Report on the Actuarial Valuation of Post Retirement Benefits of the Vermont State Teachers' Retirement System

Prepared as of June 30, 2016

October 2016

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Table of Contents

Introduction

The Board of Trustees of the Vermont State Teachers' Retirement System ("VSTRS" or the "System") has engaged Buck Consultants, LLC ("Buck") to prepare an actuarial valuation of their OPEB (Other Post-employment Benefits, or, postretirement benefits other than pension) program as of June 30, 2016. The State Treasurer's Office provided the employee data, premium, and claims 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 and to provide reporting and disclosure information for financial statements, governmental agencies and other interested parties. In addition, the valuation provides information that may be used to determine the level of contributions recommended to assure sound funding of such benefits. This valuation report contains information that is required for compliance with the Governmental Accounting Standards Board's Statement 43, ***Financial Reporting for Postemployment Benefit Plans Other than Pension Plans*** ("GASB 43") and Statement 45 ***Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions*** ("GASB 45").

Use of this report for any other purpose or by anyone other than the plan, the plan sponsor, or their auditors may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. This report should not be provided except in its entirety. Because of the risk of misinterpretation of actuarial results, you should ask Buck to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without review by Buck. No one other than the plan, plan sponsor or their auditors may make any representations or warranties based on any statements or conclusions contained in this report without the written consent of Buck.

Our calculations do not reflect any other postemployment benefits than those described in this report.

Financing Mechanism

This valuation continues to reflect the change to the way prescription drug benefits for Medicare-eligible retirees are structured. As of January 1, 2014, VEHI[1] is providing these benefits under a Medicare Part D Employer Group Waiver Plan (EGWP) arrangement in coordination with Blue Cross Blue Shield of Vermont. The EGWP arrangement was first reflected in our June 30, 2013 valuation. Prior to the change to the EGWP arrangement, VSTRS was participating in the Retiree Drug Subsidy (RDS) program, in which the plan sponsor applies for a subsidy equal to 28% of gross Rx claims within certain parameters, typically representing subsidies equal to about 20% of gross Rx cost. Under the EGWP arrangement, the benefits available to participants do not materially change, but are provided through a plan which is directly contracted with Medicare and which receives several sources of subsidies. The three material subsidies are the Direct Subsidy to EGWP, Coverage Gap Discounts on brand drugs, and Federal Reinsurance. The total of these subsidies is expected to be of greater value than the RDS subsidies.

In addition to the different financial arrangement, the EGWP arrangement is treated differently than the RDS for accounting purposes. GASB Technical Bulletin No. 2006-1 disallowed reflecting future RDS payments as an offset to GASB 45 liabilities, and so we did not reflect RDS payments in our valuations prior to June 30, 2013. On the other hand, since the EGWP arrangement flows directly into reduced premiums, as opposed to the intra-governmental transfer of RDS, the subsidies received under the EGWP arrangement are directly reflected in the GASB 45 calculations, and thus the expected reduction in costs that started January 1, 2014 were reflected starting with the June 30, 2013 valuation.

The change to EGWP from RDS is expected to represent a material reduction in the net cost to provide these benefits, and we have reflected the savings in this valuation by assuming a reduction in our post-Medicare prescription drug cost assumption. Based on information from the Vermont State Treasury Office we understand that these insured rates do not currently reflect expected EGWP subsidies. It is also our understanding that these rates will not reflect these subsidies in the future; therefore, no reduction was assumed to impact premiums paid by retirees or VSTRS. Our per capita cost assumptions are based on claims information provided by BlueCross

[1] The Vermont Education Health Initiative (VEHI) is a large, non-profit purchaser of health care plans for Vermont's school employees. This self-funded, fully-insured purchasing trust is managed jointly by the Vermont School Boards Insurance Trust (VSBIT) and the Vermont-National Education Association (Vermont-NEA).

BlueShield of Vermont, which we adjusted to reflect our understanding that the impact of these EGWP subsidies will reduce the State's costs outside of the insurance mechanism, and was not included in the claims provided.

We estimated the total reduction in the cost to provide benefits using Buck's proprietary EGWP financial model fitted for VSTRS's prescription drug plan design, as well as risk score information and actual EGWP subsidies received for the year 2014. We assume that net Rx costs for Medicare eligible participants reduce gross spending by about 24.2% in 2017. This contrasts with an assumed reduction in net Rx costs for Medicare eligible participants of about 27.5% in 2016. The reduction in the percentage savings assumed was based on the actual experience received for VSTRS, as well as information about the 2017 level of federal direct subsidy.

Assumptions

For the first time, separate claims information was provided for Medicare and non-Medicare VSTRS retirees and dependents. These claims indicate that the combined retiree rates set by VEHI represent more than the cost of their coverage, effectively subsidizing the active cost. The numbers in this valuation only include retiree costs; however, we believe these active subsidies should be accounted for in some other fashion.

Assumptions related to retiree medical participation rates were updated for the June 30, 2016 valuation to reflect recent experience, as well as updated methodology to include retirees who elect after the initial year of retirement.

While the actuarial assumptions developed for this analysis are considered reasonable for financial reporting purposes, it should be understood that there is a range of assumptions that could be deemed reasonable that would yield different results. Moreover, while the assumption set is considered reasonable based on prior plan experience, it should be understood that future plan experience may differ considerably from what has been assumed due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. The measurement of the sensitivity of these results to changes in assumptions except discount rate is beyond the scope of this assignment. Sensitivity to discount rate is presented based on an alternative scenario at 7.95% which would be consistent with prefunding of the costs of benefits.

