related to the original estimate for the 3.0% employee contribution up through ten years of service, the AAL would be lowered to \$24.020 billion and the total ARC to \$1.787 billion.

**Increasing the Age that Retirees Begin Receiving Retiree Health Insurance**

The macroeconomic issue raised in the Federal Reserve Bank Report of people living longer and the number of years spent in retirement needs to be addressed with respect to OPEB plans as well. As shown in Schedule 15, \$493 million (\$273 million Member plus \$220 million Dependant) of the \$1.942 billion ARC using a 4.50% discount rate, is related to projected pre-65 retiree health benefits for active employees and their dependants. Increasing the early and normal retirement ages, along with the

reduction per year for early retirement, on the pension side should also result in OPEB savings. The age and years of service required for eligibility for pension and retiree health insurance could be further decoupled, as was done recently for some employees with the institution of the "Rule of 75".

- 3) *The State and SEBAC should consider, beyond increasing the early and normal retirement age for retirement eligibility, whether other steps, such as moving to a "Rule of 80" for all active employees, are needed to reduce the AAL and the ARC associated with the projected pre-65 health benefits for active employees.***

#### **Modifying Provisions Related to Terminated Vested Employees**

As indicated in Schedule 15, almost \$3.5 billion of the AAL and approximately \$130 million of the ARC, using a 4.50 percent discount rate, is related to terminated vested employees. Terminated vested employees have left State service with at least 10 years of service, but have not yet started collecting retirement benefits. At the point that they do begin receiving pension payments, they will also begin receiving full health care benefits. The Rule of 75 will help to lower the liabilities cited above for terminated vested employees, but additional steps for consideration include:

- Require that only employees going directly into retirement from state employment be eligible for retiree health benefits;
- Move to a Rule of 80 for all employees, not just with those with less than 10 years of service as of July 1, 2009;
- Reduce the portion of premium paid for each year of service below 25 years.

There are legal questions regarding changes the State can implement for this group of former employees that may need further review.

- 4) *The State and SEBAC should consider additional methods, such as requiring that only employees who go directly into retirement from state employment be eligible for retiree health benefits and moving to the Rule of 80, to reduce the AAL and the ARC associated with terminated vested employees.***

#### **Increasing Premium Cost Sharing**

As indicated in Schedule 15, \$14.6 billion of the \$26.6 billion in OPEB AAL relates to projected future benefits of current employees and their dependants. Approximately 45.5 percent of this liability relates to dependant coverage. One approach used in a number of other states to address this liability is to increase the level of premium sharing, currently minimal under Connecticut's plans. An advantage of adding a greater level for premium sharing for spouses and dependants is that it would increase the incentive for these individuals to consider joining other plans that are available to them, such as through their own employer.

The options for premium sharing changes include:

- Requiring retirees to pay the same premium share as active employees;



- Have dependants pay a higher premium share amount than employee members; and
- Reduce the portion of the premium paid by the state for each year of service below twenty-five years. The level of premium sharing could be different for pre and post 65 members and/or dependants.

For states that provide access to their plan with the retiree and/or their dependants paying some, or all, of the premium, there is still an "implicit subsidy" and liability associated with letting higher cost retirees participate in the plan. This may be less of an issue in Connecticut, which sets different rates for active employees and pre-65 retirees based on the separate experience of these two groups. A concern with increased premium sharing is that those with lower income will contribute a higher portion of their income than those with higher incomes.

- 5) The State and SEBAC should consider increasing premium sharing for retiree health benefits, which could vary based on whether the participant is a member or dependant and/or is pre or post-65, in order to reduce the AAL and the ARC. The premium share could also vary based on the number of years of service, similar to pension plans.***

#### **Health Care Cost Benefit Management**

As indicated previously, the level of the AAL and the ARC are sensitive to the actuarial assumptions used in doing the valuation for OPEB plans. A one percent reduction in annual health inflation below the assumed level is projected to lower the ARC from \$1.942 billion to \$1.561 billion. A one percent increase above the trend would also have a significant impact in the other direction. Connecticut historically has utilized plan design changes to reduce health care costs. Efforts are underway, including the state employee health plan, to demonstrate new methods of service delivery, such as the implementation of medical homes. The savings currently achieved by a provision in the 2009 SEBAC agreement leading to a higher percentage of employees purchasing generic drugs is an example of cost saving efforts underway. The biggest, and most important, challenge with health care reform is "bending the cost curve."

- 6) The State and SEBAC should continue to work on methods, including through plan design changes and improvements in service delivery approaches, to identify and implement actuarially verifiable methods of reducing health care costs.***

## **Conclusion**

---

Connecticut's unfunded liabilities and funding ratios related to its post-employment benefit plans for its employees and retirees are among the worst in the nation. These unfunded liabilities have led to increasing annual costs which have been outpacing of the growth in total State expenditures. These escalating costs put pressure on or squeeze out other budgetary priorities, including investments in human and physical capital needed to maintain our infrastructure and quality of life and to attract new businesses and jobs to the state. Lower credit ratings and higher borrowing costs are a potential outcome if changes are not made.

Unfortunately, these liabilities and associated annual costs will only continue to get worse if additional actions are not taken soon. While this report outlines a number of the many causes of our current situation, it more importantly offers a series of balanced and responsible strategies for consideration to mitigate these growing unfunded liabilities.

The strategies, frankly, call for the State, its employees and all stakeholders to continue to participate in finding and implementing solutions—ones that will involve tough choices today in order to avoid tougher ones later on.

## Appendices

---

	Page
Appendix 1 – Governor M. Jodi Rell, Executive Order No. 38 Establishing the State Post-Employment Benefits Commission.....	A-1
Appendix 2 – Summary of Plan Provisions, State Employee Retirement System (SERS).....	A-2
Appendix 3 – Summary of Changes Made to Pension Plans and Other Post Employment Benefit (OPEB) Plans by States in 2010.....	A-8
Appendix 4 - Actuarial Projections Related to SERS by Cavanaugh-Macdonald Consulting LLC, August 2, 2010.....	A-15

**List of Major Information Sources**

- 1) Actuarial Valuations of the State Employees Retirement System (SERS), Teachers Retirement System (TRS) and State Other Post-Employment Benefit (OPEB) Plans from 2000 to 2008
- 2) Actuarial estimates and projections related to SERS and OPEB done in the spring and summer of 2010 by the plans' actuaries (Cavanaugh Macdonald-SERS; Milliman-OPEB)
- 3) Collective Bargaining Agreements between the State of Connecticut and the State Employee Bargaining Agent Coalition (SEBAC)
- 4) State of Connecticut, Office of the State Comptroller, Comprehensive Annual Financial Reports, Fiscal Years 1996-2009
- 5) State of Connecticut, General Assembly's Office of Fiscal Analysis, Budget Books, Fiscal Years 1992 -2009; May 2010 projections for fiscal years 2010-2014
- 6) Fiscal Year 2011 Midterm Economic Report of the Governor, State of Connecticut, Office of Policy and Management, February 3, 2010
- 7) Connecticut Municipal Audits for Fiscal Year Ending June 30, 2008 submitted to the State Office of Policy and Management
- 8) "The Trillion Dollar Gap: Underfunded State Retirement Systems and the Roads to Reform", The Pew Center on the States, February 2010
- 9) Public Fund Survey-Summary of Findings for 2008, National Association of State Retirement Administrators, October 2009
- 10) "Population Aging and State Pensions in New England", New England Public Policy Center, Federal Reserve Bank of Boston, June 2010
- 11) Final Report of the Special Commission to Study the Massachusetts Contributory Retirement Systems, October 7, 2009
- 12) State Defined Contribution and Hybrid Pension Plans, National Conference of State Legislatures, June 2010
- 13) "Governmental Pension Contributions May Increase Due to New Guidance", Moody's Investors Service, July 6, 2010
- 14) "The Crisis in State and Local Government Retiree Health Benefit Plans: Myths and Realities", The Center for State and Local Government Excellence", November 2009
- 15) "Prefunding Other Post-Employment Benefits (OPEB) in State and Local Governments: Options and Early Evidence, The Center for State and Local Government Excellence, September 2009
- 16) "GASB 45 and other post-employment benefit promises: The fog is clearing", New England Public Policy Center, Federal Reserve Bank of Boston, September 2007
- 17) Employer Health Benefits – 2009 Annual Survey, The Kaiser Family Foundation
- 18) Federation of Tax Administrators, 2008 State and Local Tax Collections/Burdens
- 19) "Pension Funding and Policy Challenges Loom for U.S. States", Standard and Poor's, July 8, 2010
- 20) Pensions and Retirement Plan Enactments in 2010 State Legislatures, National Conference of State Legislatures, July 19, 2010

Note: Additional sources of information are included on the Commission's web-site, located at:

[http://www.ct.gov/opm/cwp/view.asp?a=2998&q=457846&opmNav\\_GID=1791](http://www.ct.gov/opm/cwp/view.asp?a=2998&q=457846&opmNav_GID=1791)

Appendix 1

STATE OF CONNECTICUT

BY HER EXCELLENCY

M. JODI RELL

EXECUTIVE ORDER NO. 38

**WHEREAS** the State of Connecticut provides its employees with pensions and other post-employment benefits such as health care; and

**WHEREAS** these benefits serve the public interest by attracting and retaining a workforce that protects the health and safety of the State; and

**WHEREAS** the most recent accounting reports that the State Employees Retirement System is \$9.3 billion under funded, and the State Employees Post Retirement Health and Life benefits ("OPEB") are \$24.6 billion under funded; and

**WHEREAS** the impact of the growth in pension and OPEB liabilities places additional strain on the State's budget resources as annual contributions comprise over \$1 billion of state funds, with the potential to be many times that amount; and

**WHEREAS** the unfunded liability is considered debt and thus has a negative impact for Connecticut with rating agencies; and

**WHEREAS** providing additional information, resources and potential short and long term plans to our elected officials will assist them in developing strategies for addressing post-employment liabilities; and

**WHEREAS** it is my goal as Governor to work with the business community, legislature and other elected officials to find an effective solution to the problem;

NOW, THEREFORE, I, M. JODI RELL, Governor of the State of Connecticut, by virtue of the authority vested in me by the Constitution and Statutes of the State do hereby ORDER AND DIRECT:

1. That there is established a State Post-Employment Benefits Commission.
2. That the Governor shall appoint representatives to the Commission consisting of representatives of the Office of the Treasurer, Office of the Comptroller, the Office of Policy and Management, the Office of Labor Relations, the State Employees Bargaining Agent Coalition, certified public accountants, certified actuaries, and members of the business community.
3. That the Governor shall appoint the Chairperson.
4. That all appointments should be made by February 15, 2010.
5. That on or before July 1, 2010, the Commission shall deliver a report to the Governor that:
  - a. Identifies the amount and extent of unfunded liabilities for pensions and other post-employment benefits;
  - b. Compares and evaluates the advantages and disadvantages of various approaches for addressing unfunded pension liabilities and post-employment benefits; and
  - c. Proposes a short and long term plan or plans for addressing unfunded pension liabilities and post-employment benefits.
6. That State departments and agencies shall cooperate and provide support to the Commission
7. That the Commission shall comply with applicable Freedom of Information laws, and that all meetings shall take place, whenever possible, in the Legislative Office Building.
8. That this Order shall take effect immediately.

Dated in Hartford, Connecticut, this 3<sup>rd</sup> day of February 2010

M. Jodi Rell  
By Her Excellency's Command

Susan Bysiewicz, Secretary of the State

---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS**

---

This summary of plan provisions is based on our understanding of the benefits as described by the Connecticut General Statutes, summary plan descriptions, and the Connecticut State Employees Retirement System. It is intended only to describe the essential features of the plan. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

***1. Membership***

*Tier I [Sec. 5-160]:* Each state employee appointed to classified service shall become a member on the first day of the pay period following permanent appointment.

Each officer elected by the people and each appointee of such officer exempt from classified service may elect to become a member, effective on the first day of the pay period following receipt of such election.

Each other state employee exempt from classified service shall become a member on the first day of the pay period following six months of employment.

Except as noted below, employees hired prior to July 1, 1984 could elect (no later than January 2, 1984) to be covered under either Plan B or Plan C. Employees under contracts with Union Independent and CSEA unions hired prior to October 1, 1982 had until October 1, 1984 to make such election.

*Tier II [Sec. 5-192e]:* Tier II consists of employees first joining the retirement system on or after July 1, 1984 plus employees hired between July 1, 1982 and January 1, 1984 who elected Tier II. Each state employee becomes a member on the first day of employment.

*Tier IIA:* Tier IIA consists of employees first joining the retirement system on or after July 1, 1997.

---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS**

---

2. Normal Retirement Eligibility

Tier I - Hazardous Duty [Sec. 5-173]: 20 years of credited service.

Tier I - Plans B and C [Sec. 5-162]: The earliest of age 55 with 25 years of service, age 60 with 10 years of service, or age 70 with 5 years of service.

Tier II [Sec. 5-192] and Tier IIA: The earliest of age 62 with 10 years of vesting service (effective July 1, 1992), age 60 with 25 years of vesting service, age 70 with 5 years of vesting service, or age 62 with 5 years of actual state service for terminations on or after July 1, 1997. Hazardous duty members may retire after 20 years.

3. Normal Retirement Benefit

Final Average Earnings: The average salary of the three highest paid years of service. Commencing January 1, 1986, no one year's earnings can be greater than 130% of the average of the preceding two years in calculating the Final Average Earnings.

Tier I - Hazardous Duty [Sec. 5-173]: 50% of Final Average Earnings plus 2% for each year of service in excess of 20.

Tier I Plan B [Sec. 5-162]: Same as Plan C up to age 65; thereafter 1% of Final Average Earnings up to \$4,800 plus 2% of Final Average Earnings in excess of \$4,800 times years of service. At age 70, greater of 1.25% of Final Average Earnings up to \$4,800 plus 2.5% of Final Average Earnings in excess of \$4,800 times years of service (maximum 20 years) or 1.0% of Final Average Earnings up to \$4,800 plus 2% of Final Average Earnings in excess of \$4,800 times years of service. Minimum benefit with 25 years is \$833.34 per month.

Tier I Plan C [Sec. 5-162]: 2% of Final Average Earnings times years of service. At age 70, greater of 2.5% of Final Average Earnings times years of service (maximum 20 years) or 2.0% of Final Average Earnings times years of service. Minimum benefit with 25 years is \$833.34 per month.

Tier II Hazardous Duty Members [Sec. 5-192] and Tier IIA: 2.5% of Final Average Earnings times up to 20 years of service plus 2% of Final Average Earnings times years of service in excess of 20 years, if any. Minimum benefit with 25 years is \$360 per month.

---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS**

---

Tier II All Other [Sec. 5-192l] and Tier IIA: 1½% of Final Average Earnings plus ½% of Final Average Earnings in excess of the year's breakpoint\*, times up to 35 years of service from October 1, 1982 plus 1⅞% of Final Average Earnings times years of service in excess of 35 years, if any. Minimum benefit with 25 years is \$360 per month.

\* \$10,700 increased by 6% each year after 1982, rounded to the nearest \$100, but not greater than Social Security Covered Compensation.

4. Early Retirement

Tier I - Hazardous Duty: None.

Tier I [Sec. 5-162]: Age 55 with 10 years of service; benefit is Normal Retirement Benefit reduced for retirement prior to age 60 with less than 25 years of service.

Tier II [Sec. 5-192m] and Tier IIA: Age 55 with 10 years of vesting service; benefit is Normal Retirement Benefit reduced ¼% (effective July 1, 1991) for each month prior to age 60 if at least 25 years of service or age 62 if at least 10 but less than 25 years of service. Minimum benefit with 25 years of service is \$360 per month.

5. Deferred Retirement

Tier I [Sec. 5-162]: May be deferred.

Tier II [Sec. 5-192l] and Tier IIA: May be deferred. Benefit is based on salary and service to actual retirement.

6. Vesting

Tier I [Sec. 5-166]: Ten years of service; benefit is payable at Normal Retirement Age or an early retirement benefit is payable at age 55; in addition employees are always fully vested in their own contributions (after January 1, 1983, Tier I contributions with 5% interest from January 1, 1982).

Tier I - Hazardous Duty [Sec. 5-173(f)]: As above.

Tier II [Sec. 5-192o] and Tier IIA: Effective July 1, 1997, 5 years of actual state service, 10 years of vesting service, or age 70 with 5 years of service; benefit is payable at Normal Retirement Age or an early retirement benefit is payable at age 55. In addition employees are always fully vested in their own contributions with 5% interest.



---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS**

---

7. Member Contributions

<u>Tier I - Hazardous Duty [Sec. 5-161]</u>	4% of earnings up to the Social Security Taxable Wage Base plus 5% of earnings above that level.
<u>Tier I - Plan B [Sec. 5-161]</u>	2% of earnings up to the Social Security Taxable Wage Base plus 5% of earnings above that level.
<u>Tier I - Plan C [Sec. 5-161]</u>	5% of earnings.
<u>Tier II - All Other [Sec. 5-192u]</u>	None.
<u>Tier II - Hazardous Duty [Sec. 5-192u]</u>	4% of earnings.
<u>Tier IIA – All Other</u>	2% of earnings.
<u>Tier IIA – Hazardous Duty</u>	5% of earnings.

8. Cost of Living

[Sec. 5-162b, 5-162d]: Annual adjustment each July 1 of up to 5% for retirements prior to July 1, 1980; 3% for retirements after July 1, 1980. For members (or beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. If an actuarial surplus (as defined in the law) exists, the Commission may further increase retired benefits.

