

**JUNE 30, 2004**  
**POST RETIREMENT BENEFITS ANALYSIS**  
**OF**  
**THE VERMONT STATE TEACHERS'**  
**RETIREMENT SYSTEM**

**October, 2004**

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## SECTION I - OVERVIEW

The Board of Trustees of the Vermont State Teachers' Retirement System has engaged Mellon to prepare an actuarial valuation of their post-retirement benefits program as of June 30, 2004. The Vermont State Teachers' Retirement System provided employee data and premium information.

The purposes of the valuation are to analyze the current funded position of the System's post-retirement benefits program, to determine the level of contributions necessary to assure sound funding 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 for Accounting and Financial Reporting by Employers for Post-employment Benefits Other Than Pensions.

We performed the calculations presented in this study on two bases. Under one, it is assumed the postretirement 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,

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Daniel Sherman, ASA, MAAA, EA  
Director and Consulting Actuary

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Date

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David Driscoll, FSA, MAAA, EA  
Principal

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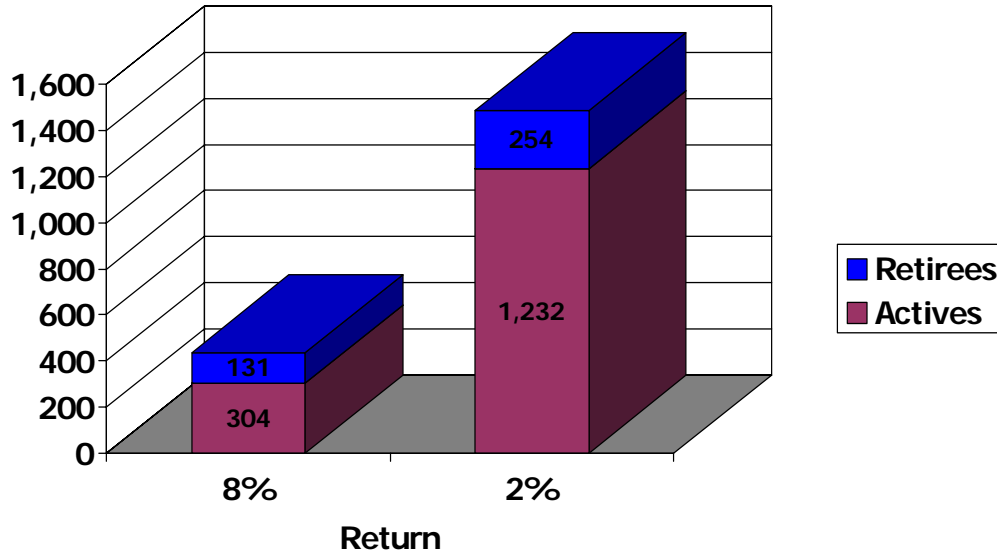
Date

## SECTION II – REQUIRED INFORMATION

|   |                      |                      |
|---|----------------------|----------------------|
| a) Assumed investment return  | 8%                   | 2%                   |
| b) Actuarial value of assets  | \$ 0                 | \$ 0                 |
| c) Actuarial accrued liability  |                      |                      |
| Active Participants   | \$ 303,854,640       | \$ 1,231,692,833     |
| Retired Participants  | <u>131,369,424</u>   | <u>254,076,087</u>   |
| Total   | \$ 435,224,064       | \$ 1,485,768,920     |
| d) Unfunded actuarial liability (c. – b.)   | \$ 435,224,064       | \$ 1,485,768,920     |
| e) Funded ratio (c. / b.)   | 0%                   | 0%                   |
| f) Annual covered payroll   | \$ 453,517,000       | \$ 453,517,000       |
| g) Unfunded actuarial liability<br>as percentage of covered payroll                   | 96.0%                | 327.6%               |
| h) Normal Cost for the 2005 fiscal year   | \$ 18,343,569        | \$ 98,864,637        |
| i) Amortization of unfunded actuarial liability<br>For the 2005 fiscal year (30-year) | \$ <u>22,886,578</u> | \$ <u>32,159,070</u> |
| j) Annual Required Contribution (ARC)<br>For the 2005 fiscal year (h. + i.)           | \$ 41,230,147        | \$ 131,023,707       |
| k) Expected benefit payments  | \$ 10,160,530        | \$ 10,160,530        |
| l) Increase in annual cost to fund the Plan (j. – k.)                                 | \$ 31,069,617        | \$ 120,863,177       |