The following assumptions have been updated for the June 30, 2016 valuation:

- Participation in the plan for future retirees has been increased from 50% to 70% for retirees receiving a subsidy, and decreased from 50% to 10% for retirees receiving no subsidy, based on a review of the past 3 years' experience including retirees who elected medical coverage after retirement, tempered with actuarial judgement.
- Participation in the plan for terminated vested participants has been increased from 15% to 30% for retirees receiving a subsidy and 10% for retirees receiving no subsidy, based on a review of the past 5 years' experience including retirees who elected medical coverage after retirement, tempered with actuarial judgement.
- We have updated our spouse coverage assumption to assume that any spouses who do not qualify for a State subsidy will not elect coverage in the future.
- Actual claims data for the VSTRS population was used to develop claims costs for pre- and post-65 retirees. Previously, we relied on the premium rates provided by VEHI to develop these costs. The claims experience is much lower than expected based on the premiums provided by VEHI; therefore, this change resulted in a significant decrease in liabilities.
- The EGWP reduction factor has been refined based on information already published by CMS about the 2017 level of federal direct subsidy, as well as actual EGWP subsidy and risk score experience provided by BCBS.
- Payment of the Cadillac Tax is assumed to commence in 2020 rather than 2018 due to the December 2015 continuing resolution which postponed its effective date.
- Based on a review of prior years' data and confirmation from the State, it is our understanding that retirees may not elect coverage at retirement, but instead elect at a later open enrollment date. Based on our review, we assume that any eligible participant who qualifies for a State subsidy with a date of retirement in the last year will elect coverage at a rate of 40%. If the date of retirement is more than a year before the valuation date, the election rate is assumed to be 10%. This assumption is based on a review of the past 5 years' experience, tempered with actuarial judgement. It includes an assumption that future election will be partially offset by some retirees terminating medical coverage.

The following assumption was reviewed but not updated for the June 30, 2016 valuation:

- The percentage of future retirees electing coverage who will cover a spouse remains at 60% for males and 50% for females for spouses eligible to receive an 80% State subsidy. The 2015-16 year was the first year for which the subsidy was available to spouses; thus it was assumed that election would be higher for the period 7/1/2015 – 6/30/2016 because of retirees who waited to retire to receive the spouse subsidy. Therefore we did not deem this experience credible for purposes of setting this assumption. This assumption will be monitored as more experience emerges and updated if necessary.

Data

Census data was provided by System personnel. Our analysis relies on the accuracy of the data. The data was not reviewed for consistency or completeness beyond that necessary to develop the analysis. Such a detailed review of the data and its sources is beyond the scope of this analysis. To the extent that the data is incomplete or incorrect, the results of the analysis are also incomplete or incorrect.

Please see the table in Section 1 for details on actuarial gains and losses experienced over the year.

Funding

Effective with the fiscal year ending June 30, 2015, the state is separately financing the OPEB benefits for teachers. Previously, the benefits had been paid directly out of the pension assets of the System; then part of the current year pension contributions were retroactively attributed as OPEB funding. Now, the OPEB funds run through a separate pass-through fund. It is our understanding that there is no intention to pre-fund the OPEB benefits. Since there is now a separate Retired Teachers Health and Medical Benefits Fund, we would expect that fund to account for values under GASB 43. The values in this report can be used for that purpose for periods where this statement is effective.

The valuation reflects the fact that there is currently no formal pre-funding policy, although pre-funding remains under consideration. Therefore, results are calculated using a 4.00% discount rate to reflect the assumption that benefits are expected to be financed from the state's general fund, albeit now through the mechanism of the Retired Teachers Health and Benefit Fund. We note that the pay-as-you-go contribution scenario is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due. Continuing, increasing contributions will be expected to be required in order to fund future benefits.

A second scenario of valuation results is provided which assumes the System's liabilities will be funded in a manner similar to that used for pensions, starting with the fiscal year beginning July 1, 2016. Results under this scenario reflect a discount rate of 7.95%, the rate which is consistent with the rate of return assumption used for the pension valuation as of June 30, 2016. This scenario is for illustration only and we are not opining that the use of 7.95% is reasonable for GASB 43 and GASB 45 measurements for this newly established Fund.

New GASB Accounting Standards

Governmental Accounting Standards Board (GASB) Statement No. 74 (GASB 74) replaces GASB 43 for plan years beginning after June 15, 2016. GASB 75 replaces GASB 45 for plan years beginning after June 15, 2017. The calculations included in this report are not appropriate for reporting under GASB 74 or 75. A separate actuarial review will be needed to calculate financial information under the new GASB standards.

Actuarial Certification

Section II provides a summary of the principal valuation results in the form of the information required under GASB 45. Based on the foregoing, the cost results and actuarial exhibits presented in this report were determined on a consistent and objective basis in accordance with applicable Actuarial Standards of Practice and generally accepted actuarial procedures. They fully and fairly disclose the actuarial position of the Plan based on the employee and plan cost data submitted.