For employees retiring after June 30, 1999, the annual adjustment will be 60% of the increase in the CPI up to 6% and 75% of the increase in the CPI over 6%. This adjustment will be no less than 2.5% and no greater than 6%. Employees retiring between July 1, 1997 and June 30, 1999 made an irrevocable choice between this formula and a fixed 3% annual adjustment.

Tier IIA: An employee must have at least ten years of actual state service or directly make the transition into retirement in order to be eligible for annual adjustments.

9. Death Benefits

Tier I - State Police [Sec. 5-146]: Survivor benefits to spouse of \$670 per month plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

Tier I [Sec. 5-165a]: If eligible for early or normal retirement, spouse benefit is equal to 50% of the average of the Life Benefit and the 50% Joint & Survivor Benefit the member would have received. If not eligible to retire but 25 years of service, the same benefit calculated as though age 55 using service and earnings at death.

---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM**  
**SUMMARY OF PLAN PROVISIONS**

---

[Sec. 5-168]: If not eligible for retirement, return of contributions (after October 1, 1982, Tier I, with interest from January 1, 1982 at 5%).

Tier II [Sec. 5-192r] and Tier IIA: If eligible for early or normal retirement, spouse benefit is equal to 50% of the member's benefit under a 50% Joint & Survivor Annuity. If not eligible to retire but 25 years of service, the same benefit calculated as though age 55 using service and earnings at death. If not eligible for retirement, return of contributions with 5% interest.

Tiers I [Sec. 5-144], II [Sec. 5-192i] and IIA: If death is due to employment, a spouse with dependent children under 18 will be paid \$100,000 in 10 annual installments while living and not remarried; also \$50 per month per child under age 18. If no children under age 18, spouse [or dependent parent(s), if no spouse] will be paid \$50,000 in not less than 10 annual installments.

**10. Disability Benefits**

Tier I [Sec. 5-142, 5-169, 5-173]: For non-service disabilities occurring prior to age 60 with at least 5 years of service, benefit is 3% of Final Average Earnings times years of service; maximum benefit is 1 $\frac{2}{3}$ % of Final Average Earnings times years of service projected to age 65. If disability occurs prior to age 60 and is due to service, benefit is 1 $\frac{2}{3}$ % of Salary times years of service projected to age 65 (maximum 30 years) and is payable regardless of length of service. Exception: State Police benefit is equal to the normal retirement benefit if more than 20 years of service. State Police receive an additional benefit of \$360 per month plus \$300 to spouse plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

If in-service disability occurs after the member is eligible for a non-service disability, the member receives the greater of the in-service and non-service disability benefits.

Tier II [5-192p] and Tier IIA: Prior to age 65 and due to service or with at least 10 years of service, benefit is 1 $\frac{2}{3}$ % of Final Average Earnings plus  $\frac{1}{2}$ % of Final Average Earnings in excess of the year's breakpoint, times service projected to age 65 (maximum 30 years) or service to Date of Disability if greater.

Tier I, II, and IIA: Maximum disability benefit is the lesser of 100% of salary less Workers Compensation, Social Security and non-rehabilitation earnings, or 80% of salary less Workers Compensation and Social Security. Social Security is primary plus family.

Minimum disability benefit including Workers Compensation and Social Security is 60% of salary.

---

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS**

---

**11. Optional Forms of Payment**

50% or 100% Joint and Survivor (Normal Form if married at least 12 months). Ten years certain and life. Twenty years certain and life. Life (Normal Form if not married at least 12 months).

**12. Part-Time Employment**

[Sec. 5-162g & Sec. 5-192k]: Service is treated as if full-time for eligibility. If member is consistently part-time for all periods, service is treated as if full-time. If member has a varying schedule or some part-time and some full-time service, service and salary are proportionately adjusted.

### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010

*Source: Pensions and Retirement Plan Enactments in 2010 State Legislatures, July 19, 2010. National Conference of State Legislatures.*

**Arizona:** Made a number of changes affecting new hires only. Increased the time from 36 months to 60 months to compute the highest average salary as a base for the benefit calculation. For normal retirement eligibility, changes the rule of 80 to the rule of 85 and eliminates refunds of employer contributions for those who voluntarily withdraw from the system. Reduced benefits three percent for every point below the required 85 points in the rule of 85 for early retirees.

**California:** Increased state's contribution level to make up for actuarial losses. Legislature passed a resolution to ask the President and Congress to repeal the Government Pension Offset and the Windfall Elimination Provisions from the Social Security Act. Unions are in negotiations with the Governor's Office to increase the normal retirement age.

**Colorado:** Increased employee contribution from eight percent to 10.5 percent of salary and decreased employer contribution an equal amount. Caps the annual COLA at the lesser of two percent or inflation, with a trigger to reduce the COLA if investment returns are negative. Requires retiree to be retired at least twelve months to receive a COLA, and rules are set to adjust the COLA based on the funded ratio. (A lawsuit has been filed challenging the reduction in benefits as a violation of contract.) Eligibility for retirement for new hires gradually increased by hired date to a required rule of 90 for normal retirement with a minimum age of 60 by 2017. A cap of eight percent is imposed on the annual increase for any year used in the computation of the highest salary for final benefits. Conditions have been placed on refunds for those who voluntarily withdraw from the system. Prevents retirees from returning to work and adding to their previous benefit; a returning retiree will begin a new benefit segment based on the rules in effect at that time, and the returned retiree must make a contribution to the plan.

**Connecticut:** All new employees eligible for health benefits must contribute three percent of salary to cover retiree health benefits. All employees with less than five years of service and who are eligible for health benefits must contribute three percent of salary until they have ten years of service. The State also added the "Rule of 75" (combination of age and service must equal 75) for eligibility for retiree health insurance for those with less than 10 years of service as of July 1, 2009. Executive Order 38 (February 2010) established a State Post-Employment Benefits Commission whose members were appointed by the governor. The commission is to: identify the amount and extent of unfunded liabilities for pensions and other post-employment benefits; compare and evaluate the advantages and disadvantages of various approaches for addressing unfunded pension liabilities and post-employment benefits; and propose a short and long term plan or plans for addressing unfunded pension liabilities and post-employment benefits.

**Delaware:** Enacted provisions to protect benefits of state troopers on military leave, especially if service occurs during the three highest paid years of employment used in the benefit formula.

**Georgia:** If an employee retires before normal retirement age and later returns to work, the original retirement application shall be nullified. If a teacher who retires at normal retirement age returns to work, the returning retiree has two options. The first is to contribute to the plan and prior benefits will

### Appendix 3 — Changes Made to Pension Plans and OPEB by States in 2010—continued

be suspended and new service credits will accrue. The second is to not contribute to the plan and benefits will continue but new service credits will not accrue.

**Hawaii:** Retirees who return to work must be re-enrolled in the pension plan. Certain exceptions and penalties may apply under specific situations. Under certain conditions, additional service credits may not accrue.

**Illinois:** Increased state funding of teacher's fund to provide relief to local school districts and extends amortization by fifteen years. Enacted several new provisions for new employees only. Retirees must be retired at least one year and over the age of 67 to receive a COLA. The COLA will be the lesser of three percent or fifty percent of the CPI, but not negative. The COLA will be paid on the base pension amount and not compounded. The COLA for members of the General Assembly and judges will be at the full CPI. Legislation was adopted setting normal retirement at age 67 with ten years of service, but eight years for judges and the legislature. Early retirement is available at age 62 and ten years of service, with benefits reduced one-half of one percent for every month the retiree is under age 65. Benefits will be based on the average salary of the highest 96 months instead of 48 months. Benefits will be capped at \$106,800 with the cap indexed to the lesser of three percent or one-half the CPI (the CPI for judges and the legislature). The maximum benefit for legislators and judges is capped at 60 percent of final average salary. Survivor's benefits are set at 66 and two-thirds percent of the deceased member's benefit. Enacted new retirement program for new legislators: set normal retirement at age 67 with 8 years of service; bases the final average salary on the highest eight years; caps the final average salary at \$106,800 indexed to inflation; the COLA will be the lesser of three percent or the change in the CPI; the initial benefit is capped at 60 percent of the final average salary; and reduces the multiplier in the benefit formula from five percent to three percent per year. Legislature passed a resolution to ask the President and Congress to repeal the Government Pension Offset and the Windfall Elimination Provisions from the Social Security Act.

**Iowa:** Increases the state contribution for most employees from 7.25 percent to 8.1 percent of salary and employees' contribution from 4.7 percent to 5.35 percent. For police, increase employer contribution from 21 percent by two percent annually until it reaches 37 percent, and increase employee contribution from 9.35 percent by one-half of a percent annually until it reaches 11.35 percent, and increase the state contribution by an additional \$5 million each year until the funding ratio reaches 85 percent. For all employees not vested, vesting will be raised from four to seven years and normal retirement will be raised from age 55 to 65. The final average salary will be based on the highest five years instead of three years. Benefits will be reduced one-half of one percent for each month the employee retires under the age of 65. Enacted an early retirement incentive for those age 55 with ten years of service, with unused vacation time and \$1,000 per year of service paid out equally over five years. Those who accept the incentives may not be rehired in any way.

**Kentucky:** Made changes in qualifications to upgrade requirements for those involved in pension investments. Set up a new trust fund for health benefits, increasing employer payments from pay-as-you-go to begin funding future benefits by matching employee payments. Teachers will pay an additional 0.25 percent of salary for medical benefits each year until they pay three percent in six years. Medicare-eligible retired teachers will continue paying their Part B premiums and those under 65 will

### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010--continued

pay an equal amount to the fund which will be deducted from their pensions. The state will pay the net cost of medical insurance for newly-retired teachers who are not Medicare eligible.

**Louisiana:** All state plans will be reorganized with some categories contributing more and some less, but most not changing. For new hires, regular employees will contribute eight percent of salary, hazardous duty 9.5 percent, and judges thirteen percent. The final average salary for new hires will be based on the highest five years and a fifteen percent anti-spiking cap will apply to all new hires. All non-hazardous duty employees will be eligible for normal retirement at age 60 with five years of service or at any age with twenty years but at an actuarially-reduced benefit. All hazardous duty employees will be eligible for normal retirement at any age with 25 years of service or at age 55 with any number of years but at an actuarially-reduced benefit. The accrual rate of benefits per year of service will be 2.5 percent for non-hazardous duty, 3.33 percent for hazardous duty, and 3.5 percent for judges. All retiree benefits will be subject to garnishment for felonies related to public employment. A constitutional amendment has been proposed to require a two-thirds majority of each house to add new retiree benefits which increase costs. Legislature passed a resolution to ask the President and Congress to repeal the Government Pension Offset and the Windfall Elimination Provisions from the Social Security Act.

**Maryland:** Complicated rules were established to reduce pensions if inflation is negative for regular employees. Members of the legislature and judges pensions are linked to the salaries of active judges and legislators. Reemployed retirees will be limited in new earnings allowed if the final average salary at retirement was over \$25,000.

**Michigan:** New teachers will be enrolled in a hybrid defined benefit/defined contribution plan with no COLA. The defined contribution portion will be two percent of salary by the employee with automatic enrollment and an opt-out, with a 50 percent match by the state. Employees may request and receive additional state match for employee contributions over the required two percent up to a total of three percent of salary. Plan provides for a regular interest rate for the hybrid of between 0 percent and seven percent, and assumes a rate of return of seven percent. Final average salary will be based on five rather than three years. Minimum retirement age is being increased to 60 with ten years of service and the purchase of prior service credits will no longer be allowed. Vesting will be graduated and increase each year, reaching full vesting after four years. Enacted early retirement incentives for teachers with a combined age and years of service total of 80 or greater. Those of regular retirement age would receive an additional 0.1 percent per year in the benefit formula and others would receive an additional 0.05 percent. The final average salary is capped at \$90,000 and the cost of the incentive will be amortized over five years. Teachers will contribute three percent of salary into a new trust fund for health benefits for retirees. (A legal challenge has been filed against the requirement for an additional contribution on the grounds of violation of contract.) Reemployed retirees may earn up to one-third of their final average salary at retirement; if earnings are greater than one-third of the final average salary, all prior benefits are suspended.

**Minnesota:** Increased both employer and employee contributions for most employees from six to 6.25 percent. State patrol contributions increased two percent of salary for the employer and three percent for the employees. Police and fire contributions increased from 14.1 to 14.4 percent of salary for employees and from 9.4 to 9.6 percent for the employer. For teachers, both employer and employee rates (currently at 5.5 percent of salary) will increase one-half of one percent of salary annually for four

### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010--continued

years. Triggers were established to increase the contributions further if necessary, and to decrease contributions as appropriate. Contribution rates were increased for both employers and employees in certain local school district plans. COLAs are reduced or eliminated based on the funding ratio. (Lawsuits have been filed on this matter.) The compound interest during the deferred period on deferred retirement annuities is reduced by plan based on a formula. Plan vesting periods are increased for new hires by plan from three years to as many as five years or ten for some with partial vesting at five years. The early retirement adjustment factor for new hires only is increased by plan to as much as 2.4 percent per year for some and five percent per year for others. Interest earned on escrow accounts is being eliminated for certain reemployed retirees. Enacted a retirement incentive of health and dental benefits for 24 months with no rehiring of those who accept for three years. Requirements are fifteen years of service and eligibility for benefits under existing plans. Reorganized and merged pension systems and extended the amortization period an additional ten years. Studies were authorized to review investment authority and fiduciary provisions for retirement plans and to review alternatives to the existing defined benefit plans.

**Mississippi:** Increased employee contribution from 7.25 to nine percent of salary with two off-setting benefits. Starting in 2010, employees will accrue one-half day of leave toward retirement service credit, and employees are given a new retirement option of a certain joint and survivor annuity. The service requirement for normal retirement is being increased for new hires only from 30 years to 33 years. Retirees may not return to work for 90 days following retirement. When returning, no new additional service credits may be earned.

**Missouri:** Created a new tier for new employees with a contribution of four percent of salary and other changes for new hires. The normal retirement requirement will be age 67 with ten years of service or the rule of 90 with age of at least 55. Early retirement will be available at age 62 with ten years of service. Service for vesting will be increased from five to ten years. Credited time may no longer be purchased for time served with other governments or the military. Similar changes were made for police, judges and legislators. Enacted a new retirement plan for new legislators: employee contributions will be four percent of salary on a pre-tax basis; normal retirement will be at age 62 with service in at least three biennial assemblies or the rule of 90 with a minimum age of 55. For elected officials, normal retirement is at age 62 with one term of office or the rule of 90 with a minimum age of 55. Enacted provisions to prohibit changes to previously earned benefits and related provisions for current employees, but changes may be made regarding benefits to be earned in the future.

**New Hampshire:** Set up a new trust fund for health benefits for retirees and requires certain employees have 20 years of service to receive health benefits as retirees.

**New Jersey:** Legislation was adopted to require full payment of the ARC each year, but liberally defines what that means. Membership in the pension plan for new hires requires the employee to work at least 35 hours per week. Others may join the defined contribution plan. The multiplier in the benefit formula was reduced for new hires only from 1/55 (1.82 percent) to 1/60 (1.67 percent) per year. Contributions for police and fire new hires will be capped at base salaries equal to the maximum annual wage contribution base for social security. The final average salary for new hires in most plans will be based on the five highest years, increased from three. New plan members will not have a non-forfeitable right to receive benefits after five years of service. New employees will pay 1.5 percent of salary as active and

### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010--continued

1.5 percent of pension benefits as retired members of the plan for health benefits. New elected and appointed officials must work at least 35 hours per week to be covered for health care and other new employees must work at least 25 hours.

**New Mexico:** Legislation was adopted to delay by one year a required increase in employer contributions for teachers to provide relief to local school districts. Authorized the release of teacher pension amounts to the public. Retirees may not return to work for twelve months following retirement. Those who return have two options. The first is to make no contribution to the plan, earn no additional service credits, and have benefits suspended. The second is to suspend the pension, make plan contributions and earn new service credits.

**New York:** Enacted an early retirement incentive with the cost amortized over five years. There are two options. Under the first, early retirement reductions are eliminated for those of age 55 with 25 years of service. Under the second, the employee may receive one month additional service applied to the benefit formula for each year of service up to a maximum of three additional years at age 50 with ten years of service, but benefits will be reduced five percent per year for each year under the age of 55.

**Oklahoma:** Enacted a retirement incentive for employees of normal retirement age, offering a health insurance subsidy for 18 months, longevity pay, and \$5,000 in cash. Enacted a new plan for new legislators: employee may choose one of two different plans with the factors to be applied to the benefit formula. The high plan is a ten percent of salary employee contribution with a four percent per year multiplier in the formula, and the low plan is a 4.5 percent contribution with a 1.9 percent multiplier.

**Oregon:** Requires that at least one member of the state retirement board must be either an employee in or a retiree from a bargaining unit.

**Pennsylvania:** All investments in companies doing business in Iran or Sudan will be divested.

**Rhode Island:** Legislation was adopted to eliminate the requirement for ARC payments for pensions for employees and teachers. Adopted legislation limiting COLAs for employees not eligible for benefits by 2010 to the first \$35,000 of benefits, with that limit to be increased annually by the lesser of three percent or inflation. The court upheld the right of the state to reduce health benefits for those who retire before normal retirement age.

**South Dakota:** Refunds will be reduced for those who withdraw from the system. No COLAs during the first year of retirement. COLAs are reduced according to a formula linking the COLA to the funding ratio. Retirees who return to work sooner than 90 days following retirement must repay all benefits received or accept an offsetting actuarial reduction in benefits later. If the retiree returns after 90 days, the employee must contribute to a deferred contribution retirement account, no pay increases will be given, benefits shall be reduced 15 percent, and no additional service credits may be earned during the period of reemployment.

