# JUNE 30, 2005
# POST RETIREMENT BENEFITS ANALYSIS
# OF
# THE VERMONT STATE TEACHERS' RETIREMENT SYSTEM

**February, 2006**



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## SECTION I - OVERVIEW

The Board of Trustees of the Vermont State Teachers' Retirement System has engaged Buck to prepare an actuarial valuation of their post-retirement benefits program as of June 30, 2005. The State Treasurer's Office provided the employee data and premium information used in the completion of this study.

The purposes of the valuation are to measure the current liabilities of the System for its post-retirement benefits program, to determine the level of contributions necessary to assure sound funding of such benefits and to provide reporting and disclosure information for financial statements, governmental agencies and other interested parties. This valuation report contains information that will be required in future fiscal years for compliance with the Government Accounting Standards Board's Statements 43 and 45, which relate to accounting and financial for post-employment benefits other than pensions.

We performed the calculations presented in this study on two bases. Under one, it is assumed the System's post-retirement medical benefits other than pensions are funded on a basis similar to that used for pensions. Under the second, it is assumed that there is no pre-funding of such benefits. Section II provides a summary of the principal valuation results. Section V provides a projection of expense and funding amounts.

Respectfully Submitted,
Buck Consultants, LLC

Daniel W. Sherman

February 28, 2006

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Daniel W. Sherman, ASA, MAAA, EA — Date
Director and Consulting Actuary

David Driscoll

February 28, 2006

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Principal, Consulting Actuary

## SECTION I - OVERVIEW

Before adjustment for a change in our interpretation of system provisions (see below) the system experienced a net increase in the accrued liability for post-retirement benefits over the past year primarily due to an increase of 12% in premiums for most covered participants (a 9% increase had been assumed in the prior valuation), and a net increase in the participant population from 13,267 to 13,898. Although some may elect coverage in the future, current terminated vested participants were excluded from the valuation.

The economic actuarial assumptions used in this valuation are the same as those used last year except for the discount rate used in the no pre-funding scenario and the healthcare cost inflation rates. The discount rate used for calculations that presume no pre-funding of benefits occurs has been raised from 2% to 3.75% to better reflect expected rates of return on short-term financial assets. Assumed rates of health care cost increases were raised by 1% for each of the next four years, which effectively pushed out the point at which the ultimate rate of 5% is reached by one year. All demographic assumptions are the same as those used in the pension actuarial valuation. We modified the actuarial method of determining the liability attributable to spouses of current and future retirees. The previous method used the current premium for retirees electing family coverage and applied a probability to the continuation of coverage for the spouse at the lower rate. This year, we determined the weighted average premiums for all participants and did not include a contingency for a spouse's benefit. The result of this change was a reduction of approximately 10% in the liabilities developed.

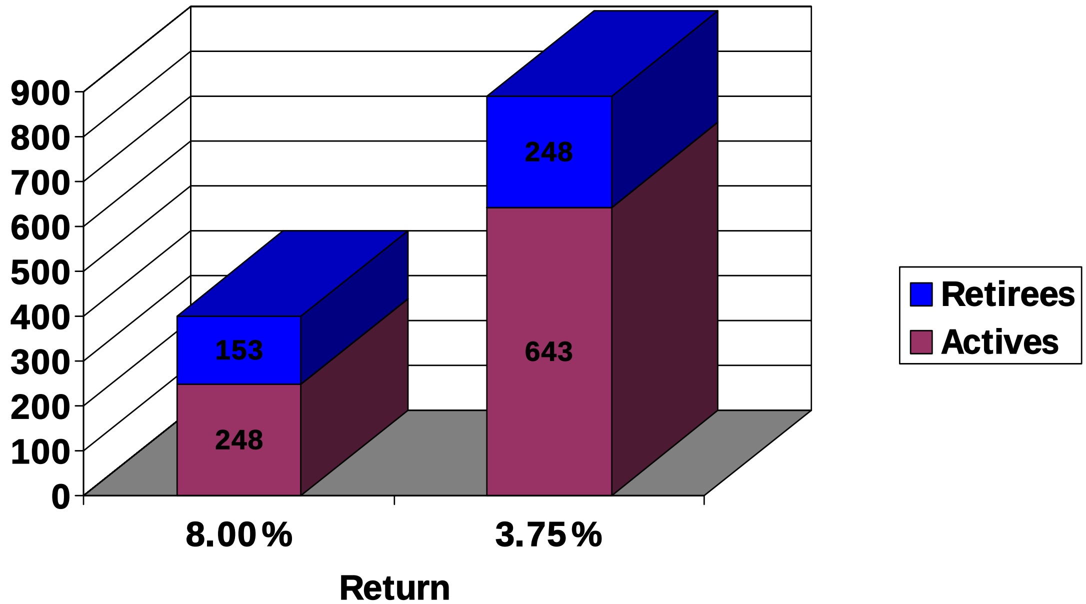
Our valuation does not include potential Medicare Part D subsidies. If it did, liabilities and costs would be lowered.