Hope Manion is a Fellow of the Society of Actuaries and Kevin Penderghest is an Associate of the Society of Actuaries. Both Ms. Manion and Mr. Penderghest are Members of the American Academy of Actuaries and meet the Qualification Standards of the Academy in the health practice area to render the actuarial opinions contained herein. Mr. Penderghest has reviewed the overall reasonableness and consistency of these results. David Driscoll is a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. Mr. Driscoll meets the Qualification Standards of the American Academy of Actuaries in the retirement practice area. Mr. Driscoll as actuary for the retirement benefits provided by VSTRS has evaluated the reasonableness of the assumptions set for VSTRS that are also used in this analysis. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and Ms. Manion and Mr. Penderghest are available to answer questions concerning it.

Respectfully Submitted,

Buck Consultants, LLC

10/27/2016

Kevin J. Penderghest, ASA, MAAA
Director, Consulting Actuary

Date

David L. Driscoll

10/27/2016

David L. Driscoll, FSA, MAAA, EA
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Date

10/27/2016

Hope C. Manion, FSA, MAAA
Principal, Consulting Actuary

Date

Section I – Overview

The System experienced a net decrease in its accrued liability for post-retirement benefits over the past year. The decrease in liability is due to the following factors:

- Updates to the methodology used in setting our cost assumptions using actual claims information for the VSTRS population.

These factors were partially offset by the following:

- Expected increases due to the passage of time;
- Impact of recent year's demographic experience; and
- Changes to the participation assumptions for current and future retirees and spouses.

There were no changes to the discount rate used for the pay-as-you go basis or to the healthcare trend rates. The discount rate assumed for the pre-funded basis alternative scenario is consistent with the discount rate presented to and adopted by the Board in 2015. Other than those changes mentioned above, no other assumption changes have been made since the last valuation. A summary of valuation assumptions is shown in Section VI.

GASB Staff Technical Bulletin No. 2006-1, *Accounting and Financial Reporting by Employers for Payments from the Federal Government Pursuant to the Retiree Drug Subsidy Provisions of Medicare Part D*, provides that GASB OPEB calculations cannot reflect offsets for future Medicare Part D Retiree Drug Subsidy payments. Instead, such payments are to be reflected when the drug subsidy is actually earned (i.e., when the drug benefit costs for which the subsidy is due have been incurred by the participants). Thus, our calculations prior to the implementation of the EGWP did not reflect the value of future Retiree Drug Subsidy amounts. On the other hand, since the EGWP arrangement flows directly into reduced premiums, as opposed to the intra-governmental transfer of RDS, the subsidies received under the EGWP arrangement can be directly reflected in the GASB 43 and 45 calculations. Subsidy payments under the EGWP arrangement are reflected for fiscal year 2014 onwards in the calculation.

We have made explicit adjustments to the values developed in this report for the future effects of the "Cadillac tax" to become effective in 2020 under the federal healthcare reform legislation, the Patient Protection and Affordable Care Act. We have not made adjustments for other potential effects of health care reform legislation on VSTRS liabilities. Please see Section VII for details.

Shown below is a reconciliation of the Unfunded Actuarial Accrued Liability from last year to this year under the 4% discount rate assumption.

6/30/2015 Unfunded Accrued Liability		$ 1,003,093,294
End of year normal cost	$ 24,853,366	
Interest cost	38,924,996	
Expected Benefit Payments	(40,218,215)	
Expected increase in assets	799,488	
6/30/2016 Expected Unfunded Accrued Liability		$ 1,027,452,929
Impact of recent year Demographic Experience	$ 61,985,720	
Updated per capita costs (including EGWP assumption)	(572,519,216)	
Other Assumption Changes	150,873,093	
Asset loss		10,105,128
6/30/2016 Unfunded Accrued Liability		$ 677,897,654

The fiscal 2017 Annual Required Contribution calculated on the pay-as-you-go basis at a discount rate of 4.00% is $35,918,126; we project the Annual Required Contribution calculated at 4.00% for the subsequent year (fiscal year ending June 30, 2018) to be $37,316,779.

Please note, the funded status of the plan under GASB 45 requirements is not an appropriate measure for assessing the sufficiency of plan assets to cover estimated cost of settling the plan's obligations. The funded status measured under the "pay-as-you-go" 4.0% discount rate scenario is not appropriate for assessing the need for or the amount of future actuarially determined contributions.