**Tennessee:** Benefits may be forfeit upon conviction of a public service-related felony.

**Texas:** Health insurance costs were increased for retirees.



### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010--continued

**Utah:** New employees must choose between a new defined contribution plan and a new hybrid plan. (Current employees remain in the existing plan.) The state will contribute ten percent of salary to the plan, vested after four years. Police and fire employees must contribute twelve percent, vested immediately, but other employees are not required to contribute, but may do so. Legislators and governors must join the defined contribution plan. Under the hybrid, the employer will fund the ARC for the defined benefit portion up to ten percent of salary, with the employee making up the difference if necessary, but the state will cover all amortized liabilities. No benefit may be increased until the plan reaches 100 percent funding. Under the defined contribution component, the state will fund ten percent of salary less the amount paid to the defined benefit component, with the employee making contributions if they wish to do so. Eligibility for the defined benefits is at age 65 with four years of service, 60/20, 62/10, or any age with 35 years of service (25 years for new fire and police employees). Employees have the option of purchasing five years of additional service at retirement. The benefit formula will use the highest five years of salary instead of three, and the multiplier will be 1.5 percent per year for normal retirement. Benefits are reduced for those retiring between the ages of 60 and 65 unless they have 35 years of service. The COLA is equal to the change in the CPI but capped at 2.5 percent, but the excess over 2.5 percent will be carried forward and applied in future years when the increase is not capped. New governors and legislators will only be eligible for the defined contribution plan. Retirees reemployed within one year of retirement will have benefits suspended and earn new service credits. Retirees reemployed after one year have two options. First is to continue to receive benefits but earn no additional service credits. The second is to suspend benefits and earn new service credits.

**Vermont:** Increased the employee contribution for teachers from 3.54 percent to five percent of salary, required the state to fully fund the ARC, and increased the employee contribution from nine to 9.5 percent of salary for certain municipal employees. Normal retirement for teachers is being raised from age 62 to age 65 or the rule of 90, the annual multiplier for years of service in the benefit formula is being increased from 1.67 percent to two percent, the cap on benefits is being raised from 50 percent to 60 percent of final annual compensation, and annual increases are capped at ten percent for identification of the highest paid years in the benefit formula. Adopted new formulas for retiree health eligibility and coverage. The formula for new hires, however, is less generous than for current employees.

**Virginia:** Adopted legislation allowing the state to reduce contributions for two years to equal only normal costs. Unfunded actuarial accrued liabilities not funded would be amortized over ten years and repaid with interest at the actuarially-assumed rate. New employees will begin contributing five percent of salary. The final average salary for new employees will be based on the highest 60 months instead of the highest 36 months. Decreases the time and increases the cost for which new employees may purchase prior service credits. Decreases state contributions for institutions of higher education from 10.4 to 8.5 percent of salaries and requires new employees of higher education to contribute five percent of salary. Early retirement with unreduced benefits will be changed from the rule of 80 to the rule 90 or at the employee's normal retirement age under social security with five years of service. Early retirement will be allowed with reduced benefits at age 60 and five years of service. COLA increases for new hires will be determined by a formula linked to the CPI. New hires who voluntarily leave the plan and are not vested may only have their own contributions refunded. Benefits for new judges will be

### Appendix 3 - Changes Made to Pension Plans and OPEB by States in 2010--continued

based on a new formula using years of service and age at first term of service. Authorized a study to review management of the pension plan and the involvement of minority-owned firms in the process.

**Wyoming:** Regular state employees will begin paying seven percent of salary instead of 5.57 percent and college and university employees will begin paying 7.12 percent of salary instead of 5.68 percent for pensions.

**Puerto Rico:** Established a Commission to reform retirement plans.

**Appendix 4 - Actuarial Projections Related to SERS by Cavanaugh Macdonald Consulting, LLC  
(new actuaries for SERS plan), August 2, 2010**



## Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

August 2, 2010

Mr. Robert S. Dakers  
Executive Finance Officer  
State of Connecticut, Office of Policy and Management  
450 Capitol Avenue  
Hartford, CT 06106

**Subject: Projection of State Employees Retirement System**

Dear Bob:

As requested, we have developed several 30-year projections of the State of Connecticut State Employees Retirement System (SERS) and our results are on the attached schedules. Our two baseline projections are developed using two separate amortization period schedules. The first set, as was supplied to you in a letter dated June 21, 2010, utilizes a decreasing 30-year amortization period from June 30, 2010. The 30-year amortization period reflects the effect of the SEBAC IV and V adjustments to the closed amortization period (24 years from June 30, 2008) as if they will persist throughout the projection period. These projections have been revised from the original projections to reflect a modification to the normal cost calculation we previously developed. The second set of projections utilizes the closed amortization period as used in the June 30, 2008 valuation (24 years) and recognizes the SEBAC IV and SEBAC V asset adjustment amortization payments. It is our understanding that these SEBAC adjustments remain in effect throughout the remaining 24-year amortization period.

As a reminder, our projections are based upon the financial and member data as of June 30, 2008 with appropriate adjustments to account for the early retirement incentive offered in 2009 and actual market returns since 2008. In performing the projections, we utilized the actuarial assumptions and methods as used to perform the June 30, 2008 actuarial valuation and we assume all future experience exactly matches with these assumptions.

Attached to this letter are two appendices. Appendix A presents all the projections based on the decreasing 30-year amortization schedule and Appendix B will be for all the projections based on the decreasing 24-year amortization schedule as stated in the June 30, 2008 valuation and the SEBAC adjustments ceasing at 2032.

In each Appendix, Attachment 1 provides the summarized valuation results of the baseline projections and Attachment 2 provides the current and future contribution requirements. These

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144

Phone (678) 388-1700 • Fax (678) 388-1730

[www.CavMacConsulting.com](http://www.CavMacConsulting.com)

Offices in Englewood, CO • Kennesaw, GA • Hilton Head Island, SC



attachments include the results under both the level percent of payroll and level dollar amortization methods.

In addition, we were asked to provide 30-year projections on several retirement eligibility scenarios which are summarized as follows:

Scenario Attachments Tier	1		4	
	3 and 4	5 and 6	7 and 8	9 and 10
	II - Non Hazardous	IIA - Non Hazardous	II - Hazardous	IIA - Hazardous
Current Early Retirement Eligibility	Age 55 with 10 years of service	Age 55 with 10 years of service	None	None
Proposed Early Retirement Eligibility	Age 62 with 10 years of service	Age 62 with 20 years of service	None	None
Early Retirement Reduction Change	3% per year to 6% per year	3% per year to 6% per year	None	None
Current Normal Retirement Eligibility	Age 62 and 10 or Age 60 and 25 or Age 70 and 5	Age 62 and 10 or Age 60 and 25 or Age 70 and 5	20 years of service	20 years of service
Proposed Normal Retirement Eligibility	Age 65 and 10 or Age 70 and 5	Age 65 and 10 or Age 70 and 5	25 years of service	Age 55 with 25 years of service

We slightly modified the retirement decrement assumptions as necessary to reasonably anticipate the future behavior under the proposed retirement eligibilities. The results of these projections are included in Attachments 3 through 10.

Also, as provided earlier to you in an email, we have calculated the potential actuarial impact of reductions in the Employer Required Contribution determined as of the June 30, 2008 (prior to the Early Retirement incentive of 2009). The impact to funding is based on all changes being effective for all active members as of June 30, 2008. The following scenarios are:

- For current Tier II and IIA active participants, change the final average pay definition to be based on the last five years of service and not the last three years of service.
- For current Tier II active participants, reduce the assumption on the Cost-of-Living Adjustment (COLA) from 2.75% to 2.00%.
- For current Tier IIA active participants, reduce the assumption on the Cost-of-Living Adjustment (COLA) from 2.75% to 1.50%.
- For current Tier II active participants, add an annual cap of \$150,000 on retirement benefits.
- For current Tier IIA active participants, add an annual cap of \$125,000 on retirement benefits.

Mr. Robert S. Dakers  
August 2, 2010  
Page 3



The results of these additional scenarios are as follows:

Scenario	Total ARC reduction	Savings in Dollars (millions)
Tier II Final Average 5	0.48%	\$17.4
Tier IIA Final Average 5	0.13%	\$4.7
Tier II COLA change to 2.0%	0.84%	\$30.4
Tier IIA COLA change to 1.5%	0.44%	\$15.9
Tier II Cap of \$150,000	0.01%	\$0.5
Tier IIA Cap of \$125,000	0.00%	\$0.0

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Please contact us if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Thomas J. Cavanaugh'.

Thomas J. Cavanaugh FSA, FCA, MAAA, EA  
Chief Executive Officer

cc: Jeanne Kopek

Enc.



**APPENDIX A**

**Attachment 1**

**Connecticut SERS**

**30 Year Baseline Projection based on June 30, 2008 Valuation.  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year. Thereafter  
Recognizes the Early Retirement Incentive of 2009**

Valuation Year Ending 6/30/XX	Fiscal Year Ending 6/30/XX	(1) All Year Payments	(2) All Year Payments by the Valuation Year	(3) Unfunded Accrued Liability Beginning of Valuation Year	(4) Plan Assets at Beginning of Valuation Year	(5) Funded Ratio = Assets / Liability	(6) Amortization Period	(7) Unfunded Accrued Liability Beginning of Valuation Year	(8) Plan Assets at Beginning of Valuation Year	(9) Funded Ratio = Assets / Liability	(10) Amortization Period
2008	2010	3,497,445	1,014,096	9,283,126	9,990,247	51.9%	30	9,283,126	9,990,247	50.0%	30
2009	2011	3,637,342	1,070,474	11,794,163	8,787,160	42.7%	30	11,794,163	8,787,160	42.7%	30
2010	2012	3,183,548	1,304,724	12,027,504	10,177,320	45.8%	30	12,027,504	10,177,320	45.8%	30
2011	2013	3,216,895	1,359,478	12,468,274	10,514,086	45.8%	29	12,069,568	10,912,794	47.5%	29
2012	2014	3,252,331	1,417,476	13,438,915	10,374,523	43.6%	28	12,600,721	11,212,716	47.1%	28
2013	2015	3,296,559	1,479,923	14,188,468	10,468,886	42.5%	27	12,901,202	11,756,154	47.7%	27
2014	2016	3,317,006	1,547,841	14,413,748	11,093,942	43.5%	26	12,654,367	12,853,323	50.4%	26
2015	2017	3,337,815	1,622,443	14,720,650	11,631,080	44.1%	25	12,473,944	13,877,796	52.7%	25
2016	2018	3,355,923	1,701,354	15,019,420	12,186,390	44.8%	24	12,289,863	14,895,946	54.8%	24
2017	2019	3,378,632	1,778,770	15,298,782	12,708,337	45.4%	23	12,091,864	15,915,555	56.8%	23
2018	2020	3,396,579	1,862,420	15,584,455	13,266,073	46.0%	22	11,876,762	16,983,764	58.8%	22
2019	2021	3,421,570	1,944,621	15,776,654	13,811,890	46.7%	21	11,638,353	17,950,192	60.7%	21
2020	2022	3,439,823	2,035,373	15,954,126	14,368,707	47.4%	20	11,368,144	18,954,691	62.5%	20
2021	2023	3,460,315	2,126,613	16,090,320	14,925,470	48.1%	19	11,073,206	19,942,584	64.3%	19
2022	2024	3,487,572	2,215,823	16,182,975	15,486,527	48.9%	18	10,755,540	20,913,962	66.0%	18
2023	2025	3,519,754	2,303,799	16,225,104	16,056,448	49.7%	17	10,412,616	21,868,935	67.7%	17
2024	2026	3,551,026	2,389,685	16,212,685	16,641,563	50.7%	16	10,045,247	22,809,001	69.4%	16
2025	2027	3,584,586	2,474,736	16,128,221	17,246,216	51.7%	15	9,641,342	23,733,095	71.1%	15
2026	2028	3,651,491	2,560,164	15,966,172	17,873,422	52.6%	14	8,201,307	24,638,287	72.8%	14
2027	2029	3,704,617	2,641,245	15,719,695	18,530,942	54.1%	13	6,725,230	25,525,408	74.5%	13
2028	2030	3,763,216	2,719,256	15,376,498	19,225,888	55.6%	12	5,208,469	26,393,917	76.3%	12
2029	2031	3,837,498	2,798,095	14,940,673	19,973,959	57.2%	11	3,663,558	27,251,067	78.1%	11
2030	2032	3,920,591	2,850,389	14,392,317	20,791,303	59.1%	10	2,080,070	28,103,549	79.9%	10
2031	2033	4,014,693	2,907,051	13,725,101	21,693,331	61.3%	9	6,461,335	28,956,597	81.8%	9
2032	2034	4,117,089	2,969,612	12,923,970	22,694,504	63.7%	8	5,805,422	29,813,053	83.7%	8
2033	2035	4,227,474	3,005,218	11,971,976	23,814,169	66.6%	7	5,106,946	30,679,299	85.7%	7
2034	2036	4,348,830	3,043,869	10,860,457	25,072,669	69.8%	6	4,372,211	31,560,915	87.8%	6
2035	2037	4,480,604	3,076,731	9,574,869	26,490,539	73.5%	5	3,604,913	32,461,415	90.0%	5
2036	2038	4,621,869	3,103,220	8,096,915	28,090,839	77.6%	4	2,803,565	33,384,198	92.3%	4
2037	2039	4,773,502	3,123,427	6,411,050	29,898,082	82.3%	3	1,978,830	34,330,301	94.6%	3
2038	2040	4,934,070	3,140,208	4,498,018	31,995,091	87.7%	2	1,140,103	35,293,005	96.9%	2
2039	2041	5,104,120	3,152,162	2,399,524	34,226,377	93.6%	1	309,645	36,256,255	99.2%	1
2040	2042	5,284,124	3,159,009	0	36,794,175	100.0%	0	0	37,174,651	100.0%	0

All numbers are in thousands.



APPENDIX A

Attachment 2

Connecticut SERS  
 30 Year Baseline Projection based on June 30, 2008 Valuation  
 Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
 Recognizes the Early Retirement Incentive of 2009

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1) Level Payouts - Payroll Amounts by Method		(2) Level Payouts - Payroll Amounts by Method		(3) Normal Cost	(4) Employer Contribution	(5) Total Contribution (3)+(4)	(6) Normal Cost	(7) Amortization of Unfunded Actuarial Liability	(8) Total State Contribution (7)+(8)	(9) Employer Contribution	(10) Total Contribution (9)+(10)
		(1) Level Payouts - Payroll Amounts by Method	(2) Level Payouts - Payroll Amounts by Method	(3) Normal Cost	(4) Employer Contribution								
2008	2010	335,323	562,105	897,428	61,876	335,323	959,304	1,093,985	340,927	1,072,454	897,428	61,876	959,304
2009	2011	340,927	689,242	1,030,169	63,816	340,927	1,093,985	1,243,381	296,280	1,093,672	1,413,381	63,816	1,477,197
2010	2012	296,280	702,879	999,159	65,889	296,280	1,065,048	1,389,952	302,249	1,093,672	1,389,952	65,889	1,455,841
2011	2013	302,249	741,671	1,043,920	68,036	302,249	1,111,956	1,409,077	306,833	1,106,828	1,409,077	68,036	1,477,113
2012	2014	306,833	814,576	1,121,409	70,149	309,605	1,191,558	1,473,105	309,605	1,166,272	1,473,105	70,149	1,543,254
2013	2015	309,605	877,334	1,186,939	72,094	309,605	1,259,033	1,515,818	309,174	1,206,213	1,515,818	72,094	1,587,912
2014	2016	309,174	910,353	1,219,527	74,049	309,174	1,293,577	1,550,463	308,746	1,196,289	1,505,463	74,049	1,579,513
2015	2017	308,746	950,936	1,259,682	76,254	308,746	1,335,936	1,582,344	308,831	1,193,588	1,502,344	76,254	1,578,598
2016	2018	308,831	983,823	1,302,654	78,523	308,831	1,381,177	1,590,530	308,197	1,191,699	1,500,530	78,523	1,579,053
2017	2019	308,197	1,038,589	1,346,786	80,925	308,197	1,427,711	1,600,530	307,027	1,189,681	1,497,878	80,925	1,578,803
2018	2020	307,027	1,085,271	1,392,298	83,054	307,027	1,475,352	1,617,414	303,507	1,187,414	1,484,441	83,054	1,577,495
2019	2021	303,507	1,133,542	1,437,049	85,339	303,507	1,522,388	1,623,584	300,755	1,179,495	1,472,758	85,339	1,558,126
2020	2022	300,755	1,182,946	1,483,701	87,876	300,755	1,571,577	1,633,584	298,915	1,173,843	1,460,250	87,876	1,548,126
2021	2023	298,915	1,234,117	1,533,032	90,553	298,915	1,623,584	1,643,172	298,099	1,167,616	1,465,715	90,553	1,558,144
2022	2024	298,099	1,287,355	1,585,454	93,429	298,099	1,678,883	1,653,032	297,404	1,160,633	1,449,206	93,429	1,548,289
2023	2025	297,404	1,342,646	1,640,050	96,286	297,404	1,736,315	1,658,993	296,123	1,153,033	1,440,274	96,286	1,536,319
2024	2026	296,123	1,400,270	1,696,393	99,082	296,123	1,795,476	1,663,768	294,526	1,143,646	1,438,172	99,082	1,537,254
2025	2027	294,526	1,459,381	1,753,907	102,052	294,526	1,855,959	1,672,733	292,733	1,132,349	1,425,082	102,052	1,527,135
2026	2028	292,733	1,520,149	1,812,892	104,923	292,733	1,917,804	1,682,274	291,624	1,119,159	1,410,783	104,923	1,515,057
2027	2029	291,624	1,582,694	1,874,318	108,274	291,624	1,982,592	1,690,768	290,408	1,103,373	1,397,141	111,757	1,508,897
2028	2030	290,408	1,646,637	1,940,405	111,757	290,408	2,052,161	1,700,000	300,408	1,086,539	1,383,099	115,408	1,498,507
2029	2031	290,560	1,713,433	2,009,993	115,408	290,560	2,125,401	1,708,835	305,400	1,045,188	1,367,478	119,225	1,486,701
2030	2032	300,408	1,782,095	2,082,503	119,225	300,408	2,201,728	1,716,163	311,307	1,019,834	1,351,141	123,219	1,473,807
2031	2033	305,400	1,853,218	2,158,616	123,219	305,400	2,281,835	1,724,451	318,524	989,287	1,336,141	127,420	1,463,562
2032	2034	311,307	1,926,435	2,237,742	127,420	311,307	2,365,163	1,731,389	326,738	952,961	1,320,699	131,835	1,452,534
2033	2035	318,524	2,007,030	2,319,594	131,835	318,524	2,450,791	1,738,006	335,707	908,604	1,306,311	141,288	1,447,599
2034	2036	326,738	2,077,602	2,404,340	136,451	326,738	2,540,791	1,742,167	345,820	851,167	1,290,987	146,329	1,437,316
2035	2037	335,707	2,156,011	2,491,718	141,288	335,707	2,633,006	1,746,319	356,545	771,319	1,275,864	151,613	1,427,477
2036	2038	345,820	2,235,171	2,580,991	146,329	345,820	2,727,219	1,751,076	368,137	641,527	1,260,664	162,941	1,423,605
2037	2039	356,545	2,314,008	2,670,553	151,613	356,545	2,822,167	1,756,926	380,560	562,903	1,248,070	169,014	1,417,084
2038	2040	368,137	2,387,789	2,759,926	157,150	368,137	2,913,076	1,763,191	393,899	480,000	1,233,191	175,751	1,408,942
2039	2041	380,560	2,435,130	2,815,690	162,941	380,560	2,978,631	1,767,014	393,899	393,899	1,218,115	181,014	1,400,129
2040	2042	393,899	0	393,899	169,014	393,899	562,903	1,767,014	393,899	0	393,899	169,014	562,903