## SECTION II – REQUIRED INFORMATION

| | | Pre-Funding Basis | Pay-as-you-go Basis |
|---|---|---|---|
| a) | Assumed investment return | 8% | 3.75% |
| b) | Actuarial value of assets | $ 0 | $ 0 |
| c) | Actuarial accrued liability | | |
| | Active Participants | $ 248,286,315 | $ 642,548,984 |
| | Retired Participants | 153,394,151 | 247,863,530 |
| | Total | $ 401,680,466 | $ 890,412,514 |
| d) | Unfunded actuarial liability (c. – b.) | $ 401,680,466 | $ 890,412,514 |
| e) | Funded ratio (c. / b.) | 0% | 0% |
| f) | Annual covered payroll | $ 486,857,658 | $ 486,857,658 |
| g) | Unfunded actuarial liability as percentage of covered payroll | 82.5% | 182.9% |
| h) | Normal Cost for the 2006 fiscal year | $ 15,416,668 | $ 48,643,463 |
| i) | Amortization of unfunded actuarial liability For the 2006 fiscal year (30-year) | $ 21,122,664 | $ 25,746,014 |
| j) | Annual Required Contribution (ARC) For the 2006 fiscal year (h. + i.) | $ 36,539,332 | $ 74,389,477 |
| k) | Expected benefit payments | $ 11,790,525 | $ 11,790,525 |
| l) | Increase in annual cost to fund the Plan (j. – k.) | $ 24,748,807 | $ n/a |

## SECTION II – REQUIRED INFORMATION

**Actuarial Accrued Liability in $millions**

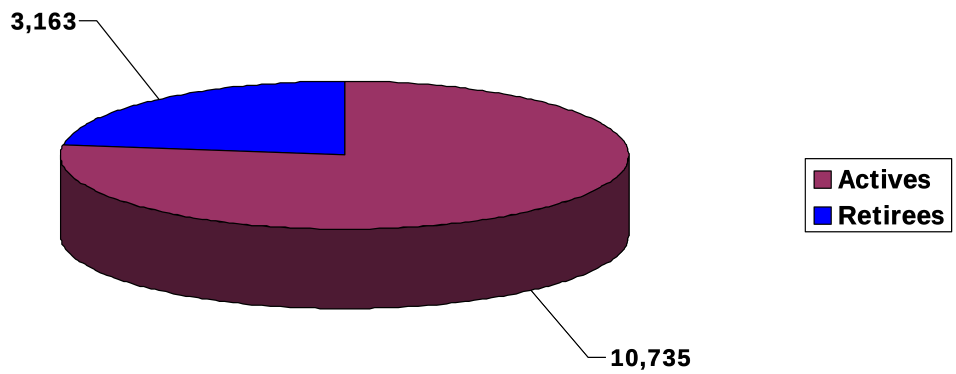


## SECTION III - MEMBERSHIP DATA AND MEDICAL PREMIUM

### Number of participants included in valuation

| | 2005 | 2004 |
|---|---|---|
| Actives | 10,735 | 10,315 |
| Retired | 3,163 | 2,952 |
| Total | 13,898 | 13,267 |

**Participants**




### Monthly State Costs for the 2006 Fiscal Year

| Plan | State Share | Increase from 2005 |
|---|---|---|
| JY | | |
| Retiree under 65 | $347.11 | 12.0% |
| Retiree over 65 | $279.47 | 12.0% |
| Retiree over 65 without Medicare | $347.11 | 12.0% |
| $250 Comprehensive Plan | | |
| Retiree under 65 | $347.11 | 12.0% |
| Retiree over 65 | $279.47 | 12.0% |
| Vermont Health Partnership | | |
| Retiree under 65 | $347.11 | 12.0% |
| JY, Comp, MediComp Carveout | $347.11 | 12.0% |
| MediComp C Plan | | |
| Medicare Eligible, over 65 | $138.89 | 6.9% |
| Dependents | $138.89 | 6.9% |

## SECTION IV – REQUIRED SUPPLEMENTARY INFORMATION

### SCHEDULE OF FUNDING PROGRESS

(dollar amounts in thousands)

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b)-(a) | Funded Ratio (a)/(b) | Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b)-(a)]/(c) |
|---|---|---|---|---|---|---|
| June 30, 2005 | $0 | $401,680 | $401,680 | 0% | $486,857 | 82.5% |

Assuming a discount rate of 8%.