Section II – Required Information

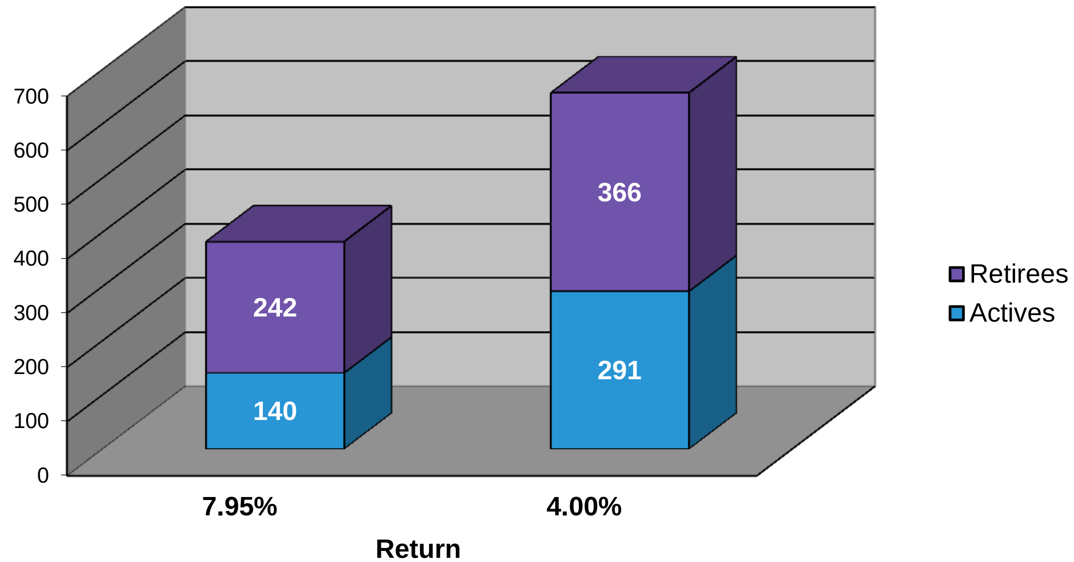
		Pre-Funding Basis	Pay-as-you-go Basis
a)	Assumed discount rate	7.95%	4.00%
b)	Actuarial value of assets	($20,961,074)	($20,961,074)
c)	Actuarial accrued liability		
	Active Participants	$140,126,575	$290,742,125
	Retired Participants	$242,128,581	$366,194,455
	Total	$382,255,156	$656,936,580
d)	Unfunded actuarial liability (c. - b.)	$403,216,230	$677,897,654
e)	Funded ratio	-5.5%	-3.2%
f)	Annual covered payroll	$606,842,668	$606,842,668
g)	Unfunded actuarial liability as a percentage of covered payroll	66.4%	111.7%
h)	Normal cost for the 2017 fiscal year	$7,411,280	$16,815,904
i)	Amortization of unfunded actuarial liability for the 2017 fiscal year (30-year)	$19,520,109	$19,601,656
j)	Interest on expected benefit payments	($983,285)	($499,434)
k)	Annual Required Contribution (ARC) for the 2017 fiscal year (h. + i. + j.)*	$25,948,104	$35,918,126
l)	Expected net retiree claims	$25,218,962	$25,218,962
m)	Normal cost for the 2018 fiscal year	$7,781,844	$17,656,699
n)	Amortization of unfunded actuarial liability for the 2018 fiscal year (30-year)	$20,190,791	$20,147,753
o)	Interest on expected benefit payments	($960,129)	($487,673)
p)	Annual Required Contribution (ARC) for the 2018 fiscal year** (m. + n. + o.)	$27,012,506	$37,316,779

* Payment is assumed to be made at the beginning of the fiscal year.

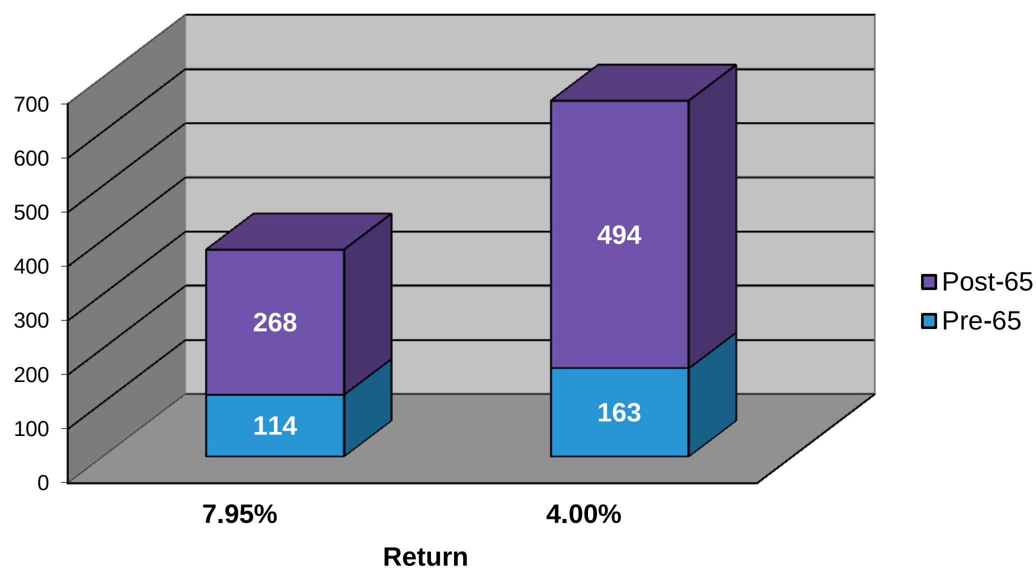
** ARC for fiscal year 2018 is estimated using roll forward from Fiscal Year 2017 results.

Important: Governmental Accounting Standards Board (GASB) Statement No. 74 (GASB 74) replaces GASB 43 for plan years beginning after June 15, 2016. GASB 75 replaces GASB 45 for plan years beginning after June 15, 2017. The calculations shown above are not appropriate for reporting under GASB 74 or 75.