### SECTION II – REQUIRED INFORMATION

#### Actuarial Accrued Liability

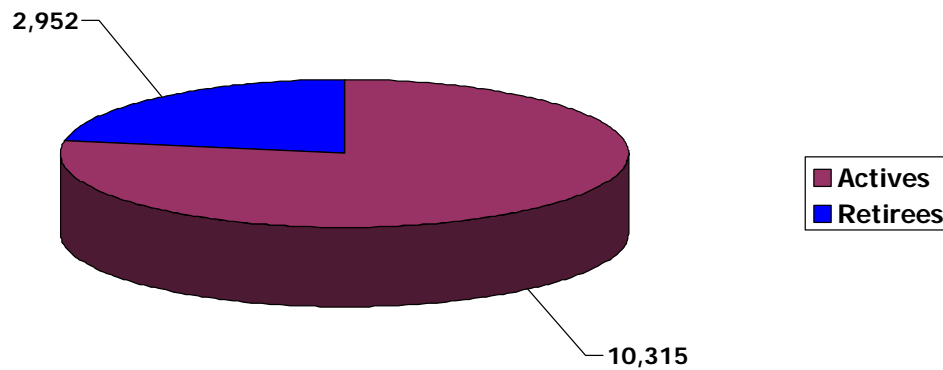


## SECTION III - MEMBERSHIP DATA AND MEDICAL PREMIUM

## Number of participants included in valuation

|         |              |
|---------|--------------|
|         | <u>Total</u> |
| Actives | 10,315       |
| Retired | <u>2,952</u> |
| Total   | 13,267       |

## Participants



## Annual Premiums for the 2005 Fiscal Year

|                                  | State Share |
|----------------------------------|-------------|
| JY                               |             |
| Retiree under 65                 | \$309.92    |
| Retiree over 65                  | \$249.53    |
| Retiree over 65 without Medicare | \$309.92    |
| <br>\$250 Comprehensive Plan     |             |
| Retiree under 65                 | \$309.92    |
| Retiree over 65                  | \$249.53    |
| <br>Vermont Health Partnership   |             |
| Retiree under 65                 | \$309.92    |
| JY, Comp, MediComp Carveout      | \$309.92    |
| <br>MediComp C Plan              |             |
| Medicare Eligible, over 65       | \$129.94    |
| Dependents                       | \$129.94    |

## SECTION IV – REQUIRED SUPPLEMENTARY INFORMATION

## SCHEDULE OF FUNDING PROGRESS

(dollar amounts in thousands)

| Actuarial Valuation Date | Actuarial Value of Assets<br>(a) | Actuarial Accrued Liability (AAL)<br>(b) | Unfunded AAL (UAAL)<br>(b)-(a) | Funded Ratio<br>(a)/(b) | Covered Payroll<br>(c) | UAAL as a Percentage of Covered Payroll<br>[(b)-(a)]/(c) |
|--------------------------|----------------------------------|--|--------------------------------|-------------------------|------------------------|--|
| June 30, 2004            | \$0                              | \$435,224                                | \$435,224                      | 0%                      | \$453,517              | 96.0%  |

Assuming a discount rate of 8%.

## SCHEDULE OF FUNDING PROGRESS

(dollar amounts in thousands)