All numbers are in thousands





**APPENDIX A**

**Attachment 3**

**Connecticut SERS**  
**30 Year Projection based on June 30, 2008 Valuation**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier II - Non-Hazardous**

Valuation Year Ending 6/30/2010	Fiscal Year Ending 6/30/2010	Annual Salary	Unfunded Accrued Liability at Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio - Assets / Liability	Amortization Period	Unfunded Accrued Liability at Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio - Assets / Liability	Amortization Period
2008	2010	3,497,445	1,014,096	9,990,247	51.9%	30	8,253,126	9,990,247	50.0%	30
2009	2011	3,637,342	1,070,474	8,787,160	42.7%	30	11,794,163	8,787,160	42.7%	30
2010	2012	3,220,225	1,290,393	10,177,320	46.9%	30	11,514,374	10,177,320	46.9%	30
2011	2013	3,273,940	1,336,438	10,547,013	47.4%	29	11,303,351	10,945,719	49.2%	29
2012	2014	3,326,819	1,386,377	10,937,082	45.1%	28	11,922,359	11,207,928	48.7%	28
2013	2015	3,379,197	1,440,090	10,454,679	43.9%	27	12,134,132	11,697,481	49.1%	27
2014	2016	3,429,521	1,498,162	11,060,584	44.9%	26	11,901,661	12,747,060	51.7%	26
2015	2017	3,468,578	1,563,167	11,590,637	45.5%	25	11,733,863	13,736,013	53.9%	25
2016	2018	3,500,845	1,633,991	12,127,700	46.1%	24	11,563,047	14,727,784	56.0%	24
2017	2019	3,539,454	1,703,235	12,681,613	46.8%	23	11,378,099	15,731,553	58.0%	23
2018	2020	3,569,670	1,778,038	13,250,844	47.5%	22	11,177,866	16,743,906	60.0%	22
2019	2021	3,609,117	1,851,173	13,839,685	48.2%	21	10,954,664	17,766,592	61.9%	21
2020	2022	3,642,390	1,932,351	14,442,600	48.0%	20	10,701,334	18,791,188	63.7%	20
2021	2023	3,674,579	2,015,344	15,059,901	49.8%	19	10,424,844	19,813,964	65.5%	19
2022	2024	3,709,794	2,098,233	15,692,375	50.7%	18	10,127,124	20,833,480	67.3%	18
2023	2025	3,747,158	2,181,912	16,346,300	51.6%	17	9,805,613	21,850,008	69.0%	17
2024	2026	3,789,614	2,264,481	17,026,587	52.7%	16	9,460,120	22,864,501	70.7%	16
2025	2027	3,825,765	2,352,694	17,731,335	53.8%	15	9,079,794	23,869,964	72.4%	15
2026	2028	3,863,460	2,441,294	18,462,321	55.1%	14	8,662,223	24,862,516	74.2%	14
2027	2029	3,897,782	2,533,924	19,217,636	56.5%	13	8,211,943	25,893,695	75.9%	13
2028	2030	3,933,301	2,627,169	19,998,328	58.0%	12	7,722,092	26,777,235	77.6%	12
2029	2031	3,964,584	2,713,964	20,814,774	59.6%	11	7,208,877	27,695,568	79.4%	11
2030	2032	4,042,531	2,796,785	21,678,098	61.5%	10	6,656,641	28,590,853	81.1%	10
2031	2033	4,114,265	2,871,571	22,603,932	63.6%	9	6,072,253	29,469,163	82.9%	9
2032	2034	4,195,157	2,941,879	23,604,917	66.0%	8	5,452,188	30,332,211	84.8%	8
2033	2035	4,283,658	3,005,136	24,689,321	68.7%	7	4,792,260	31,185,000	86.7%	7
2034	2036	4,366,342	3,060,205	25,903,158	71.7%	6	4,099,459	32,032,633	88.7%	6
2035	2037	4,503,148	3,107,567	27,239,368	75.1%	5	3,376,989	32,878,987	90.7%	5
2036	2038	4,632,741	3,145,072	28,731,775	79.0%	4	2,624,047	33,730,394	92.8%	4
2037	2039	4,776,007	3,173,040	30,406,748	83.4%	3	1,848,663	34,591,154	94.9%	3
2038	2040	4,930,834	3,194,481	32,268,638	88.4%	2	1,060,569	36,457,603	97.1%	2
2039	2041	5,096,874	3,208,687	34,402,894	94.0%	1	280,968	36,317,607	99.2%	1
2040	2042	5,274,629	3,215,464	36,772,293	100.0%	0	0	37,129,716	100.0%	0

All numbers are in thousands

8/2/2010



**APPENDIX A**

**Attachment 4**

**Connecticut SERS**

**30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier II - Non Hazardous**

Valuation Year Ending 5/31/YY	Fiscal Year Ending 6/30/YY	(1) Normal Cost	(2) Amortization of Unfunded Actuarial Liability	(3) Total State Contributions	(4) Employees Contribution	(5) Total Contribution	(6) Normal Cost	(7) Amortization of Unfunded Actuarial Liability	(8) Total State Contribution	(9) Employees Contribution	(10) Total Contribution	(11) Least Dollar Amortization Method	(12) Total Contribution
2008	2010	335,323	562,105	897,428	61,475	958,903	335,323	562,105	897,428	61,475	958,903		958,903
2009	2011	340,927	689,242	1,030,169	63,145	1,093,314	340,927	1,072,454	1,413,381	63,145	1,476,526		1,476,526
2010	2012	276,707	672,892	949,599	64,950	1,014,548	276,707	1,047,012	1,323,719	64,950	1,388,668		1,388,668
2011	2013	285,291	696,093	981,384	66,802	1,048,185	285,291	1,036,563	1,321,854	66,802	1,388,656		1,388,656
2012	2014	292,454	786,345	1,058,799	68,588	1,127,387	292,454	1,094,230	1,388,684	68,588	1,455,272		1,455,272
2013	2015	298,226	827,154	1,125,380	70,204	1,195,584	298,226	1,134,494	1,432,720	70,204	1,502,924		1,502,924
2014	2016	301,059	888,209	1,159,268	71,848	1,231,116	301,059	1,125,131	1,428,790	71,848	1,498,038		1,498,038
2015	2017	303,664	896,589	1,200,253	73,716	1,273,969	303,664	1,122,792	1,428,456	73,716	1,500,172		1,500,172
2016	2018	306,735	937,163	1,243,899	75,873	1,319,672	306,735	1,121,223	1,427,959	75,873	1,503,632		1,503,632
2017	2019	309,210	979,477	1,288,687	77,732	1,366,419	309,210	1,119,484	1,428,684	77,732	1,506,426		1,506,426
2018	2020	311,307	1,023,626	1,334,933	79,500	1,414,433	311,307	1,117,540	1,428,847	79,500	1,508,347		1,508,347
2019	2021	311,809	1,069,231	1,381,040	81,444	1,462,484	311,809	1,114,708	1,428,517	81,444	1,507,961		1,507,961
2020	2022	313,445	1,115,902	1,429,347	83,663	1,513,010	313,445	1,109,395	1,428,924	83,663	1,507,418		1,507,418
2021	2023	315,812	1,164,258	1,480,070	86,043	1,566,114	315,812	1,105,112	1,428,924	86,043	1,507,961		1,507,961
2022	2024	318,918	1,214,587	1,533,505	88,664	1,622,169	318,918	1,099,395	1,414,728	88,664	1,506,968		1,506,968
2023	2025	321,731	1,266,880	1,588,611	91,339	1,679,950	321,731	1,092,997	1,414,728	91,339	1,506,067		1,506,067
2024	2026	322,586	1,321,272	1,643,858	94,027	1,737,885	322,586	1,085,917	1,408,503	94,027	1,502,530		1,502,530
2025	2027	321,885	1,377,057	1,698,942	96,994	1,795,935	321,885	1,077,036	1,398,921	96,994	1,495,914		1,495,914
2026	2028	319,649	1,434,102	1,753,751	99,930	1,853,681	319,649	1,066,007	1,385,666	99,930	1,485,586		1,485,586
2027	2029	316,631	1,492,906	1,809,537	103,397	1,912,935	316,631	1,063,308	1,369,939	103,397	1,473,337		1,473,337
2028	2030	316,108	1,552,881	1,868,989	107,085	1,976,073	316,108	1,037,995	1,354,103	107,085	1,461,187		1,461,187
2029	2031	315,917	1,615,608	1,931,525	110,958	2,042,484	315,917	1,021,791	1,337,708	110,958	1,448,667		1,448,667
2030	2032	316,369	1,680,199	1,996,568	115,041	2,111,609	316,369	1,003,251	1,319,620	115,041	1,434,661		1,434,661
2031	2033	318,117	1,746,869	2,064,986	119,336	2,184,322	318,117	982,174	1,300,291	119,336	1,419,628		1,419,628
2032	2034	320,487	1,815,462	2,136,949	123,844	2,259,793	320,487	957,782	1,278,269	123,844	1,402,113		1,402,113
2033	2035	324,126	1,885,194	2,209,322	128,562	2,337,885	324,126	928,346	1,252,474	128,562	1,381,037		1,381,037
2034	2036	329,305	1,956,792	2,286,097	133,470	2,419,567	329,305	893,512	1,222,817	133,470	1,356,287		1,356,287
2035	2037	335,786	2,030,301	2,366,039	138,576	2,504,665	335,786	851,369	1,187,157	138,576	1,325,733		1,325,733
2036	2038	344,044	2,104,253	2,448,297	143,871	2,592,168	344,044	796,668	1,140,712	143,871	1,284,583		1,284,583
2037	2039	353,515	2,177,579	2,531,094	149,392	2,680,487	353,515	720,581	1,074,096	149,392	1,223,489		1,223,489
2038	2040	364,320	2,245,370	2,609,690	155,153	2,764,844	364,320	596,774	961,094	155,153	1,116,248		1,116,248
2039	2041	376,374	2,285,407	2,661,781	161,157	2,822,939	376,374	304,148	680,522	161,157	841,680		841,680
2040	2042	389,689	0	389,689	167,431	557,120	389,689	0	389,689	167,431	557,120		557,120

All numbers are in thousands



**APPENDIX A**

**Attachment 5**

**Connecticut SERS  
30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter.  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier IIA - Non-Hazardous**

Valuation Year Ending 6/30/08	Fiscal Year Ending 6/30/09	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Assets Available for Retirement	Unfunded Accrued Liability at Beginning of Valuation	Plan Assets at Beginning of Valuation	Prudent Asset Liability	Amortization Percent	Unfunded Accrued Liability at Beginning of Valuation	Plan Assets at Beginning of Valuation	Excess Ratio Assets to Liability
2008	2010	3,497,445	1,074,096	9,253,126	9,990,247	51.9%	9,253,126	9,990,247	50.0%
2009	2011	3,637,342	1,070,474	11,794,163	8,787,160	42.7%	11,794,163	8,787,160	42.7%
2010	2012	3,188,584	1,303,345	11,937,164	10,177,320	46.0%	11,937,164	10,177,320	46.0%
2011	2013	3,270,559	1,356,659	12,262,153	10,518,201	46.2%	12,262,153	10,518,201	46.2%
2012	2014	3,270,357	1,412,842	13,231,402	10,362,251	43.9%	13,231,402	11,197,390	47.9%
2013	2015	3,312,527	1,473,259	13,966,757	10,493,335	42.8%	13,966,757	11,171,038	47.5%
2014	2016	3,351,187	1,538,902	14,188,824	11,034,395	43.8%	14,188,824	12,775,782	48.0%
2015	2017	3,382,324	1,610,657	14,494,283	11,548,087	44.3%	14,494,283	13,769,005	50.7%
2016	2018	3,412,654	1,686,402	14,793,776	12,060,741	44.9%	14,793,776	14,756,810	52.9%
2017	2019	3,448,545	1,761,291	15,075,862	12,581,668	45.5%	15,075,862	15,747,881	55.0%
2018	2020	3,481,117	1,840,064	15,356,791	13,110,849	46.1%	15,356,791	16,740,300	56.9%
2019	2021	3,516,187	1,919,167	15,591,842	13,650,197	46.7%	15,591,842	17,733,401	58.9%
2020	2022	3,542,667	2,007,519	15,740,824	14,191,931	47.4%	15,740,824	18,716,450	62.5%
2021	2023	3,569,008	2,096,531	15,876,696	14,734,239	48.1%	15,876,696	19,683,966	64.3%
2022	2024	3,600,122	2,184,263	15,998,061	15,280,204	48.9%	15,998,061	20,634,751	66.0%
2023	2025	3,636,191	2,270,399	16,009,812	15,834,305	48.7%	16,009,812	21,568,810	67.7%
2024	2026	3,680,081	2,354,676	15,996,883	16,402,268	50.6%	15,996,883	22,487,034	69.4%
2025	2027	3,723,860	2,438,760	15,910,514	16,997,487	51.6%	15,910,514	23,387,488	71.1%
2026	2028	3,773,364	2,521,991	15,750,698	17,593,719	52.8%	15,750,698	24,268,031	72.8%
2027	2029	3,828,312	2,600,931	15,507,962	18,228,335	54.0%	15,507,962	25,128,127	74.5%
2028	2030	3,887,537	2,676,940	15,167,791	18,898,538	55.5%	15,167,791	25,970,514	76.2%
2029	2031	3,953,377	2,743,248	14,737,267	19,620,292	57.1%	14,737,267	26,799,853	78.0%
2030	2032	4,048,349	2,803,302	14,196,495	20,409,049	59.0%	14,196,495	27,623,194	79.8%
2031	2033	4,147,074	2,855,881	13,541,360	21,282,131	61.1%	13,541,360	28,447,857	81.7%
2032	2034	4,254,077	2,903,408	12,764,193	22,255,277	63.6%	12,764,193	29,276,142	83.6%
2033	2035	4,366,695	2,944,959	11,815,018	23,347,437	66.4%	11,815,018	30,120,295	85.7%
2034	2036	4,488,768	2,980,700	10,716,149	24,578,011	69.6%	10,716,149	30,979,160	87.8%
2035	2037	4,620,970	3,010,938	9,443,692	25,966,822	73.3%	9,443,692	31,857,673	90.0%
2036	2038	4,759,677	3,035,811	7,974,840	27,535,081	77.5%	7,974,840	32,757,562	92.3%
2037	2039	4,907,405	3,055,264	6,296,542	29,305,008	82.3%	6,296,542	33,677,814	94.6%
2038	2040	5,063,463	3,071,347	4,994,739	31,296,056	87.7%	4,994,739	34,608,546	97.0%
2039	2041	5,227,474	3,083,269	2,252,666	33,527,448	93.7%	2,252,666	35,528,813	99.3%
2040	2042	5,399,436	3,092,206	0	36,011,809	100.0%	0	36,384,592	100.0%

All numbers are in thousands.