Actuarial Accrued Liability in $millions – Actives versus Retirees



Actuarial Accrued Liability in $millions – Pre-65 versus Post-65

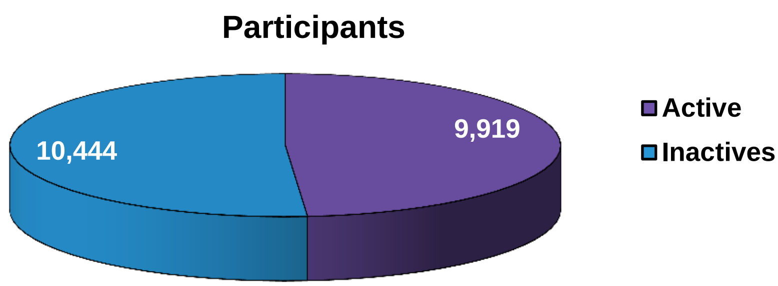


Section III – Membership Data and Medical Premium

Number of Participants Included In Valuation

	2016	2015
Actives	9,919	9,582
Inactives	10,444*	7,983*
Total	20,363	17,565

* Includes 1,824 and 1,943 terminated vested individuals in 2016 and 2015 respectively. 2016 includes 2,265 retirees and beneficiaries who have no current coverage but may elect retiree medical in the future. In addition, the 2016 count includes 314 retirees who retired on July 1, 2016, and the 2015 count includes 223 retirees who retired on July 1, 2015.



The Number of Active Members Distributed By Age and Service as of June 30, 2016

	Service									
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
AGE	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Under 20	0	0	0	0	0	0	0	0	0	0
20 to 24	160	0	0	0	0	0	0	0	0	160
25 to 29	662	127	0	0	0	0	0	0	0	789
30 to 34	509	461	101	0	0	0	0	0	0	1,071
35 to 39	354	428	414	92	0	0	0	0	0	1,288
40 to 44	271	260	379	370	60	0	0	0	0	1,340
45 to 49	211	258	299	330	273	57	1	0	0	1,429
50 to 54	137	184	231	242	221	200	57	0	0	1,272
55 to 59	105	146	213	253	193	214	188	38	0	1,350
60 to 64	51	86	122	201	141	146	99	91	13	950
65 to 69	20	29	28	39	33	28	16	19	26	238
70 & up	5	4	7	2	0	6	1	2	5	32
TOTAL	2,485	1,983	1,794	1,529	921	651	362	150	44	9,919

5 of the 9,919 active participants are Group A, the remainder are Group C.

Monthly State Costs (including expenses) for 2016

	Gross Premium	Retirees
JY Plan		
Retiree under 65	844.66	56
Retiree over 65	685.66	666
2 Person under 65	1665.49	9
2 Person over 65	1371.32	87
2 Person, 1 under 65 and 1 over 65	1530.32	11
Family, under 65	2239.71	1
Family, 2 under 65 and 1 over 65	2239.71	
Family, 1 under 65 and 2 over 65	2056.98	1
$300 Comprehensive Plan		
Retiree under 65	752.41	385
Retiree over 65	560.26	3004
2 Person under 65	1478.99	105
2 Person over 65	1120.52	541
2 Person, 1 under 65 and 1 over 65	1312.67	141
Family, under 65	1982.66	6
Family, 2 under 65 and 1 over 65	1982.66	1
Family, 1 under 65 and 2 over 65	1872.93	0
Vermont Health Partnership		
Retiree under 65	752.41	463
2 Person under 65	1478.99	105
Family, under 65	1982.66	0
JY Carveout		
2 Person, 1 under 65 and 1 over 65	1438.07	1
Family, 2 under 65 and 1 over 65	2164.65	0
Comp Carveout		
2 Person, 1 under 65 and 1 over 65	1312.67	14
Family, 2 under 65 and 1 over 65	2039.25	0
Vermont Blue 65 Carveout		
2 Person, 1 under 65 and 1 over 65	959.47	6
Family, 2 under 65 and 1 over 65	1685.05	0
Vermont Blue 65		
Retiree over 65	207.05	572
2 Person over 65	414.12	172
Family, over 65	621.18	0
JY Carveout		
2 Person, 1 under 65 and 1 over 65	1051.72	0
Family, 1 over 65 and 2 under 65	1872.55	0
Comp Carveout		
2 Person, 1 under 65 and 1 over 65	959.47	4
Family, 1 over 65 and 2 under 65	1686.05	0
Vermont Health Partnership 65 Carveout		
2 Person, 1 under 65 and 1 over 65	959.47	8
Family, 1 over 65 and 2 under 65	1686.05	0

* Retirees also have the option to decline post-65 prescription drug coverage in the JY and Comp plans. Due to current low participation in this option, it is assumed no current or future retirees will elect.

Section IV – Required Supplementary Information

The Schedule of Funding Progress is required to be included in the State's Financial Statements

Schedule of Funding Progress Based on Current Policy of Pay-As-You-Go Funding (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, 2016	($20,961)	$656,937	$677,898	-3.2%	$606,843	111.7%
June 30, 2015	($10,056)	$993,037	$1,003,093	-1.0%	$576,255	174.1%
June 30, 2014	$0	$766,775	$766,775	0%	$565,658	135.6%
June 30, 2013	$0	$712,666	$712,666	0%	$563,534	126.5%
June 30, 2012	$0	$827,180	$827,180	0%	$561,026	147.4%
June 30, 2011	$0	$780,032	$780,032	0%	$547,748	142.4%
June 30, 2010	$0	$703,751	$703,751	0%	$560,763	125.5%
June 30, 2009	$0	$872,236	$872,236	0%	$561,588	155.3%
June 30, 2008	$0	$863,555	$863,555	0%	$535,807	161.2%
June 30, 2007	$0	$820,212	$820,212	0%	$515,573	159.1%
June 30, 2006	$0	$952,526	$952,526	0%	$499,044	190.9%

Liabilities above were based on assumed discount rates of 3.75% prior to 2008 and 4.00% for 2008 and after.