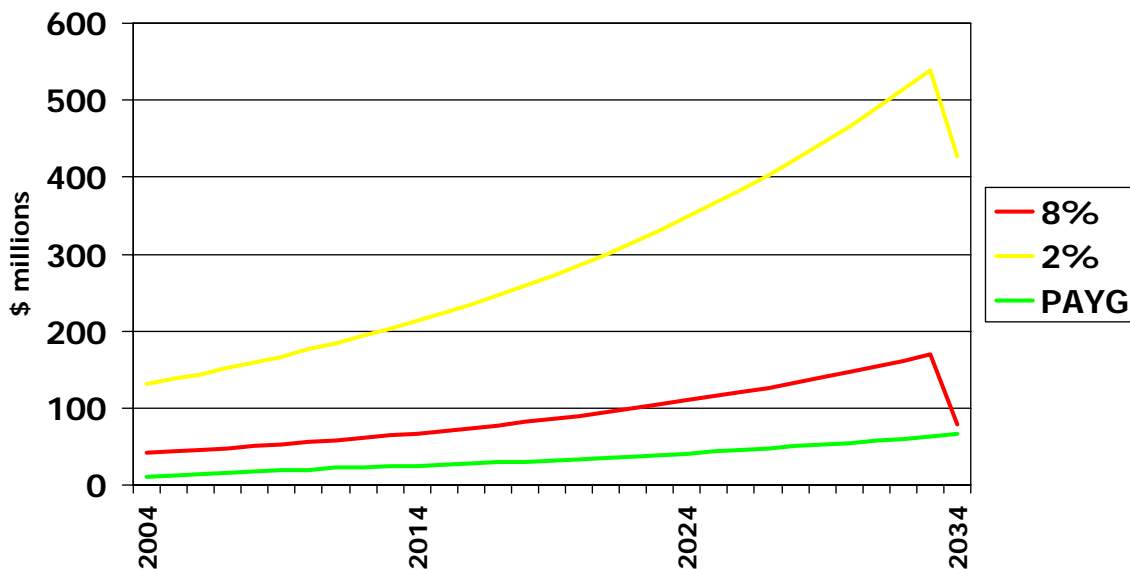
| Actuarial Valuation Date | Actuarial Value of Assets<br>(a) | Actuarial Accrued Liability (AAL)<br>(b) | Unfunded AAL (UAAL)<br>(b)-(a) | Funded Ratio<br>(a)/(b) | Covered Payroll<br>(c) | UAAL as a Percentage of Covered Payroll<br>[(b)-(a)]/(c) |
|--------------------------|----------------------------------|--|--------------------------------|-------------------------|------------------------|--|
| June 30, 2004            | \$0                              | \$1,485,769                              | \$1,485,769                    | 0%                      | \$453,517              | 327.6%   |

Assuming a discount rate of 2%.

## 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. 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 ARCs, computed under discount rates of 8% and 2%, to the pay-as-you-go amounts.