8/2/2010



**APPENDIX A**

**Attachment 6**

**Connecticut SERS  
30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier IIA - Non-Hazardous**

Valuation Year Ending 6/30/YY	(1) Normal Cost	(2) Amortization of Unfunded Actuarial Liability	(3) Total State Contributions	(4) Employer Contributions	(5) Total Contribution	(6) Normal Cost	(7) Amortization of Unfunded Actuarial Liability	(8) Total State Contribution	(9) Employer Contributions	(10) Total Contribution	(11) Total
2008	335,323	562,105	897,428	61,952	959,380	335,323	562,105	897,428	61,952	959,380	959,380
2009	340,927	689,242	1,030,168	63,982	1,094,151	340,927	1,072,454	1,413,381	63,982	1,477,363	1,477,363
2010	280,859	697,599	976,458	66,171	1,044,628	280,859	1,044,628	1,366,316	66,171	1,432,486	1,432,486
2011	286,331	729,410	1,015,741	68,439	1,084,179	286,331	1,087,926	1,374,257	68,439	1,442,695	1,442,695
2012	290,601	801,392	1,091,999	70,673	1,162,666	290,601	1,146,422	1,437,023	70,673	1,507,696	1,507,696
2013	293,029	863,625	1,156,654	72,772	1,229,426	293,029	1,186,439	1,479,468	72,772	1,552,240	1,552,240
2014	292,388	896,147	1,188,535	74,905	1,263,440	292,388	1,176,727	1,469,115	74,905	1,544,020	1,544,020
2015	292,017	936,313	1,228,380	77,301	1,305,631	292,017	1,174,405	1,466,427	77,301	1,543,723	1,543,723
2016	292,360	978,893	1,271,253	79,777	1,351,030	292,360	1,173,067	1,465,422	79,777	1,545,204	1,545,204
2017	292,197	1,023,456	1,315,653	82,291	1,397,944	292,197	1,171,783	1,463,980	82,291	1,546,271	1,546,271
2018	291,250	1,070,085	1,361,335	84,498	1,445,823	291,250	1,170,476	1,461,726	84,488	1,546,214	1,546,214
2019	287,532	1,118,108	1,405,640	86,790	1,492,430	287,532	1,168,025	1,455,557	86,790	1,542,347	1,542,347
2020	284,263	1,167,115	1,451,378	89,297	1,540,675	284,263	1,163,720	1,447,280	89,297	1,537,280	1,537,280
2021	281,672	1,217,732	1,499,404	91,936	1,591,340	281,672	1,158,341	1,440,013	91,936	1,531,949	1,531,949
2022	280,002	1,270,258	1,550,280	94,742	1,645,002	280,002	1,152,197	1,432,199	94,742	1,526,941	1,526,941
2023	278,350	1,324,830	1,603,180	97,457	1,700,637	278,350	1,145,329	1,423,679	97,457	1,521,136	1,521,136
2024	275,848	1,381,631	1,657,479	100,179	1,757,658	275,848	1,137,801	1,413,649	100,179	1,513,828	1,513,828
2025	273,101	1,439,882	1,712,783	103,027	1,815,810	273,101	1,128,128	1,401,229	103,027	1,504,256	1,504,256
2026	270,331	1,499,628	1,769,959	105,743	1,875,702	270,331	1,116,968	1,387,299	105,743	1,493,042	1,493,042
2027	268,092	1,561,376	1,829,468	108,947	1,938,415	268,092	1,104,015	1,372,107	108,947	1,481,054	1,481,054
2028	269,065	1,624,287	1,893,352	112,284	2,005,636	269,065	1,088,231	1,357,296	112,284	1,469,580	1,469,580
2029	270,784	1,690,106	1,960,890	115,830	2,076,720	270,784	1,071,531	1,342,315	115,830	1,458,145	1,458,145
2030	273,806	1,757,846	2,031,656	119,637	2,151,193	273,806	1,052,340	1,328,148	119,537	1,445,685	1,445,685
2031	278,195	1,828,407	2,106,602	123,365	2,229,967	278,195	1,031,245	1,309,440	123,365	1,432,805	1,432,805
2032	283,643	1,901,128	2,184,771	127,371	2,312,142	283,643	1,006,818	1,290,461	127,371	1,417,832	1,417,832
2033	290,516	1,974,796	2,265,312	131,578	2,396,891	290,516	976,756	1,267,272	131,578	1,398,851	1,398,851
2034	298,188	2,049,996	2,348,184	135,930	2,484,114	298,188	940,491	1,238,679	135,930	1,374,609	1,374,609
2035	306,095	2,126,469	2,432,564	140,480	2,573,044	306,095	895,703	1,201,798	140,480	1,342,278	1,342,278
2036	314,623	2,201,471	2,516,054	145,217	2,661,311	314,623	835,623	1,150,246	145,217	1,295,463	1,295,463
2037	323,505	2,272,577	2,596,182	150,167	2,746,349	323,505	749,844	1,073,349	150,167	1,223,516	1,223,516
2038	333,203	2,332,963	2,666,166	155,332	2,821,498	333,203	698,973	962,176	155,332	1,097,508	1,097,508
2039	343,331	2,344,743	2,668,074	160,774	2,848,847	343,331	272,055	615,386	160,774	776,159	776,159
2040	354,072	0	354,072	166,487	520,560	354,072	0	354,072	166,487	520,560	520,560

All numbers are in thousands



**APPENDIX A**

**Attachment 7**

**Connecticut SERS  
30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier I - Hazardous**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Level Percent of Payroll	Plan Assets at Beginning of Valuation Year	Unfunded Accrued Liability at Beginning of Valuation Year	Funded Ratio - Assets / Liability	Amortization Period	Unfunded Accrued Liability at Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Level Dollar Amortization Method	Function Ratio - Assets / Liability
2008	2010	3,497,445	1,014,096	9,990,247	51.9%	30	9,253,126	9,990,247	107.9%	50.0%
2009	2011	3,637,342	1,070,474	8,787,160	42.7%	30	11,794,163	8,787,160	117.9%	42.7%
2010	2012	3,194,936	1,296,204	10,177,320	46.5%	30	11,726,512	10,177,320	117.2%	46.5%
2011	2013	3,238,639	1,343,147	10,538,344	46.7%	29	11,607,832	10,937,050	116.0%	48.5%
2012	2014	3,284,240	1,393,203	10,991,747	44.5%	28	12,128,738	11,219,765	112.1%	48.1%
2013	2015	3,328,914	1,447,129	10,480,148	43.4%	27	12,433,996	11,740,920	112.4%	48.6%
2014	2016	3,372,259	1,504,796	11,111,284	44.4%	26	12,193,875	12,826,921	122.4%	51.3%
2015	2017	3,409,143	1,566,764	11,673,357	45.1%	25	12,019,189	13,859,045	132.0%	53.6%
2016	2018	3,439,643	1,635,946	12,250,405	45.8%	24	11,842,254	14,901,750	142.7%	55.7%
2017	2019	3,470,271	1,707,642	12,848,441	46.5%	23	11,651,431	15,960,386	154.6%	57.8%
2018	2020	3,497,287	1,783,164	13,467,098	47.3%	22	11,445,148	17,032,698	166.3%	59.8%
2019	2021	3,523,476	1,864,351	14,103,219	48.1%	21	11,216,936	18,112,944	188.3%	61.8%
2020	2022	3,535,784	1,960,173	14,742,289	48.9%	20	10,958,237	19,183,661	210.7%	63.6%
2021	2023	3,545,854	2,060,631	15,332,850	49.8%	19	10,675,781	20,233,915	236.4%	65.5%
2022	2024	3,565,884	2,157,043	15,824,257	50.6%	18	10,371,541	21,264,273	262.7%	67.2%
2023	2025	3,587,111	2,255,612	16,266,997	51.5%	17	10,042,990	22,271,007	291.6%	68.9%
2024	2026	3,620,615	2,349,890	16,667,147	52.5%	16	9,690,869	23,256,630	323.6%	70.8%
2025	2027	3,656,512	2,443,615	17,045,415	53.5%	15	9,302,821	24,219,723	364.9%	72.9%
2026	2028	3,696,721	2,537,095	17,406,086	54.7%	14	8,879,683	25,157,442	412.5%	73.9%
2027	2029	3,743,096	2,626,460	17,750,352	56.0%	13	8,421,403	26,070,086	467.3%	75.6%
2028	2030	3,795,919	2,712,089	18,086,393	57.4%	12	7,923,385	26,957,297	530.7%	77.3%
2029	2031	3,863,676	2,799,235	18,414,285	59.0%	11	7,398,354	27,825,199	608.3%	79.0%
2030	2032	3,940,654	2,889,351	18,735,104	60.9%	10	6,835,630	28,680,281	692.8%	80.8%
2031	2033	4,029,075	2,983,766	19,050,555	62.9%	9	6,239,500	29,527,321	785.6%	82.6%
2032	2034	4,128,909	3,082,986	19,360,221	65.3%	8	5,606,453	30,368,782	888.4%	84.4%
2033	2035	4,232,922	3,187,609	19,666,609	68.0%	7	4,932,274	31,214,100	1,002.4%	86.4%
2034	2036	4,350,935	3,298,546	19,969,943	71.1%	6	4,222,935	32,066,764	1,139.4%	88.4%
2035	2037	4,479,903	3,415,700	20,270,249	74.6%	5	3,481,146	32,931,805	1,294.4%	90.4%
2036	2038	4,618,906	3,539,389	20,569,968	78.3%	4	2,707,935	33,813,501	1,469.4%	92.6%
2037	2039	4,768,623	3,667,863	20,862,828	83.1%	3	1,911,098	34,713,895	1,664.4%	94.8%
2038	2040	4,927,586	3,798,187	21,159,012	88.2%	2	1,100,498	35,627,287	1,884.4%	97.0%
2039	2041	5,096,558	3,938,752	21,459,205	93.9%	1	297,576	36,539,083	2,119.4%	99.2%
2040	2042	5,275,204	4,085,537	21,763,395	100.0%	0	0	37,405,984	2,319.4%	100.0%

All numbers are in thousands

8/2/2010



**APPENDIX A**

**Attachment 8**

**Connecticut SERS  
30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier II - Hazardous**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1) Normal Cost	(2) Level of Unfunded Actuarial Liability	(3) Total State Contribution	(4) Employee Contributions	(5) Total Contributions	(6) Normal Cost %	(7) Level of Unfunded Actuarial Liability	(8) Total State Contribution	(9) Employee Contributions	(10) Total Contributions
2008	2010	335,323	562,105	897,428	62,381	959,809	335,323	562,105	897,428	62,381	959,809
2009	2011	340,927	689,242	1,030,169	64,788	1,094,957	340,927	1,072,454	1,413,381	64,788	1,478,169
2010	2012	281,283	685,289	966,572	67,325	1,033,897	281,283	1,065,302	1,347,585	67,325	1,414,910
2011	2013	289,710	714,205	1,003,915	69,953	1,073,868	289,710	1,064,485	1,354,195	69,953	1,424,148
2012	2014	297,240	785,351	1,082,591	72,660	1,155,252	297,240	1,122,587	1,419,827	72,660	1,492,488
2013	2015	303,794	846,807	1,150,601	75,347	1,225,948	303,794	1,162,531	1,466,325	75,347	1,541,672
2014	2016	308,551	878,508	1,187,059	77,884	1,264,943	308,551	1,152,756	1,461,307	77,884	1,539,191
2015	2017	312,967	917,618	1,230,585	80,470	1,311,054	312,967	1,150,084	1,463,053	80,470	1,543,520
2016	2018	316,766	959,030	1,275,796	83,169	1,358,965	316,766	1,148,297	1,465,053	83,169	1,548,232
2017	2019	320,066	1,002,242	1,322,248	85,646	1,407,892	320,066	1,146,317	1,466,363	85,645	1,552,027
2018	2020	321,251	1,047,336	1,368,587	87,521	1,456,108	321,251	1,144,262	1,465,513	87,521	1,553,034
2019	2021	318,186	1,094,026	1,412,212	89,342	1,501,554	318,186	1,141,395	1,459,581	89,342	1,548,923
2020	2022	314,415	1,141,830	1,456,245	91,553	1,547,798	314,415	1,136,965	1,451,380	91,553	1,542,933
2021	2023	311,653	1,191,360	1,503,013	93,730	1,596,743	311,653	1,131,713	1,443,366	93,730	1,537,096
2022	2024	309,079	1,242,909	1,551,988	96,247	1,648,234	309,079	1,125,929	1,435,008	96,247	1,531,254
2023	2025	307,015	1,296,462	1,603,477	98,724	1,702,200	307,015	1,119,433	1,426,448	98,724	1,525,171
2024	2026	304,270	1,352,288	1,656,558	101,221	1,757,779	304,270	1,112,404	1,416,674	101,221	1,517,895
2025	2027	301,449	1,409,516	1,710,964	103,864	1,814,829	301,449	1,103,491	1,404,340	103,864	1,508,305
2026	2028	298,384	1,468,342	1,766,726	106,449	1,873,175	298,384	1,092,769	1,391,153	106,449	1,497,602
2027	2029	296,193	1,528,870	1,825,063	109,478	1,934,541	296,193	1,080,188	1,376,381	109,478	1,485,859
2028	2030	297,125	1,590,719	1,887,844	112,656	2,000,500	297,125	1,065,053	1,362,178	112,656	1,474,834
2029	2031	298,758	1,655,359	1,954,117	116,020	2,070,137	298,758	1,048,938	1,347,696	116,020	1,463,716
2030	2032	301,519	1,721,767	2,023,286	119,604	2,142,890	301,519	1,030,227	1,331,746	119,604	1,451,350
2031	2033	305,649	1,790,587	2,096,236	123,375	2,219,612	305,649	1,009,255	1,314,874	123,375	1,438,250
2032	2034	310,701	1,861,451	2,172,152	127,404	2,299,556	310,701	984,851	1,295,582	127,404	1,425,986
2033	2035	317,280	1,938,610	2,250,890	131,676	2,382,565	317,280	965,469	1,272,749	131,676	1,404,424
2034	2036	324,923	2,007,643	2,332,566	136,180	2,468,746	324,923	920,425	1,245,348	136,180	1,381,528
2035	2037	333,496	2,083,463	2,416,959	140,927	2,557,986	333,496	877,628	1,211,124	140,927	1,352,051
2036	2038	343,460	2,159,961	2,503,421	145,897	2,649,318	343,460	822,136	1,165,596	145,897	1,311,493
2037	2039	354,037	2,236,083	2,590,120	151,130	2,741,251	354,037	744,918	1,098,955	151,130	1,250,086
2038	2040	365,600	2,307,096	2,672,696	156,622	2,829,318	365,600	619,208	984,809	156,622	1,141,430
2039	2041	377,995	2,351,787	2,729,782	162,369	2,892,152	377,995	322,126	700,121	162,369	862,491
2040	2042	391,504	0	391,504	168,398	559,903	391,504	0	391,504	168,398	559,903

All numbers are in thousands



APPENDIX A

Attachment 9

Connecticut SERS  
 30 Year Projection based on June 30, 2008 Valuation  
 Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter.  
 Recognizes the Early Retirement Incentive of 2009  
 Modified Retirement Eligibility for Tier I(A) Hazardous

Valuation Year Ending 6/30/20XX	Fiscal Year Ending 6/30/20XX	Annual Payroll	Projected Payroll	Unfunded Accrued Liability at Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio: Assets / Liability	Amortization Period	Unfunded Accrued Liability at Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio: Assets / Liability	Amortization Period
2008	2010	3,497,445	1,014,096	9,253,126	9,990,247	51.9%	30	9,253,126	9,990,247	50.0%	30
2009	2011	3,637,342	1,070,474	11,794,163	6,787,160	42.7%	30	11,794,163	6,787,160	42.7%	30
2010	2012	3,183,279	1,304,684	11,943,623	10,177,320	46.0%	30	11,943,623	10,177,320	46.0%	30
2011	2013	3,216,458	1,359,423	12,282,363	10,514,140	46.1%	29	11,383,677	10,912,847	47.9%	29
2012	2014	3,251,734	1,417,385	13,236,466	10,352,845	43.9%	28	12,401,101	11,188,210	47.4%	28
2013	2015	3,285,833	1,479,788	13,873,888	10,415,305	42.7%	27	12,695,915	11,693,278	47.9%	27
2014	2016	3,316,075	1,547,652	14,186,541	11,002,475	43.7%	26	12,443,675	12,745,341	50.6%	26
2015	2017	3,336,867	1,622,063	14,480,316	11,495,426	44.3%	25	12,257,653	13,718,089	52.8%	25
2016	2018	3,355,059	1,700,691	14,785,307	11,979,534	44.8%	24	12,067,570	14,677,271	54.9%	24
2017	2019	3,378,101	1,778,570	15,030,489	12,462,668	45.3%	23	11,863,096	15,630,062	56.9%	23
2018	2020	3,396,527	1,860,564	15,271,600	12,943,174	45.9%	22	11,641,951	16,572,823	58.7%	22
2019	2021	3,426,399	1,938,951	15,495,991	13,426,037	46.4%	21	11,404,133	17,507,995	60.6%	21
2020	2022	3,457,606	2,019,297	15,670,627	13,911,993	47.0%	20	11,149,635	18,432,985	62.3%	20
2021	2023	3,493,034	2,098,781	15,819,114	14,404,618	47.7%	19	10,875,422	19,348,310	64.0%	19
2022	2024	3,533,976	2,176,265	15,924,975	14,910,091	48.4%	18	10,578,736	20,256,329	65.7%	18
2023	2025	3,581,445	2,250,908	15,983,824	15,435,992	49.1%	17	10,259,505	21,160,351	67.4%	17
2024	2026	3,634,232	2,326,184	15,993,611	15,986,815	50.0%	16	9,910,124	22,060,303	69.0%	16
2025	2027	3,684,644	2,405,337	15,903,818	16,562,448	51.0%	15	9,515,631	22,950,635	70.7%	15
2026	2028	3,740,192	2,482,856	15,749,714	17,167,202	52.2%	14	9,087,236	23,829,680	72.4%	14
2027	2029	3,805,026	2,553,926	15,516,293	17,811,726	53.4%	13	8,627,050	24,700,970	74.1%	13
2028	2030	3,877,347	2,620,570	15,190,267	18,506,436	54.9%	12	8,129,304	25,567,399	75.9%	12
2029	2031	3,958,969	2,680,760	14,767,037	19,255,314	56.6%	11	7,597,618	26,434,733	77.7%	11
2030	2032	4,043,831	2,738,617	14,222,815	20,100,446	58.6%	10	7,017,469	27,305,792	79.6%	10
2031	2033	4,134,539	2,794,337	13,552,770	21,022,057	60.8%	9	6,394,233	28,180,594	81.5%	9
2032	2034	4,232,496	2,846,751	12,747,777	22,041,935	63.4%	8	5,730,578	29,059,134	83.5%	8
2033	2035	4,333,548	2,896,773	11,786,738	23,173,894	66.3%	7	5,018,486	29,942,146	85.7%	7
2034	2036	4,452,714	2,933,541	10,675,864	24,440,878	69.6%	6	4,278,843	30,837,899	87.8%	6
2035	2037	4,579,707	2,967,529	9,391,930	25,859,542	73.4%	5	3,505,401	31,746,071	90.1%	5
2036	2038	4,715,925	2,995,347	7,919,167	27,452,121	77.6%	4	2,702,144	32,669,744	92.4%	4
2037	2039	4,862,341	3,016,931	6,246,060	29,240,634	82.4%	3	1,878,850	33,607,865	94.7%	3
2038	2040	5,017,624	3,035,385	4,393,354	31,244,744	87.8%	2	1,046,944	34,551,155	97.1%	2
2039	2041	5,182,650	3,046,737	2,228,232	33,485,002	93.8%	1	232,702	35,480,532	99.4%	1
2040	2042	5,357,606	3,057,048	0	35,975,088	100.0%	0	0	36,343,752	100.0%	0

All numbers are in thousands.