Schedule of Funding Progress Based on a Policy of Pre-funding Starting July 1, 2016

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, 2016	($20,961)	$382,255	$382,255	-5.5%	$606,843	66.4%
June 30, 2015	($10,056)	$993,037	$1,003,093	-1.0%	$576,255	174.1%
June 30, 2014	$0	$766,775	$766,775	0%	$565,658	135.6%
June 30, 2013	$0	$712,666	$712,666	0%	$563,534	126.5%
June 30, 2012	$0	$827,180	$827,180	0%	$561,026	147.4%
June 30, 2011	$0	$780,032	$780,032	0%	$547,748	142.4%
June 30, 2010	$0	$703,751	$703,751	0%	$560,763	125.5%
June 30, 2009	$0	$872,236	$872,236	0%	$561,588	155.3%
June 30, 2008	$0	$863,555	$863,555	0%	$535,807	161.2%
June 30, 2007	$0	$820,212	$820,212	0%	$515,573	159.1%
June 30, 2006	$0	$952,526	$952,526	0%	$499,044	190.9%

Liabilities above were based on assumed discount rates of 3.75% prior to 2008, 4.00% for 2008 through 2015, and 7.95% for 2016.

Section V – Net OPEB Obligation

GASB Statement No. 45 requires the development of Annual OPEB Cost and Net OPEB Obligation (NOO). This development is shown in the following table.

Development of OPEB Cost and Net OPEB Obligation (NOO)

Year Ending June 30	Annual Required Contribution	Interest on NOO	Amortization of NOO	Annual OPEB Cost (1)+(2)-(3)	Actual Contribution	Change in NOO (4)-(5)	NOO Balance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2008	60,220,989	0	0	60,220,989	0	60,220,989	60,220,989
2009	59,124,164	2,408,840	1,741,312	59,791,692	0	59,791,692	120,012,681
2010	58,966,227	4,800,507	3,470,210	60,296,524	0	60,296,524	180,309,206
2011	41,509,429	7,212,368	5,213,706	43,508,091	0	43,508,091	223,817,296
2012	43,410,732	8,952,692	6,471,758	45,891,666	0	45,891,666	269,708,962
2013	45,458,358	10,788,358	7,798,732	48,447,984	0	48,447,984	318,156,946
2014	39,238,510	12,726,278	9,199,623	42,765,165	0	42,765,165	360,922,111
2015	40,988,368	14,436,884	10,436,193	44,989,059	14,665,267	30,323,792	391,245,903
2016	52,105,794	15,649,836	11,313,017	56,442,613	16,434,421	40,008,192	431,254,096
2017	35,918,126	17,250,164	12,469,868	40,698,422			

Benefit payments for fiscal years prior to 2015 were made from the pension assets and recorded as an asset loss as part of the pension plan accounting. Therefore, pay-as-you-go costs were not included in the calculation of the NOO for these years. It is our understanding benefit payments will no longer be paid from the pension fund beginning with fiscal year 2015; instead, they will be paid from the Retired Teachers Health and Medical Benefits Fund. Contributions to this fund will be included in the calculation of the NOO for fiscal year 2015 and all years following.

Important: Governmental Accounting Standards Board (GASB) Statement No. 74 (GASB 74) replaces GASB 43 for plan years beginning after June 15, 2016. GASB 75 replaces GASB 45 for plan years beginning after June 15, 2017. The calculations shown above are not appropriate for reporting under GASB 74 or 75.

Section VI – Actuarial Assumptions and Methods

Vermont State Teachers

Interest

4.00% per year, the assumed rate of return on general assets of the employer, for a pay-as-you-go plan. The 4.0% rate is considered reasonable for this purposes based on consistency with expected value produced by the 4th quarter 2015 GEMS economic model generator over a 30 year time horizon.

Alternatively, 7.95% per year, net of investment expenses was used in the illustrative scenario for a fully pre-funded plan. Note that the fully funded discount rate is consistent with the rate used for the pension valuations, the derivation of which is discussed in our Experience Study of the Vermont State Teachers' Retirement System.

Actuarial Cost Method:

Projected Unit Credit with benefits attributed ratably from date of hire until expected retirement date.

Medical Care and State Share Inflation:

5.00%

The assumption reflects the anticipated impact of various wellness programs implemented by the Vermont Education Health Initiative to moderate the increase in rates over the short term. The trend assumption has not been changed since the previous valuation. While the current trend assumption is lower than recent healthcare trend survey assumptions, it is consistent with overall experience of the past few years. On a longer term basis, trend of 5.0% consistent with the 3.0% CPI plus 1.0% real GDP plus growth in technology and other related medical costs. These real trend components are consistent with long term trend analysis published by CMS.