## SECTION V – FORECASTS

## Vermont State Teachers - OPEB Valuation

Funding and GASB Expense Forecast - 8%

| Fiscal Year<br>Ending in | Normal<br>Cost<br>(Service Cost) | Amortization of the<br>Unfunded Actuarial<br>Liability | Total State<br>Contribution<br>(ARC) | Pay-as-you-go | Difference  | Assets        |
|--------------------------|----------------------------------|--|--------------------------------------|---------------|-------------|---------------|
| 2005                     | 18,343,569                       | 22,886,578   | 41,230,147                           | 10,160,530    | 31,069,617  | 0             |
| 2006                     | 19,260,747                       | 24,030,907   | 43,291,654                           | 12,521,631    | 30,770,023  | 32,288,493    |
| 2007                     | 20,223,784                       | 25,232,453   | 45,456,237                           | 14,045,988    | 31,410,249  | 66,848,719    |
| 2008                     | 21,234,973                       | 26,494,075   | 47,729,048                           | 15,603,506    | 32,125,543  | 104,839,105   |
| 2009                     | 22,296,722                       | 27,818,779   | 50,115,501                           | 17,185,115    | 32,930,386  | 146,612,077   |
| 2010                     | 23,411,558                       | 29,209,718   | 52,621,276                           | 18,791,016    | 33,830,260  | 192,563,304   |
| 2011                     | 24,582,136                       | 30,670,204   | 55,252,340                           | 20,376,239    | 34,876,101  | 243,125,806   |
| 2012                     | 25,811,243                       | 32,203,714   | 58,014,957                           | 21,638,443    | 36,376,514  | 298,820,178   |
| 2013                     | 27,101,805                       | 33,813,900   | 60,915,705                           | 22,720,366    | 38,195,339  | 360,529,374   |
| 2014                     | 28,456,895                       | 35,504,595   | 63,961,490                           | 23,856,384    | 40,105,106  | 429,065,485   |
| 2015                     | 29,879,740                       | 37,279,825   | 67,159,565                           | 25,049,203    | 42,110,362  | 505,069,173   |
| 2016                     | 31,373,727                       | 39,143,816   | 70,517,543                           | 26,301,663    | 44,215,880  | 589,237,078   |
| 2017                     | 32,942,413                       | 41,101,007   | 74,043,420                           | 27,616,746    | 46,426,673  | 682,326,534   |
| 2018                     | 34,589,534                       | 43,156,057   | 77,745,591                           | 28,997,584    | 48,748,007  | 785,160,671   |
| 2019                     | 36,319,011                       | 45,313,860   | 81,632,871                           | 30,447,463    | 51,185,408  | 898,633,940   |
| 2020                     | 38,134,962                       | 47,579,553   | 85,714,515                           | 31,969,836    | 53,744,679  | 1,023,718,092 |
| 2021                     | 40,041,710                       | 49,958,530   | 90,000,240                           | 33,568,328    | 56,431,913  | 1,161,468,648 |
| 2022                     | 42,043,796                       | 52,456,457   | 94,500,253                           | 35,246,744    | 59,253,509  | 1,313,031,903 |
| 2023                     | 44,145,986                       | 55,079,280   | 99,225,266                           | 37,009,081    | 62,216,184  | 1,479,652,508 |
| 2024                     | 46,353,285                       | 57,833,244   | 104,186,529                          | 38,859,535    | 65,326,993  | 1,662,681,664 |
| 2025                     | 48,670,949                       | 60,724,906   | 109,395,855                          | 40,802,512    | 68,593,343  | 1,863,586,000 |
| 2026                     | 51,104,496                       | 63,761,151   | 114,865,647                          | 42,842,638    | 72,023,009  | 2,083,957,173 |
| 2027                     | 53,659,721                       | 66,949,209   | 120,608,930                          | 44,984,770    | 75,624,160  | 2,325,522,254 |
| 2028                     | 56,342,707                       | 70,296,669   | 126,639,376                          | 47,234,008    | 79,405,368  | 2,590,154,967 |
| 2029                     | 59,159,842                       | 73,811,503   | 132,971,345                          | 49,595,709    | 83,375,636  | 2,879,887,844 |
| 2030                     | 62,117,834                       | 77,502,078   | 139,619,912                          | 52,075,494    | 87,544,418  | 3,196,925,374 |
| 2031                     | 65,223,726                       | 81,377,182   | 146,600,908                          | 54,679,269    | 91,921,639  | 3,543,658,231 |
| 2032                     | 68,484,912                       | 85,446,041   | 153,930,953                          | 57,413,232    | 96,517,721  | 3,922,678,659 |
| 2033                     | 71,909,158                       | 89,718,343   | 161,627,501                          | 60,283,894    | 101,343,607 | 4,336,797,110 |
| 2034                     | 75,504,616                       | 94,204,260   | 169,708,876                          | 63,298,089    | 106,410,788 | 4,789,060,245 |
| 2035                     | 79,279,847                       | 0  | 79,279,847                           | 66,462,993    | 12,816,854  | 5,282,770,398 |