**APPENDIX A**

**Attachment 10**

**Connecticut SERS**  
**30 Year Projection based on June 30, 2008 Valuation.**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier I/A Hazardous**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1) Normal Cost	(2) Amortization of Unfunded Accrued Liability	(3) Total State Contribution	(4) Employee Contribution	(5) Total Contribution (3)+(4)	(6) Normal Cost	(7) Amortization of Unfunded Accrued Liability	(8) Total State Contribution (7)+(8)	(9) Employee Contribution	(10) Total Contribution (9)+(10)
2008	2010	335,323	562,105	897,428	61,863	959,291	335,323	562,105	897,428	61,863	959,291
2009	2011	340,927	689,242	1,030,169	63,794	1,093,963	340,927	1,072,464	1,413,361	63,794	1,477,175
2010	2012	280,222	697,988	978,210	65,860	1,044,071	280,222	1,086,063	1,366,285	65,860	1,432,146
2011	2013	284,266	730,613	1,014,879	68,000	1,082,879	284,266	1,089,781	1,374,047	68,000	1,442,047
2012	2014	286,800	802,305	1,089,105	70,104	1,159,210	286,800	1,147,796	1,434,596	70,104	1,504,701
2013	2015	287,310	864,066	1,151,376	72,052	1,223,427	287,310	1,187,019	1,474,329	72,052	1,546,380
2014	2016	284,441	896,093	1,180,444	74,015	1,254,459	284,441	1,178,371	1,460,812	74,015	1,534,827
2015	2017	281,369	935,411	1,216,780	76,244	1,293,024	281,369	1,172,902	1,454,271	76,244	1,530,515
2016	2018	278,626	977,909	1,255,635	78,548	1,334,183	278,626	1,170,145	1,448,771	78,548	1,527,319
2017	2019	275,113	1,020,375	1,295,488	81,246	1,376,734	275,113	1,167,202	1,442,315	81,246	1,523,561
2018	2020	272,096	1,065,636	1,337,572	84,193	1,421,765	272,096	1,163,938	1,435,974	84,193	1,520,167
2019	2021	269,073	1,112,658	1,381,731	87,393	1,469,125	269,073	1,160,444	1,429,517	87,393	1,516,911
2020	2022	267,175	1,161,925	1,429,100	90,796	1,519,896	267,175	1,156,823	1,423,998	90,796	1,514,794
2021	2023	266,274	1,213,316	1,479,590	94,445	1,574,035	266,274	1,152,876	1,419,150	94,445	1,513,595
2022	2024	266,631	1,266,631	1,533,610	98,074	1,631,684	266,631	1,148,422	1,416,201	98,074	1,514,275
2023	2025	265,901	1,322,688	1,589,589	101,353	1,690,942	265,901	1,143,567	1,410,468	101,353	1,511,821
2024	2026	264,578	1,380,485	1,646,045	104,762	1,750,806	264,578	1,137,572	1,403,132	104,762	1,507,893
2025	2027	264,121	1,439,076	1,703,654	108,494	1,812,148	264,121	1,128,735	1,393,313	108,494	1,501,807
2026	2028	264,817	1,499,540	1,763,661	112,259	1,875,921	264,817	1,118,311	1,382,432	112,259	1,494,682
2027	2029	264,277	1,562,215	1,826,492	116,208	1,942,700	264,277	1,106,866	1,370,842	116,208	1,487,050
2028	2030	266,995	1,626,693	1,893,688	119,984	1,993,672	266,995	1,092,732	1,359,727	119,984	1,479,711
2029	2031	269,111	1,693,620	1,962,631	123,659	2,086,289	269,111	1,077,190	1,346,301	123,659	1,469,959
2030	2032	271,503	1,761,107	2,032,610	127,463	2,160,073	271,503	1,057,633	1,329,136	127,463	1,456,599
2031	2033	274,817	1,829,947	2,104,764	131,187	2,235,951	274,817	1,034,263	1,309,070	131,187	1,440,257
2032	2034	278,068	1,900,171	2,178,239	135,499	2,313,738	278,068	1,006,686	1,284,754	135,499	1,420,253
2033	2035	283,089	1,970,069	2,253,168	139,891	2,393,059	283,089	972,170	1,255,259	139,891	1,395,150
2034	2036	288,752	2,042,289	2,331,041	144,489	2,475,531	288,752	932,611	1,221,363	144,489	1,365,853
2035	2037	295,023	2,114,814	2,409,837	149,317	2,559,154	295,023	883,743	1,178,766	149,317	1,328,083
2036	2038	302,392	2,186,268	2,488,660	154,347	2,643,007	302,392	820,378	1,122,770	154,347	1,277,117
2037	2039	310,304	2,254,464	2,564,768	159,648	2,724,417	310,304	732,348	1,042,652	159,648	1,202,301
2038	2040	319,020	2,310,994	2,630,014	165,203	2,795,217	319,020	589,107	908,127	165,203	1,073,330
2039	2041	328,520	2,319,290	2,647,810	171,048	2,818,858	328,520	251,900	580,420	171,048	751,468
2040	2042	339,022	0	339,022	177,209	516,231	339,022	0	339,022	177,209	516,231

All numbers are in thousands





**APPENDIX B**

**Attachment 1**

**Connecticut SERS**

**30 Year Baseline Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year. Thereafter  
Recognizes the Early Retirement Incentive of 2009**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1) Annual Amounts Payable	(2) Contributions	(3) Unfunded Accrued Liability at Beginning of Valuation Year	(4) Plan Assets at Beginning of Valuation Year	(5) Funded Ratio - Assets/ Liability	(6) Amortization Period	(7) Unfunded Accrued Liability at Beginning of Valuation Year	(8) Plan Assets at Beginning of Valuation Year	(9) Level Dollar Amortization	(10) Funded Ratio - Assets/ Liability	(11) Amortization Period
2008	2009	3,637,342	1,014,096	9,253,126	9,990,247	51.9%	24	9,253,126	9,990,247	9.990,247	50.0%	24
2009	2010	3,183,548	1,304,721	11,784,163	8,787,160	42.7%	23	11,794,163	8,787,160	8,787,160	42.7%	23
2010	2011	3,216,895	1,359,478	12,027,504	10,177,320	45.8%	22	12,027,504	10,177,320	10,177,320	46.8%	22
2011	2012	3,252,351	1,417,478	12,457,861	10,524,501	45.8%	21	12,083,566	10,898,797	10,898,797	47.4%	21
2012	2013	3,286,599	1,479,923	13,395,564	10,417,873	43.8%	20	12,612,403	11,201,034	11,201,034	47.0%	20
2013	2014	3,317,006	1,547,841	14,086,051	10,561,305	44.2%	19	12,900,264	11,577,092	11,577,092	47.7%	19
2014	2015	3,337,845	1,622,443	14,451,004	11,900,736	44.2%	18	12,623,974	12,883,716	12,883,716	50.5%	18
2015	2016	3,355,923	1,701,354	14,623,938	12,561,871	46.2%	17	12,398,654	13,955,085	13,955,085	53.0%	17
2016	2017	3,378,632	1,779,770	14,749,388	13,257,731	47.3%	16	12,153,375	15,032,435	15,032,435	56.3%	16
2017	2018	3,396,579	1,862,420	14,818,478	13,992,048	48.8%	15	11,881,538	16,125,581	16,125,581	57.6%	15
2018	2019	3,421,570	1,944,621	14,816,378	14,772,166	48.9%	14	11,576,671	17,233,855	17,233,855	59.8%	14
2019	2020	3,439,823	2,036,373	14,726,048	15,596,787	51.4%	13	11,229,339	18,369,205	18,369,205	62.1%	13
2020	2021	3,460,315	2,126,613	14,544,434	16,471,356	53.1%	12	10,828,727	19,494,109	19,494,109	64.3%	12
2021	2022	3,487,572	2,215,823	14,262,031	17,407,471	55.0%	11	10,379,054	20,636,736	20,636,736	66.5%	11
2022	2023	3,519,754	2,303,799	13,863,207	18,418,344	57.1%	10	9,879,311	21,790,191	21,790,191	71.1%	10
2023	2024	3,561,026	2,389,695	13,393,673	19,520,574	59.4%	9	9,323,305	22,958,247	22,958,247	73.5%	9
2024	2025	3,604,586	2,474,736	12,843,804	20,730,653	62.1%	8	8,707,438	24,146,810	24,146,810	76.0%	8
2025	2026	3,651,491	2,560,164	11,773,350	22,066,244	65.2%	7	8,014,455	25,359,982	25,359,982	78.6%	7
2026	2027	3,704,677	2,641,245	10,698,224	23,552,414	68.8%	6	7,238,468	26,601,126	26,601,126	81.4%	6
2027	2028	3,763,216	2,719,256	9,384,610	25,217,776	72.9%	5	6,372,667	27,877,971	27,877,971	84.4%	5
2028	2029	3,837,498	2,788,085	7,808,550	27,106,076	77.8%	4	5,404,019	29,198,367	29,198,367	87.6%	4
2029	2030	3,920,591	2,850,389	5,811,998	29,271,692	83.2%	3	4,334,352	30,580,273	30,580,273	91.1%	3
2030	2031	4,014,693	2,907,051	3,626,633	31,791,799	88.8%	2	1,800,068	32,044,124	32,044,124	94.9%	2
2031	2032	4,117,089	2,959,612	0	34,796,754	100.0%	1	0	33,618,366	33,618,366	100.0%	1
2032	2033	4,227,474	3,005,218	0	38,064,095	100.0%	0	0	35,346,742	35,346,742	100.0%	0
2033	2034	4,348,830	3,043,889	0	39,143,389	100.0%	0	0	37,359,354	37,359,354	100.0%	0
2034	2035	4,480,504	3,076,731	0	39,640,156	100.0%	0	0	37,731,006	37,731,006	100.0%	0
2035	2036	4,621,869	3,103,220	0	40,163,694	100.0%	0	0	38,111,251	38,111,251	100.0%	0
2036	2037	4,773,502	3,123,427	0	40,723,764	100.0%	0	0	38,508,655	38,508,655	100.0%	0
2037	2038	4,934,070	3,140,208	0	41,328,347	100.0%	0	0	38,932,164	38,932,164	100.0%	0
2038	2039	5,104,182	3,152,182	0	41,987,007	100.0%	0	0	39,388,962	39,388,962	100.0%	0
2039	2040	5,284,124	3,159,069	0	42,710,724	100.0%	0	0	40,438,141	40,438,141	100.0%	0

All numbers are in thousands

8/2/2010



**APPENDIX B**

**Attachment 2**

**Connecticut SERS**

**30 Year Baseline Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009**

Valuation Year Ending 6/30/2007	Fiscal Year Ending 6/30/2007	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Normal Cost	Amortization of Unfunded Actuarial Liability	Total State Contribution (9) + (8)	Employee Contribution	Total Contribution (9) + (10)	Normal Cost	Amortization of Unfunded Actuarial Liability	Total State Contribution (9) + (8)	Employee Contribution	Total Contribution (9) + (10)	Total Contribution (9) + (10)
2008	2010	336,323	562,105	897,428	61,876	959,304	336,323	562,105	897,428	61,876	959,304	959,304
2009	2011	340,927	699,250	1,040,177	63,816	1,103,993	340,927	1,039,000	1,399,927	63,816	1,463,743	1,463,743
2010	2012	296,280	733,711	1,029,991	65,889	1,095,880	296,280	1,097,008	1,393,288	65,889	1,459,177	1,459,177
2011	2013	302,249	785,393	1,087,642	68,036	1,155,678	302,249	1,119,884	1,422,133	68,036	1,490,169	1,490,169
2012	2014	306,833	879,153	1,185,986	70,149	1,256,135	306,833	1,194,508	1,501,341	70,149	1,571,490	1,571,490
2013	2015	309,605	962,511	1,272,116	72,094	1,344,210	309,605	1,248,877	1,558,482	72,094	1,630,576	1,630,576
2014	2016	309,174	1,009,917	1,319,091	74,049	1,393,141	309,174	1,247,059	1,566,233	74,049	1,640,283	1,640,283
2015	2017	308,746	1,067,508	1,376,254	76,284	1,452,538	308,746	1,253,454	1,562,200	76,284	1,638,484	1,638,484
2016	2018	308,831	1,129,569	1,438,400	78,523	1,516,923	308,831	1,261,611	1,570,442	78,523	1,648,965	1,648,965
2017	2019	308,197	1,189,815	1,504,012	80,925	1,584,937	308,197	1,270,575	1,578,772	80,925	1,659,697	1,659,697
2018	2020	307,027	1,266,524	1,573,551	83,054	1,656,605	307,027	1,280,318	1,587,345	83,054	1,670,399	1,670,399
2019	2021	303,507	1,341,619	1,645,126	85,339	1,730,465	303,507	1,290,226	1,593,733	85,339	1,679,072	1,679,072
2020	2022	300,755	1,420,849	1,721,604	87,876	1,809,480	300,755	1,299,454	1,600,209	87,876	1,688,085	1,688,085
2021	2023	288,915	1,505,614	1,804,529	90,553	1,895,081	298,915	1,309,185	1,608,080	90,553	1,698,632	1,698,632
2022	2024	288,099	1,587,090	1,895,189	93,429	1,988,618	288,099	1,320,081	1,618,180	93,429	1,711,609	1,711,609
2023	2025	287,404	1,696,237	1,993,641	96,266	2,089,906	297,404	1,332,397	1,629,801	96,266	1,726,066	1,726,066
2024	2026	286,123	1,804,852	2,100,975	99,082	2,200,058	286,123	1,346,977	1,643,100	99,082	1,742,183	1,742,183
2025	2027	294,526	1,923,363	2,217,889	102,052	2,319,941	294,526	1,362,584	1,657,110	102,052	1,759,162	1,759,162
2026	2028	292,733	2,054,681	2,347,414	104,923	2,452,336	292,733	1,380,130	1,672,863	104,923	1,777,785	1,777,785
2027	2029	291,624	2,203,498	2,495,122	108,274	2,603,396	291,624	1,401,147	1,692,771	108,274	1,801,045	1,801,045
2028	2030	293,768	2,376,964	2,670,732	111,757	2,782,488	293,768	1,426,997	1,720,765	111,757	1,832,521	1,832,521
2029	2031	296,560	2,596,198	2,892,758	115,408	3,008,166	296,560	1,467,242	1,763,802	115,408	1,879,210	1,879,210
2030	2032	300,408	2,907,260	3,207,668	119,225	3,326,893	300,408	1,535,456	1,835,864	119,225	1,955,089	1,955,089
2031	2033	305,400	3,594,479	3,899,879	123,219	3,963,098	305,400	1,708,216	2,013,616	123,219	2,136,835	2,136,835
2032	2034	311,307	0	311,307	127,420	438,728	311,307	0	311,307	127,420	438,728	438,728
2033	2035	318,524	0	318,524	131,835	450,359	318,524	0	318,524	131,835	450,359	450,359
2034	2036	326,738	0	326,738	136,451	463,189	326,738	0	326,738	136,451	463,189	463,189
2035	2037	335,707	0	335,707	141,288	476,995	335,707	0	335,707	141,288	476,995	476,995
2036	2038	345,820	0	345,820	146,329	492,148	345,820	0	345,820	146,329	492,148	492,148
2037	2039	356,545	0	356,545	151,613	508,159	356,545	0	356,545	151,613	508,159	508,159
2038	2040	368,137	0	368,137	157,150	525,287	368,137	0	368,137	157,150	525,287	525,287
2039	2041	380,560	0	380,560	162,941	543,501	380,560	0	380,560	162,941	543,501	543,501
2040	2042	393,889	0	393,889	169,014	562,903	393,889	0	393,889	169,014	562,903	562,903

All numbers are in thousands

8/2/2010



APPENDIX B

Attachment 3

Connecticut SERS  
 30 Year Projection based on June 30, 2008 Valuation  
 Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
 Recognizes the Early Retirement Incentive of 2009  
 Modified Retirement Eligibility for Tier 1 - Non-Hazardous