### SCHEDULE OF FUNDING PROGRESS

(dollar amounts in thousands)

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b)-(a) | Funded Ratio (a)/(b) | Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b)-(a)]/(c) |
|---|---|---|---|---|---|---|
| June 30, 2005 | $0 | $890,412 | $890,412 | 0% | $486,857 | 182.9% |

Assuming a discount rate of 3.75%.

## SECTION V – FORECASTS

The Government Accounting Standards Board's Statements 43 and 45 on Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions outline various requirements of a funding schedule that will amortize the unfunded actuarial liability and cover normal costs. Amortization of the unfunded actuarial liability is to be based on a schedule that extends no longer than 30 years. The contribution towards the amortization of the unfunded actuarial liability may be made in level payments or in payments increasing at the same rate as assumed salary increases.

In the amortization schedule shown on the following page, the amortization of the unfunded accrued liability is made in installments that increase annually by 5%. The normal cost is expected to increase at the same rate as the assumed ultimate health care trend rate and a modest amount of growth in the active population for the next few years. The contributions were computed assuming that the contribution is paid on June 30, at the end of the fiscal year. Below is a comparison of the forecasted Annual Required Contributions, computed under discount rates of 8% and 3.75%.

## SECTION V – FORECASTS

FORECAST OF FUNDING AND GASB EXPENSE UNDER A DISCOUNT RATE OF 8%

| Fiscal Year Ending in | Normal Cost (Service Cost) | Amortization of the Unfunded Actuarial Liability | Total State Contribution (ARC) |
|---|---|---|---|
| 2006 | 15,416,668 | 21,122,664 | 36,539,332 |
| 2007 | 16,804,168 | 22,178,797 | 38,982,965 |
| 2008 | 18,148,501 | 23,287,737 | 41,436,238 |
| 2009 | 19,418,896 | 24,452,123 | 43,871,019 |
| 2010 | 20,584,030 | 25,674,730 | 46,258,760 |
| 2011 | 21,613,232 | 26,958,466 | 48,571,698 |
| 2012 | 22,693,894 | 28,306,389 | 51,000,283 |
| 2013 | 23,828,589 | 29,721,709 | 53,550,298 |
| 2014 | 25,020,018 | 31,207,794 | 56,227,812 |
| 2015 | 26,271,019 | 32,768,184 | 59,039,203 |
| 2016 | 27,584,570 | 34,406,593 | 61,991,163 |
| 2017 | 28,963,799 | 36,126,923 | 65,090,722 |
| 2018 | 30,411,989 | 37,933,269 | 68,345,258 |
| 2019 | 31,932,588 | 39,829,932 | 71,762,520 |
| 2020 | 33,529,217 | 41,821,429 | 75,350,646 |
| 2021 | 35,205,678 | 43,912,500 | 79,118,178 |
| 2022 | 36,965,962 | 46,108,126 | 83,074,088 |
| 2023 | 38,814,260 | 48,413,532 | 87,227,792 |
| 2024 | 40,754,973 | 50,834,208 | 91,589,181 |
| 2025 | 42,792,722 | 53,375,919 | 96,168,641 |
| 2026 | 44,932,358 | 56,044,715 | 100,977,073 |
| 2027 | 47,178,976 | 58,846,950 | 106,025,926 |
| 2028 | 49,537,925 | 61,789,298 | 111,327,223 |
| 2029 | 52,014,821 | 64,878,763 | 116,893,584 |
| 2030 | 54,615,562 | 68,122,701 | 122,738,263 |
| 2031 | 57,346,340 | 71,528,836 | 128,875,176 |
| 2032 | 60,213,657 | 75,105,278 | 135,318,935 |
| 2033 | 63,224,340 | 78,860,542 | 142,084,882 |
| 2034 | 66,385,557 | 82,803,569 | 149,189,126 |
| 2035 | 69,704,835 | 86,943,747 | 156,648,582 |
| 2036 | 73,190,077 | 0 | 73,190,077 |