Amortization period:

Thirty year open amortization basis with payments increasing 5% annually as is consistent with statutory guidelines regarding amortization of pension liabilities. Under this amortization methodology, the Unfunded Actuarial Accrued Liability is not expected to be fully amortized, even if the full Annual Required Contribution was contributed to the plan. We are not opining on the reasonableness of a 5% salary growth assumption for use under GASB 43 and 45.

Grandfathering:

Participants who had attained 10 years of service as of June 30, 2010 are considered Grandfathered.

Separations before Normal Retirement:

Representative values of the assumed annual rates of withdrawal, vested retirement, early retirement, and disability are as follows.

	Withdrawal and Vested Retirement		Disability	
Age	Males	Females	Males	Females
25	21.00%	20.00%	0.005%	0.008%
30	12.60	14.00	0.008	0.008
35	8.40	11.30	0.010	0.008
40	6.50	9.03	0.015	0.010
45	5.80	6.03	0.026	0.023
50	5.40	5.25	0.067	0.070
55	5.40	5.04	0.044	0.048
59	5.40	5.04	0.117	0.071
60	5.40	5.04	0.147	0.084
61	5.40	5.04	0.183	0.101

Participants are considered Grandfathered under the pension plan if they were within 5 years of the former Normal Retirement criteria (age 62, or completion of 30 years of service at any age) as of July 1, 2010. Retirement rates are then applicable as follows:

	Annual Rate of Retirement – Group A					
Age	5 YOS	10 YOS	15 YOS	20 YOS	25 YOS	30 YOS
50	-	-	-	-	-	40.00%
51	-	-	-	-	-	20.00
52	-	-	-	-	-	20.00
53	-	-	-	-	-	20.00
54	-	-	-	-	-	20.00
55	6.13%	6.13%	6.13%	6.13%	6.13%	20.00
56	6.25	6.25	6.25	6.25	6.25	10.00
57	6.25	6.25	6.25	6.25	6.25	10.00
58	6.25	6.25	6.25	6.25	6.25	10.00
59	9.38	9.38	9.38	9.38	9.38	10.00
60	12.50	12.50	12.50	12.50	12.50	30.00
61	18.75	18.75	18.75	18.75	18.75	25.50
62	25.00	25.00	25.00	25.00	25.00	25.00
63	22.00	22.00	22.00	22.00	22.00	22.00
64	22.00	22.00	22.00	22.00	22.00	22.00
65	33.00	33.00	33.00	33.00	33.00	33.00
66	33.00	33.00	33.00	33.00	33.00	33.00
67	33.00	33.00	33.00	33.00	33.00	33.00
68	22.00	22.00	22.00	22.00	22.00	22.00
69	33.00	33.00	33.00	33.00	33.00	33.00
70	100.00	100.00	100.00	100.00	100.00	100.00

Age	5 YOS	10 YOS	15 YOS	20 YOS	25 YOS	30 YOS
Annual Rate of Retirement – Group C, GF						
50	-	-	-	-	-	40.00%
51	-	-	-	-	-	20.00
52	-	-	-	-	-	20.00
53	-	-	-	-	-	20.00
54	-	-	-	-	-	20.00
55	6.13%	6.13%	6.13%	6.13%	6.13%	8.75
56	6.25	6.25	6.25	6.25	6.25	6.25
57	6.25	6.25	6.25	6.25	6.25	6.25
58	6.25	6.25	6.25	6.25	6.25	10.00
59	9.38	9.38	9.38	9.38	9.38	10.00
60	18.75	18.75	18.75	18.75	18.75	25.00
61	18.75	18.75	18.75	18.75	18.75	17.00
62	12.50	12.50	12.50	12.50	12.50	20.00
63	22.00	22.00	22.00	22.00	22.00	22.00
64	22.00	22.00	22.00	22.00	22.00	22.00
65	33.00	33.00	33.00	33.00	33.00	33.00
66	33.00	33.00	33.00	33.00	33.00	33.00
67	33.00	33.00	33.00	33.00	33.00	33.00
68	22.00	22.00	22.00	22.00	22.00	22.00
69	33.00	33.00	33.00	33.00	33.00	33.00
70	100.00	100.00	100.00	100.00	100.00	100.00

Age	5 YOS	10 YOS	15 YOS	20 YOS	25 YOS	30 YOS
Annual Rate of Retirement – Group C, Non-GF						
50	-	-	-	-	-	-
51	-	-	-	-	-	-
52	-	-	-	-	-	-
53	-	-	-	-	-	-
54	-	-	-	-	-	-
55	6.13%	6.13%	6.13%	6.13%	6.13%	6.13%
56	6.25	6.25	6.25	6.25	6.25	6.25
57	6.25	6.25	6.25	6.25	6.25	6.25
58	6.25	6.25	6.25	6.25	6.25	10.00
59	9.38	9.38	9.38	9.38	9.38	15.00
60	18.75	18.75	18.75	18.75	18.75	25.00
61	18.75	18.75	18.75	18.75	18.75	17.00
62	12.50	12.50	12.50	12.50	12.50	20.00
63	22.00	22.00	22.00	22.00	22.00	22.00
64	22.00	22.00	22.00	22.00	22.00	22.00
65	33.00	33.00	33.00	33.00	33.00	33.00
66	33.00	33.00	33.00	33.00	33.00	33.00
67	33.00	33.00	33.00	33.00	33.00	33.00
68	22.00	22.00	22.00	22.00	22.00	22.00
69	33.00	33.00	33.00	33.00	33.00	33.00
70	100.00	100.00	100.00	100.00	100.00	100.00

These rates have not been updated since the prior valuation, and are based on the results of the experience study presented and approved by the Board in 2015.