Valuation Year Ending 6/30/XXX	Fiscal Year Ending 6/30/XXX	Normal Service Credits	Level Payment of Payroll Authorization Method	Funder Ratio = Assets / Accrued Liability	Amortization Period	Unfunded Accrued Liability Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Level Dollar Amortization Method	Funded Ratio in Assets / Liability	Amortization Period
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2008	2010	3,497,445	1,014,096	9,253,126	9,990,247	51.9%	24	9,990,247	50.0%	24
2009	2011	3,637,342	1,070,474	11,794,163	8,787,160	42.7%	23	8,787,160	42.7%	23
2010	2012	3,220,225	1,290,393	11,514,374	10,177,320	46.9%	22	10,177,320	46.9%	22
2011	2013	3,273,940	1,336,436	11,691,645	10,557,425	47.5%	21	10,931,721	49.1%	21
2012	2014	3,326,819	1,386,377	12,605,905	10,424,381	45.3%	20	11,838,870	48.6%	20
2013	2015	3,379,197	1,440,090	13,300,925	10,530,688	44.2%	19	11,685,177	49.0%	19
2014	2016	3,429,521	1,498,162	13,449,406	11,199,315	45.4%	18	12,754,572	51.8%	18
2015	2017	3,468,578	1,563,167	13,651,786	11,818,191	46.4%	17	13,780,011	54.1%	17
2016	2018	3,500,845	1,633,991	13,824,937	12,465,894	47.4%	16	14,919,836	56.4%	16
2017	2019	3,539,494	1,703,235	13,932,924	13,156,728	48.5%	15	15,885,188	58.6%	15
2018	2020	3,569,670	1,778,038	14,028,208	13,893,564	49.8%	14	16,974,783	60.8%	14
2019	2021	3,609,117	1,851,173	14,085,725	14,865,531	51.1%	13	18,092,825	63.0%	13
2020	2022	3,642,390	1,932,351	13,959,860	15,532,663	52.7%	12	19,232,854	65.2%	12
2021	2023	3,674,579	2,015,344	13,797,887	16,440,521	54.4%	11	20,394,116	67.4%	11
2022	2024	3,709,794	2,088,233	13,540,715	17,419,888	56.3%	10	21,579,134	69.7%	10
2023	2025	3,747,168	2,181,912	13,173,408	18,482,413	58.4%	9	22,790,598	72.0%	9
2024	2026	3,789,814	2,264,481	12,680,650	19,643,872	60.8%	8	24,034,233	74.4%	8
2025	2027	3,825,765	2,362,694	12,035,293	20,914,466	63.5%	7	25,308,189	76.8%	7
2026	2028	3,863,460	2,441,294	11,214,821	22,309,917	66.6%	6	26,614,784	79.4%	6
2027	2029	3,897,782	2,533,924	10,200,306	23,845,232	70.0%	5	27,952,462	82.1%	5
2028	2030	3,933,301	2,627,169	8,967,120	25,542,207	74.0%	4	29,323,128	85.0%	4
2029	2031	3,964,594	2,713,964	7,463,751	27,438,694	78.6%	3	30,740,063	88.1%	3
2030	2032	4,042,591	2,796,785	5,664,380	29,563,114	83.9%	2	32,219,286	91.4%	2
2031	2033	4,114,265	2,871,571	3,489,550	32,051,866	90.2%	1	33,790,661	95.1%	1
2032	2034	4,195,157	2,941,879	0	34,972,249	100.0%	0	35,498,802	100.0%	0
2033	2035	4,283,658	3,005,186	0	38,714,892	100.0%	0	37,477,687	100.0%	0
2034	2036	4,386,342	3,060,205	0	39,187,230	100.0%	0	37,847,967	100.0%	0
2035	2037	4,503,148	3,107,567	0	39,657,957	100.0%	0	38,208,204	100.0%	0
2036	2038	4,632,741	3,145,072	0	40,136,969	100.0%	0	38,569,032	100.0%	0
2037	2039	4,776,007	3,173,040	0	40,642,666	100.0%	0	38,943,837	100.0%	0
2038	2040	4,930,854	3,194,481	0	41,179,666	100.0%	0	39,340,704	100.0%	0
2039	2041	5,096,874	3,208,687	0	41,761,829	100.0%	0	39,777,131	100.0%	0
2040	2042	5,274,529	3,215,464	0	42,402,184	100.0%	0	40,247,253	100.0%	0

All numbers are in thousands

6/22/2010



**APPENDIX B**

**Attachment 4**

**Connecticut SERS**  
**30 Year Projection based on June 30, 2008 Valuation**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier II - Non-Hazardous**

Valuation Year Ending 6/30/YY	(1) Normal Cost	(2) Level Percent of Payroll	(3) Total State Contribution - (7) x (3)	(4) Employees Contributions - (7) x (4)	(5) Total Contributions - (3) + (4)	(6) Normal Cost	(7) Amortization of Unfunded Liability	(8) Total State Contributions - (7) x (8)	(9) Employees Contributions	(10) Total Contributions - (8) + (9)	(11) Total Contributions - (10) x (10)
2008	335,323	562,105	897,428	61,475	958,903	335,323	562,105	897,428	61,475	958,903	958,903
2009	340,927	699,250	1,040,177	63,145	1,103,322	340,927	1,059,000	1,399,927	63,145	1,463,072	1,463,072
2010	276,707	697,908	974,615	64,950	1,039,564	276,707	1,045,706	1,322,413	64,950	1,387,362	1,387,362
2011	285,291	730,341	1,015,632	66,802	1,082,433	285,291	1,041,917	1,327,208	66,802	1,394,009	1,394,009
2012	292,454	820,602	1,113,056	68,588	1,181,644	292,454	1,114,251	1,406,705	68,588	1,475,293	1,475,293
2013	298,226	901,525	1,199,751	70,204	1,269,955	298,226	1,168,966	1,467,192	70,204	1,537,396	1,537,396
2014	301,059	946,506	1,247,565	71,848	1,319,413	301,059	1,167,829	1,468,888	71,848	1,540,736	1,540,736
2015	303,664	1,001,372	1,305,036	73,716	1,378,752	303,664	1,174,683	1,478,347	73,716	1,552,063	1,552,063
2016	306,756	1,060,561	1,367,317	75,673	1,442,990	306,756	1,183,281	1,490,017	75,673	1,565,690	1,565,690
2017	309,210	1,123,746	1,432,956	77,732	1,510,688	309,210	1,192,634	1,501,844	77,732	1,579,576	1,579,576
2018	311,307	1,191,282	1,502,589	79,500	1,582,089	311,307	1,202,827	1,514,134	79,500	1,593,634	1,593,634
2019	311,809	1,263,021	1,574,830	81,444	1,656,274	311,809	1,213,176	1,524,985	81,444	1,606,429	1,606,429
2020	313,445	1,338,800	1,652,245	83,663	1,735,908	313,445	1,222,962	1,536,407	83,663	1,620,070	1,620,070
2021	315,812	1,419,998	1,735,810	86,043	1,821,854	315,812	1,233,346	1,549,158	86,043	1,635,202	1,635,202
2022	318,918	1,507,775	1,826,693	88,664	1,915,357	318,918	1,245,049	1,563,967	88,664	1,652,631	1,652,631
2023	321,731	1,603,097	1,924,828	91,339	2,016,167	321,731	1,258,303	1,580,034	91,339	1,671,373	1,671,373
2024	322,586	1,707,513	2,030,099	94,027	2,124,126	322,586	1,273,714	1,596,300	94,027	1,690,327	1,690,327
2025	321,885	1,821,655	2,143,540	96,994	2,240,533	321,885	1,290,349	1,612,284	96,994	1,709,227	1,709,227
2026	319,649	1,947,835	2,267,484	99,930	2,367,414	319,649	1,308,528	1,628,177	99,930	1,728,107	1,728,107
2027	316,631	2,091,380	2,408,011	103,337	2,511,409	316,631	1,330,660	1,647,291	103,337	1,750,689	1,750,689
2028	315,108	2,258,955	2,575,063	107,085	2,682,147	316,108	1,357,830	1,673,938	107,085	1,781,022	1,781,022
2029	315,917	2,471,746	2,787,663	110,958	2,898,622	315,917	1,400,210	1,716,127	110,958	1,827,086	1,827,086
2030	316,369	2,775,843	3,052,212	115,041	3,207,253	316,369	1,472,835	1,789,204	115,041	1,904,245	1,904,245
2031	318,117	3,091,794	3,709,911	119,336	3,829,248	318,117	1,654,835	1,972,952	119,336	2,092,289	2,092,289
2032	320,487	0	320,487	123,844	444,331	320,487	0	320,487	123,844	444,331	444,331
2033	324,128	0	324,128	128,562	452,691	324,128	0	324,128	128,562	452,691	452,691
2034	328,305	0	328,305	133,470	462,775	328,305	0	328,305	133,470	462,775	462,775
2035	335,788	0	335,788	138,576	474,364	335,788	0	335,788	138,576	474,364	474,364
2036	344,044	0	344,044	143,871	487,915	344,044	0	344,044	143,871	487,915	487,915
2037	353,515	0	353,515	149,392	502,908	353,515	0	353,515	149,392	502,908	502,908
2038	364,320	0	364,320	155,153	519,474	364,320	0	364,320	155,153	519,474	519,474
2039	376,374	0	376,374	161,157	537,532	376,374	0	376,374	161,157	537,532	537,532
2040	389,689	0	389,689	167,431	557,120	389,689	0	389,689	167,431	557,120	557,120

All numbers are in thousands

8/2/2010



APPENDIX B

Attachment 5

Connecticut SERS  
 30 Year Projection based on June 30, 2008 Valuation  
 Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
 Recognizes the Early Retirement Incentive of 2009  
 Modified Retirement Eligibility for Tier II - Non-Hazardous

Valuation Year Ending 6/30/YYY	Fiscal Year Ending 6/30/YYY	Annual Cash Flow	Present Value of Cash Flows	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
				Level Percent of Payroll	Unfunded Accrued Liability Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio = Assets / Liability	Amortization Period	Unfunded Accrued Liability Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio = Assets / Liability	Amortization Period
2008	2010	3,497,445	1,014,096	9.253,126	9,990,247	51.9%	24	9,253,126	9,990,247	50.0%	24	
2009	2011	3,637,342	1,070,474	11,794,163	8,787,160	42.7%	23	11,794,163	8,787,160	42.7%	23	
2010	2012	3,186,664	1,303,345	11,937,164	10,477,320	46.0%	22	11,937,164	10,477,320	46.0%	22	
2011	2013	3,227,999	1,356,659	12,051,740	10,328,814	46.2%	21	11,877,445	10,902,909	47.9%	21	
2012	2014	3,270,957	1,412,842	13,179,116	10,404,637	44.1%	20	12,398,795	11,184,868	47.4%	20	
2013	2015	3,312,627	1,473,259	13,878,145	10,521,947	43.1%	19	12,891,844	11,708,248	48.0%	19	
2014	2016	3,351,187	1,538,902	14,028,694	11,194,525	44.4%	18	12,422,779	12,800,439	50.8%	18	
2015	2017	3,382,924	1,610,657	14,235,448	11,806,922	45.3%	17	12,204,698	13,837,672	53.1%	17	
2016	2018	3,412,654	1,686,402	14,413,246	12,441,272	46.3%	16	11,972,926	14,881,592	55.4%	16	
2017	2019	3,448,545	1,761,291	14,545,996	13,111,534	47.4%	15	11,714,590	15,942,941	57.6%	15	
2018	2020	3,481,117	1,840,064	14,625,355	13,822,285	48.6%	14	11,425,616	17,022,024	59.8%	14	
2019	2021	3,516,187	1,919,167	14,631,533	14,580,506	49.9%	13	11,091,489	18,120,551	62.0%	13	
2020	2022	3,542,667	2,007,519	14,572,837	14,372,837	51.4%	12	10,702,074	19,230,482	64.3%	12	
2021	2023	3,569,009	2,096,591	14,348,315	16,238,099	53.1%	11	10,261,784	20,349,151	66.5%	11	
2022	2024	3,600,122	2,184,263	14,095,942	17,152,322	54.9%	10	9,769,942	21,478,323	68.7%	10	
2023	2025	3,636,191	2,270,399	13,704,197	18,139,921	57.0%	9	9,222,518	22,621,609	71.0%	9	
2024	2026	3,680,051	2,354,676	13,182,404	19,216,747	59.3%	8	8,614,949	23,784,202	73.4%	8	
2025	2027	3,723,950	2,438,760	12,499,754	20,399,247	62.0%	7	7,928,668	24,969,343	75.9%	7	
2026	2028	3,773,364	2,521,991	11,641,618	21,702,738	65.1%	6	7,163,239	26,181,117	78.5%	6	
2027	2029	3,828,312	2,600,931	10,581,760	23,154,536	68.6%	5	6,309,611	27,426,685	81.3%	5	
2028	2030	3,887,537	2,676,940	9,293,902	24,782,427	72.8%	4	5,351,966	28,714,363	84.3%	4	
2029	2031	3,953,377	2,749,248	7,727,156	26,630,402	77.5%	3	4,294,884	30,062,876	87.5%	3	
2030	2032	4,048,349	2,803,302	5,853,866	28,751,679	83.1%	2	3,114,324	31,491,220	91.0%	2	
2031	2033	4,147,074	2,855,881	3,596,302	31,225,189	89.7%	1	1,792,791	33,030,700	94.9%	1	
2032	2034	4,254,077	2,903,408	0	34,192,450	100.0%	0	0	34,726,983	100.0%	0	
2033	2035	4,366,685	2,944,959	0	38,002,973	100.0%	0	0	38,714,812	100.0%	0	
2034	2036	4,488,768	2,980,700	0	38,464,633	100.0%	0	0	37,970,199	100.0%	0	
2035	2037	4,620,970	3,010,938	0	38,944,448	100.0%	0	0	37,434,973	100.0%	0	
2036	2038	4,759,677	3,036,811	0	39,450,479	100.0%	0	0	37,816,472	100.0%	0	
2037	2039	4,907,405	3,065,264	0	39,990,978	100.0%	0	0	38,222,166	100.0%	0	
2038	2040	5,063,463	3,071,347	0	40,573,137	100.0%	0	0	38,658,398	100.0%	0	
2039	2041	5,227,474	3,083,259	0	41,205,321	100.0%	0	0	39,132,616	100.0%	0	
2040	2042	5,399,438	3,092,206	0	41,895,816	100.0%	0	0	39,652,112	100.0%	0	

All numbers are in thousands



**APPENDIX B**

**Attachment 6**

**Connecticut SERS  
30 Year Projection based on June 30, 2008 Valuation  
Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter  
Recognizes the Early Retirement Incentive of 2009  
Modified Retirement Eligibility for Tier III - Non-Hazardous**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	(1) Level Percent of Payroll Amortization Method		(2) Level Dollar Amortization Method		(3) Normal Cost	(4) Total State Contribution = (1) + (2)	(5) Total Contribution = (3) + (4)	(6) Normal Cost	(7) Amortization of Unfunded Accrued Liability	(8) Total State Contribution = (7) + (8)	(9) Employee Contribution	(10) Total Contribution = (9) + (8)
		Amortization of Unfunded Accrued Liability	Total State Contribution = (1) + (2)	Amortization of Unfunded Accrued Liability	Total State Contribution = (7) + (8)								
2008	2010	335,323	897,428	61,952	959,380	340,927	1,040,177	1,040,177	340,927	562,105	897,428	61,952	959,380
2009	2011	340,927	1,040,177	63,982	1,104,159	340,927	1,008,250	1,008,250	340,927	1,059,000	1,399,927	63,982	1,463,909
2010	2012	280,859	727,408	66,171	1,074,437	280,859	1,056,914	1,056,914	280,859	1,087,976	1,368,835	66,171	1,435,005
2011	2013	285,331	770,583	68,439	1,125,352	285,331	1,056,914	1,125,352	285,331	1,098,910	1,385,241	68,439	1,453,679
2012	2014	290,601	863,104	70,673	1,224,378	290,601	1,172,345	1,224,378	290,601	1,172,345	1,462,946	70,673	1,533,619
2013	2015	293,029	945,797	72,772	1,311,598	293,029	1,238,826	1,311,598	293,029	1,226,783	1,519,812	72,772	1,592,584
2014	2016	292,388	992,589	74,905	1,359,882	292,388	1,284,977	1,359,882	292,388	1,225,217	1,617,605	74,905	1,692,510
2015	2017	292,017	1,049,671	77,301	1,418,989	292,017	1,341,688	1,418,989	292,017	1,232,057	1,624,074	77,301	1,701,375
2016	2018	292,360	1,111,392	79,777	1,483,629	292,360	1,403,752	1,483,629	292,360	1,240,897	1,633,257	79,777	1,713,034
2017	2019	292,197	1,177,411	82,291	1,551,899	292,197	1,469,608	1,551,899	292,197	1,250,772	1,642,969	82,291	1,725,260
2018	2020	291,250	1,246,136	84,488	1,623,874	291,250	1,539,386	1,623,874	291,250	1,261,729	1,652,979	84,488	1,737,467
2019	2021	287,532	1,323,008	86,790	1,697,330	287,532	1,610,540	1,697,330	287,532	1,272,545	1,660,077	86,790	1,746,867
2020	2022	284,263	1,401,816	89,297	1,775,376	284,263	1,686,079	1,775,376	284,263	1,282,429	1,668,692	89,297	1,757,989
2021	2023	281,672	1,485,935	91,936	1,859,543	281,672	1,767,607	1,859,543	281,672	1,292,538	1,674,210	91,936	1,766,146
2022	2024	280,002	1,576,525	94,742	1,951,269	280,002	1,866,527	1,951,269	280,002	1,303,598	1,683,600	94,742	1,778,342
2023	2025	278,350	1,674,767	97,457	2,050,574	278,350	1,953,117	2,050,574	278,350	1,316,095	1,694,446	97,457	1,791,902
2024	2026	275,848	1,782,304	100,179	2,158,331	275,848	2,058,152	2,158,331	275,848	1,330,729	1,606,577	100,179	1,706,756
2025	2027	273,101	1,899,286	103,027	2,275,414	273,101	2,172,387	2,275,414	273,101	1,345,963	1,619,064	103,027	1,722,091
2026	2028	270,331	2,029,481	105,743	2,399,812	270,331	2,299,812	2,399,812	270,331	1,363,733	1,634,064	105,743	1,739,807
2027	2029	268,092	2,177,273	108,947	2,445,365	268,092	2,445,365	2,445,365	268,092	1,385,250	1,653,342	108,947	1,762,289
2028	2030	269,065	2,349,164	112,284	2,618,229	269,065	2,618,229	2,618,229	269,065	1,411,194	1,680,259	112,284	1,792,543
2029	2031	270,784	2,566,820	115,830	2,837,604	270,784	2,837,604	2,837,604	270,784	1,451,858	1,722,642	115,830	1,838,472
2030	2032	273,808	2,876,433	119,537	3,150,241	273,808	3,150,241	3,150,241	273,808	1,521,292	1,795,100	119,537	1,914,637
2031	2033	278,195	3,504,990	123,365	3,783,185	278,195	3,783,185	3,783,185	278,195	1,700,339	1,978,534	123,365	2,101,899
2032	2034	283,643	0	127,371	283,643	283,643	0	283,643	283,643	0	283,643	127,371	411,014
2033	2035	290,516	0	131,578	290,516	290,516	0	290,516	290,516	0	290,516	131,578	422,095
2034	2036	298,188	0	135,930	298,188	298,188	0	298,188	298,188	0	298,188	135,930	434,118
2035	2037	306,095	0	140,480	306,095	306,095	0	306,095	306,095	0	306,095	140,480	446,575
2036	2038	314,623	0	145,217	314,623	314,623	0	314,623	314,623	0	314,623	145,217	459,840
2037	2039	323,505	0	150,167	323,505	323,505	0	323,505	323,505	0	323,505	150,167	473,672
2038	2040	333,203	0	155,332	333,203	333,203	0	333,203	333,203	0	333,203	155,332	488,535
2039	2041	343,331	0	160,774	343,331	343,331	0	343,331	343,331	0	343,331	160,774	504,104
2040	2042	354,072	0	166,487	354,072	354,072	0	354,072	354,072	0	354,072	166,487	520,560