## SECTION V – FORECASTS

FORECAST OF FUNDING AND GASB EXPENSE UNDER A DISCOUNT RATE OF 3.75%

| Fiscal Year Ending in | Normal Cost (Service Cost) | Amortization of the Unfunded Actuarial Liability | Total State Contribution (ARC) |
|---|---|---|---|
| 2006 | 48,643,463 | 25,746,014 | 74,389,477 |
| 2007 | 53,021,375 | 27,033,315 | 80,054,690 |
| 2008 | 57,263,085 | 28,384,981 | 85,648,066 |
| 2009 | 61,271,501 | 29,804,230 | 91,075,731 |
| 2010 | 64,947,791 | 31,294,441 | 96,242,232 |
| 2011 | 68,195,181 | 32,859,163 | 101,054,344 |
| 2012 | 71,604,940 | 34,502,122 | 106,107,062 |
| 2013 | 75,185,187 | 36,227,228 | 111,412,415 |
| 2014 | 78,944,446 | 38,038,589 | 116,983,035 |
| 2015 | 82,891,668 | 39,940,519 | 122,832,187 |
| 2016 | 87,036,251 | 41,937,544 | 128,973,795 |
| 2017 | 91,388,064 | 44,034,422 | 135,422,486 |
| 2018 | 95,957,467 | 46,236,143 | 142,193,610 |
| 2019 | 100,755,340 | 48,547,950 | 149,303,290 |
| 2020 | 105,793,107 | 50,975,347 | 156,768,454 |
| 2021 | 111,082,762 | 53,524,115 | 164,606,877 |
| 2022 | 116,636,900 | 56,200,320 | 172,837,220 |
| 2023 | 122,468,745 | 59,010,336 | 181,479,081 |
| 2024 | 128,592,182 | 61,960,853 | 190,553,035 |
| 2025 | 135,021,791 | 65,058,896 | 200,080,687 |
| 2026 | 141,772,881 | 68,311,841 | 210,084,722 |
| 2027 | 148,861,525 | 71,727,433 | 220,588,958 |
| 2028 | 156,304,601 | 75,313,804 | 231,618,405 |
| 2029 | 164,119,831 | 79,079,495 | 243,199,326 |
| 2030 | 172,325,823 | 83,033,469 | 255,359,292 |
| 2031 | 180,942,114 | 87,185,143 | 268,127,257 |
| 2032 | 189,989,220 | 91,544,400 | 281,533,620 |
| 2033 | 199,488,681 | 96,121,620 | 295,610,301 |
| 2034 | 209,463,115 | 100,927,701 | 310,390,816 |
| 2035 | 219,936,271 | 105,974,086 | 325,910,357 |
| 2036 | 230,933,085 | 0 | 230,933,085 |

## SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

## VERMONT STATE TEACHERS

***Interest*** 8.0% per year, net of investment expenses for a funded plan. 3.75% per year, net of investment expenses for a non-funded plan.

***Actuarial Cost Method***: Projected Unit Credit

***Medical Care and State Share Inflation:***

| Year | Inflation Rate |
|---|---|
| 2006 | 9.0% |
| 2007 | 8.0 |
| 2008 | 7.0 |
| 2009 | 6.0 |
| 2010 & After | 5.0 |

***Amortization period***: Closed basis. Thirty year amortization starting in FYE06 with payments increasing 5% annually.

***Retirement Eligibility:*** Age 55 for Group A. Age 55 with 5 years of service for Group C. Participants terminating prior to age 55 with at least 5 years of service, may elect medical coverage beginning at age 55.

***Marital status:*** Active participants are assumed to keep their current marital status upon retirement.

## SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

***Separations before Normal Retirement:*** Representative values of the assumed annual rates of withdrawal, vested retirement, early retirement, disability and death are as follows:

| Age | Withdrawal and Vested Retirement | | Disability | | Death | |
|---|---|---|---|---|---|---|
| | Males | Females | Males | Females | Males | Females |
| 25 | 5.40% | 6.48% | .010% | .015% | .04% | .03% |
| 30 | 5.40 | 5.40 | .020 | .015 | .04 | .03 |
| 35 | 4.86 | 4.32 | .020 | .015 | .04 | .03 |
| 40 | 4.05 | 3.60 | .030 | .020 | .08 | .03 |
| 45 | 3.60 | 3.15 | .053 | .045 | .08 | .05 |
| 50 | 3.60 | 2.70 | .180 | .180 | .12 | .08 |
| 55 | 3.60 | 2.70 | .440 | .390 | .12 | .12 |
| 59 | 3.60 | 2.70 | 1.170 | .710 | .15 | .18 |
| 60 | 3.60 | 2.70 | 1.470 | .840 | .15 | .19 |
| 61 | 3.60 | 2.70 | 1.830 | 1.010 | .50 | .22 |

| Age | Reduced Early Retirement | | Full Early Retirement | |
|---|---|---|---|---|
| | Males | Females | Males | Females |
| 50 | - | - | 44.00% | 40.00% |
| 55 | 5.00% | 8.75% | 30.80 | 20.00 |
| 56 | 4.00 | 6.25 | 17.60 | 10.00 |
| 57 | 3.00 | 6.25 | 16.50 | 10.00 |
| 58 | 6.00 | 6.25 | 16.50 | 10.00 |
| 59 | 6.00 | 6.25 | 20.90 | 10.00 |
| 60 | 6.00 | 12.50 | 41.25 | 30.00 |
| 61 | 20.00 | 12.50 | 22.00 | 17.00 |

***Service Retirements:*** Occur between ages 62 (60 for Group A) and 70. The assumed rates of service retirement are as follows:

| | Annual Rate of Retirement | |
|---|---|---|
| Age | Male | Female |
| 62 | 35.2% | 25.0% |
| 63 | 26.4 | 20.0 |
| 64 | 27.5 | 20.0 |
| 65 | 41.8 | 30.0 |
| 66 | 33.0 | 30.0 |
| 67 | 39.6 | 30.0 |
| 68 | 26.4 | 20.0 |
| 69 | 33.0 | 30.0 |
| 70 | 100.0 | 100.0 |

***Deaths after Retirement:*** The 1995 Buck Mortality Tables, set back one year, are used for the period after service retirement, while the RP-2000 Tables for Disabled Retirees are used for the period following disability retirement.

***Spouse's Age:*** Husbands are assumed to be 3 years older than their wives.

***Percent Married:*** 85% of the male members and 35% of the female members are assumed to be married.

***Health Plans:*** Retirees without Medicare may select from three plans: JY Plan, $250 Comprehensive, and Vermont Health Partnership. Retirees with Medicare may select from three plans: JY Carve-Out, $250 Comprehensive Carve-Out, and Medi-Comp C.

***Pre-Age 65 Retirees:*** Current retirees who are under age 65 are assumed to remain in their current medical plan until age 65, at which time they enter the average plan provided to current post-65 retirees.

Current active employees who are assumed to retire prior to age 65 are valued with a weighted-average premium. This weighted-average premium is based on the medical plan coverage of current retirees under age 65. The weighted average premium includes adjustment based on age to account for the implicit subsidy of older employees true benefit cost.

## SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

At age 65, all participants are assumed to participate in post-65 plans in the same proportions as current retirees over age 65.

Retirees and beneficiaries remain in their current medical plan until death. Therefore, if the retiree predeceases the beneficiary, the beneficiary will continue to have coverage until his or her death. However, the State does not cover any of the costs of coverage.

***Post-Age 65 Retirees:*** Current retirees over age 65 remain in their current medical plan until death. Beneficiaries remain in their current medical plan until death. Therefore, if the retiree predeceases the beneficiary, the beneficiary will continue to have coverage until his or her death. However, the State does not cover any of the costs of coverage.

***Coverage:*** It is assumed that 80% of current active employees with 10 years of service will elect retiree medical coverage.

***Medical Plan Costs:*** Estimated net per capita incurred claim costs for 2005-06 at age 64 and 65 was $4,688 and $2,538, respectively. It is assumed that future retirees are Medicare eligible. Per capita costs were developed from the State developed monthly costs.

***Age-based Morbidity:*** Per capita costs are adjusted to reflect expected cost increases related to age. The increase in the net incurred claims was assumed to be:

| Age | Annual Increase Retiree |
|---|---|
| 49 and below | 2.6% |
| 50-54 | 3.2% |
| 55-59 | 3.4% |
| 60-64 | 3.7% |
| 65-69 | 3.2% |
| 70-74 | 2.4% |
| 75-79 | 1.8% |
| 80 and over | 0.0% |