## SECTION V – FORECASTS

## Vermont State Teachers - OPEB Valuation

Funding and GASB Expense Forecast - 2%

| Fiscal Year<br>Ending in | Normal<br>Cost<br>(Service Cost) | Amortization of the<br>Unfunded Actuarial<br>Liability | Total State<br>Contribution<br>(ARC) | Pay-as-you-go | Difference  | Assets         |
|--------------------------|----------------------------------|--|--------------------------------------|---------------|-------------|----------------|
| 2005                     | 98,864,637                       | 32,159,070   | 131,023,707                          | 10,160,530    | 120,863,177 | 0              |
| 2006                     | 103,807,869                      | 33,767,023   | 137,574,892                          | 12,521,631    | 125,053,261 | 125,604,698    |
| 2007                     | 108,998,262                      | 35,455,374   | 144,453,636                          | 14,045,988    | 130,407,649 | 265,612,235    |
| 2008                     | 114,448,175                      | 37,228,143   | 151,676,318                          | 15,603,506    | 136,072,812 | 422,384,817    |
| 2009                     | 120,170,584                      | 39,089,550   | 159,260,134                          | 17,185,115    | 142,075,019 | 597,586,617    |
| 2010                     | 126,179,113                      | 41,044,028   | 167,223,141                          | 18,791,016    | 148,432,125 | 793,042,238    |
| 2011                     | 132,488,069                      | 43,096,229   | 175,584,298                          | 20,376,239    | 155,208,059 | 1,010,740,805  |
| 2012                     | 139,112,472                      | 45,251,040   | 184,363,512                          | 21,638,443    | 162,725,069 | 1,252,897,016  |
| 2013                     | 146,068,096                      | 47,513,592   | 193,581,688                          | 22,720,366    | 170,861,323 | 1,522,237,630  |
| 2014                     | 153,371,501                      | 49,889,272   | 203,260,773                          | 23,856,384    | 179,404,389 | 1,821,580,935  |
| 2015                     | 161,040,076                      | 52,383,736   | 213,423,812                          | 25,049,203    | 188,374,609 | 2,153,749,921  |
| 2016                     | 169,092,080                      | 55,002,922   | 224,095,002                          | 26,301,663    | 197,793,339 | 2,521,814,550  |
| 2017                     | 177,546,684                      | 57,753,069   | 235,299,753                          | 27,616,746    | 207,683,006 | 2,929,112,582  |
| 2018                     | 186,424,018                      | 60,640,722   | 247,064,740                          | 28,997,584    | 218,067,156 | 3,379,272,100  |
| 2019                     | 195,745,219                      | 63,672,758   | 259,417,977                          | 30,447,463    | 228,970,514 | 3,876,235,904  |
| 2020                     | 205,532,480                      | 66,856,396   | 272,388,876                          | 31,969,836    | 240,419,040 | 4,424,287,915  |
| 2021                     | 215,809,104                      | 70,199,216   | 286,008,320                          | 33,568,328    | 252,439,992 | 5,028,081,743  |
| 2022                     | 226,599,559                      | 73,709,177   | 300,308,736                          | 35,246,744    | 265,061,991 | 5,692,671,618  |
| 2023                     | 237,929,537                      | 77,394,635   | 315,324,172                          | 37,009,081    | 278,315,091 | 6,423,545,849  |
| 2024                     | 249,826,014                      | 81,264,367   | 331,090,381                          | 38,859,535    | 292,230,846 | 7,226,663,044  |
| 2025                     | 262,317,315                      | 85,327,586   | 347,644,901                          | 40,802,512    | 306,842,388 | 8,108,491,291  |
| 2026                     | 275,433,181                      | 89,593,965   | 365,027,146                          | 42,842,638    | 322,184,508 | 9,076,050,558  |
| 2027                     | 289,204,840                      | 94,073,663   | 383,278,503                          | 44,984,770    | 338,293,733 | 10,136,958,565 |
| 2028                     | 303,665,082                      | 98,777,346   | 402,442,428                          | 47,234,008    | 355,208,420 | 11,299,480,411 |
| 2029                     | 318,848,336                      | 103,716,214  | 422,564,550                          | 49,595,709    | 372,968,841 | 12,572,582,262 |
| 2030                     | 334,790,753                      | 108,902,024  | 443,692,777                          | 52,075,494    | 391,617,283 | 13,965,989,432 |
| 2031                     | 351,530,291                      | 114,347,125  | 465,877,416                          | 54,679,269    | 411,198,148 | 15,490,249,206 |
| 2032                     | 369,106,806                      | 120,064,482  | 489,171,288                          | 57,413,232    | 431,758,055 | 17,156,798,792 |
| 2033                     | 387,562,146                      | 126,067,706  | 513,629,852                          | 60,283,894    | 453,345,958 | 18,978,038,829 |
| 2034                     | 406,940,253                      | 132,371,091  | 539,311,344                          | 63,298,089    | 476,013,256 | 20,967,412,875 |
| 2035                     | 427,287,266                      | 0  | 427,287,266                          | 66,462,993    | 360,824,273 | 23,139,493,391 |

**SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS**

**VERMONT STATE TEACHERS**

***Interest*** 8.0% per year, net of investment expenses

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

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

| Year         | Inflation Rate |
|--------------|----------------|
| 2004         | 9.0%           |
| 2005         | 8.0            |
| 2006         | 7.0            |
| 2007         | 6.0            |
| 2008 & After | 5.0            |

***Amortization period:*** Closed basis. Thirty year amortization starting in FYE05 with payments increasing 5% annually.

***Retirement Eligibility:*** As prescribed by the terms of the State Teachers' Retirement System of Vermont.

***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:

| Age | Annual Rate of Retirement |        |
|-----|---------------------------|--------|
|     | 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.

## **SCHEDULE B - SUMMARY OF PROGRAM PROVISIONS**

### 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.

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

### Post-Age 65 Retirees

Current retirees over age 65 remain in their current medical plan until death.

### Coverage

For purposes of this valuation, active employees are assumed to keep their current coverage level (family or individual) after they retire.