All numbers are in thousands



**APPENDIX B**

**Attachment Z**

**Connecticut SERS**  
**30 Year Projection based on June 30, 2008 Valuation**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier II Hazardous**

Valuation Year Ending 6/30/YYYY	Fiscal Year	Plan Assets at Beginning of Valuation Year	Unfunded Accrued Liability at Beginning of Valuation Year	Funded Ratio = Assets / Liability	Level Payment Payroll Amortization Method	Plan Assets at Beginning of Valuation Year	Unfunded Accrued Liability at Beginning of Valuation Year	Funded Ratio = Assets / Liability	Level Policy Amortization Method	Amortization Period
2008	2010	3,497,445	1,074,096	101.4%	(5)	9,990,247	9,253,126	51.9%	(6)	24
2009	2011	3,637,342	1,070,474	107.0%	(5)	8,787,160	11,794,163	42.7%	(6)	23
2010	2012	3,194,936	1,296,204	129.6%	(5)	10,177,320	11,726,512	46.5%	(6)	22
2011	2013	3,238,639	1,343,147	134.3%	(5)	10,548,756	11,621,630	46.8%	(6)	21
2012	2014	3,294,240	1,393,203	139.3%	(5)	10,431,548	12,916,955	44.7%	(6)	20
2013	2015	3,328,914	1,447,129	144.7%	(5)	10,582,783	13,612,133	43.7%	(6)	19
2014	2016	3,372,259	1,504,796	150.4%	(5)	11,281,389	13,759,407	45.0%	(6)	18
2015	2017	3,409,143	1,566,754	156.6%	(5)	11,917,633	13,960,601	46.1%	(6)	17
2016	2018	3,439,643	1,635,948	163.5%	(5)	12,611,240	14,132,764	47.2%	(6)	16
2017	2019	3,470,271	1,707,642	170.7%	(5)	13,352,773	14,258,044	48.4%	(6)	15
2018	2020	3,497,287	1,783,154	178.3%	(5)	14,146,355	14,331,491	49.7%	(6)	14
2019	2021	3,523,476	1,864,351	186.4%	(5)	14,993,752	14,336,129	51.1%	(6)	13
2020	2022	3,535,784	1,960,173	196.0%	(5)	15,886,100	14,255,798	52.7%	(6)	12
2021	2023	3,545,854	2,060,631	206.0%	(5)	16,822,317	14,087,378	54.4%	(6)	11
2022	2024	3,555,884	2,157,043	215.7%	(5)	17,814,166	13,821,627	56.3%	(6)	10
2023	2025	3,567,111	2,255,612	225.5%	(5)	18,870,772	13,443,225	58.4%	(6)	9
2024	2026	3,620,615	2,349,890	234.9%	(5)	20,009,350	12,998,149	60.7%	(6)	8
2025	2027	3,656,512	2,443,615	244.3%	(5)	21,246,667	12,276,877	63.4%	(6)	7
2026	2028	3,696,721	2,537,095	253.7%	(5)	22,597,132	11,439,992	66.4%	(6)	6
2027	2029	3,743,096	2,626,460	262.6%	(5)	24,087,783	10,403,728	69.8%	(6)	5
2028	2030	3,795,919	2,712,069	271.2%	(5)	25,745,888	9,134,794	73.8%	(6)	4
2029	2031	3,863,676	2,789,235	278.9%	(5)	27,613,582	7,609,971	78.4%	(6)	3
2030	2032	3,940,654	2,859,361	2,859.3%	(5)	29,744,410	5,771,500	83.8%	(6)	2
2031	2033	4,029,075	2,923,766	2,923.7%	(5)	32,214,487	3,552,333	90.1%	(6)	1
2032	2034	4,128,909	2,982,966	2,982.9%	(5)	35,153,999	0	100.0%	(6)	0
2033	2035	4,232,922	3,034,883	3,034.8%	(5)	38,939,909	0	100.0%	(6)	0
2034	2036	4,350,935	3,078,546	3,078.5%	(5)	39,403,251	0	100.0%	(6)	0
2035	2037	4,479,903	3,115,700	3,115.7%	(5)	39,881,616	0	100.0%	(6)	0
2036	2038	4,618,906	3,145,389	3,145.3%	(5)	40,379,031	0	100.0%	(6)	0
2037	2039	4,768,623	3,167,863	3,167.8%	(5)	40,907,958	0	100.0%	(6)	0
2038	2040	4,927,586	3,186,187	3,186.1%	(5)	41,476,994	0	100.0%	(6)	0
2039	2041	5,096,358	3,198,752	3,198.7%	(5)	42,096,354	0	100.0%	(6)	0
2040	2042	5,275,254	3,205,537	3,205.5%	(5)	42,777,495	0	100.0%	(6)	0

All numbers are in thousands



**APPENDIX B**

**Attachment 8**

**Connecticut SERS**  
**30 Year Projection based on June 30, 2008 Valuation**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier I - Hazardous**

Valuation Year Ending 6/30/YYY	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Fiscal Year Ending 6/30/YYY	Normal Cost	Amortization of Unfunded Actuarial Liability	Total State Contribution - (7) - (8)	Employee Contribution	Total Contribution - (9) - (10)	Total Contribution - (5) - (6)	Normal Cost	Amortization of Unfunded Actuarial Liability	Total State Contribution - (7) - (8)	Employee Contribution	Total Contribution - (9) - (10)
2008	335,323	562,105	897,428	62,381	959,809	1,104,966	340,927	1,059,000	897,428	62,381	959,809
2009	340,927	699,250	1,040,177	64,788	1,104,966	1,254,744	340,927	1,059,000	1,399,927	64,788	1,464,715
2010	281,283	712,710	993,993	67,325	1,061,318	1,218,643	281,283	1,066,916	1,348,198	67,325	1,415,523
2011	289,710	752,218	1,041,928	69,953	1,111,881	1,281,832	289,710	1,072,900	1,362,610	69,953	1,432,563
2012	297,240	843,666	1,140,906	72,660	1,213,567	1,355,807	297,240	1,145,832	1,443,072	72,660	1,515,733
2013	303,794	925,395	1,229,189	75,347	1,304,536	1,439,885	303,794	1,200,187	1,503,981	75,347	1,579,328
2014	308,551	971,167	1,278,718	77,884	1,357,602	1,505,486	308,551	1,198,559	1,507,110	77,884	1,584,994
2015	312,967	1,026,927	1,339,894	80,470	1,420,363	1,580,861	312,967	1,206,008	1,517,970	80,470	1,598,439
2016	316,766	1,087,167	1,403,333	83,169	1,487,102	1,664,242	316,766	1,213,319	1,530,085	83,169	1,613,254
2017	320,006	1,151,446	1,471,452	85,645	1,557,096	1,757,637	320,006	1,222,432	1,542,438	85,645	1,628,082
2018	321,251	1,220,158	1,541,409	87,521	1,628,930	1,856,163	321,251	1,232,393	1,553,644	87,521	1,641,165
2019	318,186	1,293,267	1,611,453	89,342	1,700,795	1,961,537	318,186	1,242,675	1,560,861	89,342	1,650,203
2020	314,415	1,370,491	1,684,906	91,553	1,776,459	2,077,012	314,415	1,252,398	1,566,813	91,553	1,658,366
2021	311,653	1,453,198	1,764,851	93,730	1,858,581	2,192,712	311,653	1,262,691	1,574,344	93,730	1,668,074
2022	309,079	1,542,558	1,851,637	96,247	1,947,883	2,318,526	309,079	1,274,278	1,583,357	96,247	1,679,603
2023	307,015	1,639,529	1,946,544	98,724	2,045,267	2,454,750	307,015	1,287,365	1,594,380	98,724	1,693,103
2024	304,270	1,745,896	2,050,166	101,221	2,151,387	2,607,974	304,270	1,302,822	1,607,092	101,221	1,708,313
2025	301,449	1,862,034	2,163,483	103,864	2,267,348	2,778,192	301,449	1,319,383	1,620,832	103,864	1,724,697
2026	298,384	1,990,910	2,289,294	106,449	2,395,743	2,964,436	298,384	1,338,071	1,636,455	106,449	1,742,904
2027	296,193	2,137,184	2,433,377	109,478	2,542,855	3,168,709	296,193	1,360,461	1,656,654	109,478	1,766,132
2028	297,125	2,308,002	2,605,427	112,656	2,717,783	3,400,438	297,125	1,388,042	1,685,167	112,656	1,797,823
2029	298,758	2,524,523	2,823,281	116,020	2,939,301	3,693,739	298,758	1,430,714	1,729,472	116,020	1,845,492
2030	301,519	2,832,708	3,134,227	119,604	3,253,831	4,057,570	301,519	1,502,741	1,804,260	119,604	1,923,864
2031	305,649	3,457,143	3,762,792	123,375	3,886,168	4,513,738	305,649	1,684,637	1,990,286	123,375	2,113,662
2032	310,701	0	310,701	127,404	438,105	4,951,843	310,701	0	310,701	127,404	438,105
2033	317,280	0	317,280	131,676	448,956	5,300,799	317,280	0	317,280	131,676	448,956
2034	324,923	0	324,923	136,180	461,103	5,661,902	324,923	0	324,923	136,180	461,103
2035	333,496	0	333,496	140,927	474,423	6,036,325	333,496	0	333,496	140,927	474,423
2036	343,460	0	343,460	145,897	489,357	6,435,182	343,460	0	343,460	145,897	489,357
2037	354,037	0	354,037	151,130	505,168	6,858,019	354,037	0	354,037	151,130	505,168
2038	365,600	0	365,600	156,622	522,222	7,305,241	365,600	0	365,600	156,622	522,222
2039	377,995	0	377,995	162,369	540,365	7,777,856	377,995	0	377,995	162,369	540,365
2040	391,504	0	391,504	168,398	559,903	8,280,759	391,504	0	391,504	168,398	559,903

All numbers are in thousands

8/2/2010





**APPENDIX B**

**Attachment 9**

**Connecticut SERS**  
**30-Year Projection based on June 30, 2008 Valuation**  
**Assuming Market Value of \$8.481 Billion as of June 30, 2010 and 8.25% Investment Return for Each Year Thereafter.**  
**Recognizes the Early Retirement Incentive of 2009**  
**Modified Retirement Eligibility for Tier IIA - Hazardous**

Valuation Year Ending 6/30/YY	Fiscal Year Ending 6/30/YY	Annual Expense	Annual Expense as % of Assets	Level Percent of Payroll Amortization Method	Unfunded Accrued Liability Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Unfunded Accrued Liability	Unfunded Accrued Liability Beginning of Valuation Year	Plan Assets at Beginning of Valuation Year	Funded Ratio - Assets/ Liabilities	Amortization Period	Amortization Period
2008	2010	3,497,445	1,014,096	9,990,247	9,253,126	9,990,247	51.9%	24	9,990,247	50.0%	24	24
2009	2011	3,637,442	1,070,474	8,787,160	11,794,163	8,787,160	42.7%	23	8,787,160	42.7%	23	23
2010	2012	3,193,279	1,304,684	10,177,320	11,943,823	10,177,320	46.0%	22	10,177,320	46.0%	22	22
2011	2013	3,216,468	1,359,423	10,524,563	12,271,970	10,524,563	46.2%	21	10,898,849	47.8%	21	21
2012	2014	3,251,794	1,417,385	10,395,209	13,194,102	10,395,209	44.1%	20	11,176,741	47.4%	20	20
2013	2015	3,285,833	1,479,788	10,504,263	13,884,930	10,504,263	43.1%	19	11,691,420	47.9%	19	19
2014	2016	3,316,075	1,547,652	11,163,185	14,025,831	11,163,185	44.3%	18	12,770,466	50.7%	18	18
2015	2017	3,336,887	1,622,053	11,754,972	14,220,770	11,754,972	45.3%	17	13,787,813	53.1%	17	17
2016	2018	3,355,059	1,700,681	12,300,747	14,384,094	12,300,747	46.2%	16	14,802,550	55.4%	16	16
2017	2019	3,378,101	1,778,570	12,992,947	14,500,211	12,992,947	47.3%	15	15,825,337	57.6%	15	15
2018	2020	3,396,527	1,860,564	13,654,398	14,560,376	13,654,398	48.4%	14	16,854,163	59.7%	14	14
2019	2021	3,426,399	1,938,951	14,355,011	14,557,017	14,355,011	49.7%	13	17,893,623	61.9%	13	13
2020	2022	3,457,506	2,019,297	15,101,155	14,491,466	15,101,155	51.1%	12	18,943,957	64.0%	12	12
2021	2023	3,493,034	2,098,781	15,902,935	14,320,797	15,902,935	52.6%	11	20,008,317	66.2%	11	11
2022	2024	3,533,976	2,178,265	16,774,162	14,060,904	16,774,162	54.4%	10	21,092,504	68.4%	10	10
2023	2025	3,581,445	2,250,908	17,731,221	13,688,635	17,731,221	56.4%	9	22,204,088	70.7%	9	9
2024	2026	3,634,232	2,326,184	18,789,167	13,181,250	18,789,167	58.8%	8	23,347,288	73.0%	8	8
2025	2027	3,684,644	2,405,337	19,960,122	12,506,145	19,960,122	61.5%	7	24,522,165	75.5%	7	7
2026	2028	3,740,192	2,482,856	21,263,072	11,653,844	21,263,072	64.6%	6	25,733,325	78.2%	6	6
2027	2029	3,805,026	2,553,926	22,725,434	10,602,585	22,725,434	68.2%	5	26,990,789	81.0%	5	5
2028	2030	3,877,347	2,620,570	24,378,926	9,517,377	24,378,926	72.4%	4	28,306,089	84.0%	4	4
2029	2031	3,968,989	2,690,760	26,267,523	7,764,628	26,267,523	77.2%	3	29,696,563	87.3%	3	3
2030	2032	4,043,831	2,738,617	28,441,635	5,981,627	28,441,635	82.9%	2	31,180,268	90.8%	2	2
2031	2033	4,134,539	2,794,337	30,974,150	3,600,677	30,974,150	89.6%	1	32,781,120	94.8%	1	1
2032	2034	4,232,496	2,846,751	33,990,829	0	33,990,829	100.0%	0	34,538,393	100.0%	0	0
2033	2035	4,333,549	2,895,773	37,953,914	0	37,953,914	100.0%	0	36,567,463	100.0%	0	0
2034	2036	4,452,714	2,933,541	38,354,996	0	38,354,996	100.0%	0	36,962,449	100.0%	0	0
2035	2037	4,579,707	2,967,529	39,413,085	0	39,413,085	100.0%	0	37,364,419	100.0%	0	0
2036	2038	4,715,925	2,995,347	39,989,057	0	39,989,057	100.0%	0	37,781,286	100.0%	0	0
2037	2039	4,862,341	3,016,931	40,604,165	0	40,604,165	100.0%	0	38,221,634	100.0%	0	0
2038	2040	5,017,824	3,035,385	41,270,957	0	41,270,957	100.0%	0	38,692,012	100.0%	0	0
2039	2041	5,182,850	3,048,737	41,998,960	0	41,998,960	100.0%	0	39,201,051	100.0%	0	0
2040	2042	5,357,606	3,067,048	41,998,960	0	41,998,960	100.0%	0	39,758,238	100.0%	0	0

All numbers are in thousands

8/2/2010