Mortality:

For current and future healthy retirees and dependents: The RP-2000 Mortality Tables for Healthy Annuitants with mortality improvements projected to 2029 with Scale BB.

For the period following disability retirement: The RP-2000 Disabled Life Mortality Tables are used with mortality improvements projected to 2020 with Scale AA.

The tables used were selected to allow for a margin to reflect mortality improvement after the valuation date.

All mortality tables used in this valuation are consistent with the pension valuation per Title 16, Chapter 55, Section 1944 of the Vermont Statutes. The selection of these rates is based on the results of the experience study presented and approved by the Board in 2015.

Per Capita Costs:

Costs are based on retiree claims incurred from May 1, 2015 to April 30, 2016, provided by BCBS separately for non-Medicare and Medicare retirees. Member counts were also provided for this period to calculate average costs per person. Medicare claims were also split between medical and prescription drug benefits. Future retirees are assumed to elect plans based on current retiree elections. An age morbidity curve developed based on a study performed by Dale Yamamoto for the Society of Actuaries was used to measure the annual increases in per capita claim costs for each age as well as relative cost by gender, adjusting the male age 65 per capita claims cost[1]. Pre-65 age-based morbidity factors were applied to pre-65 medical and prescription drug costs, and separate Medicare medical and Rx morbidity factors were applied to Medicare-eligible medical costs and prescription drug costs, respectively. Please see Appendix A for the table of factors used. An actual age and gender distribution based on reported census information as of July 1, 2015 was used for retired participants and dependents. Non-Medicare costs were adjusted to account for the cost of dependent children based on the number of retirees reported covering children. Any dependents reported with a date of birth after July 1, 1990 were assumed to be covered children. Costs were loaded by 5% to account for adverse deviation.

The male age 64 per capita cost assumption at age 64 is $13,321 for the fiscal year beginning July 1, 2016. Male age 65 costs are assumed to be $1,764 for medical and $2,029 for prescription drugs (before EGWP). The average premiums based on current retiree elections are as follows:

	Pre-Medicare	Post-Medicare
Retiree	$9,095	$6,293
Spouse	$8,780	$6,293

The employer subsidy for retirees and spouses is based on a percentage of the following amounts for fiscal year beginning July 1, 2016: $9,029 pre-Medicare and $6,205 post-Medicare. These amounts are assumed to increase with healthcare cost trend.

[1] **Health Care Costs—From Birth to Death**, prepared by Dale H. Yamamoto, http://www.healthcostinstitute.org/files/Age-Curve-Study_0.pdf. Retrieved July 15, 2013. The Study was sponsored by the Society of Actuaries and is part of the Health Care Cost Institute's Independent Report Series.

The above post-65 prescription drug cost is further reduced by multiplying by a factor of 75.8% to reflect estimated EGWP subsidies to be paid to VSTRS. It is our understanding premiums will not be adjusted to reflect these subsidies.

For the previous valuation, per capita costs were based on age adjusted fully insured premiums. This methodology produced cost assumptions significantly higher than those developed using actual claims information for the current valuation. It is our understanding that the VSTRS experience has been consistently better than that of the entire VEHI population on which premium rates are based. It is also our understanding that VSTRS experience will continue to be pooled with VEHI to set premium rates. Therefore, we do not expect these rates to materially change in the future, other than by the assumed 5% healthcare cost trend.

Coverage:

It is assumed that 70% of those eligible for a subsidy at retirement will elect medical coverage and 10% of those not eligible for a subsidy will elect. It is assumed that 30% of future terminated vested participants who are eligible for a subsidy will elect medical coverage and 10% of those not eligible for a subsidy will elect medical coverage. Individuals are assumed to elect options in the same proportion as current retirees. Subsidy information for current retirees and dependents was provided by the Treasurer's office. For those whose subsidy information was not provided, assumptions were made based on retirement date and years of service. The participation assumptions have been updated since the prior valuation based on the experience of new retirees for fiscal years 2012 through 2016, tempered with actuarial judgement. In particular, we have modified these assumptions to account for a portion of retirees who do not immediately elect medical coverage upon retirement.

Current retirees who have not elected medical coverage can choose to do so each year at open enrollment. It is assumed that 40% of non-covered retirees who retired within the past year will elect medical, as well as 10% of all other retirees. Of those current retirees and terminated vested participants currently without coverage, only those eligible for a subsidy are assumed to elect coverage. These assumptions are based on the experience of new retirees for fiscal years 2014 and 2015, tempered with actuarial judgement.

Participation assumptions have been updated since the prior valuation.

Premium Reduction Option:

Actual data for current retirees and spouses were used. It is assumed that 5% of retirees covering spouses will elect the Premium Reduction Option at retirement. The Option is currently valued using a reduction factor of 85.0% of the single-life subsidy for which the retiree and spouse are eligible, consistent with actual PRO reduction factors used for current retirees. Any surviving spouses currently listed in the census with a date of retirement before January 1, 2007 are assumed to pay the full medical premium. This assumption has not changed since the prior valuation, and is validated by current census information.

Marital Status:

It is assumed the 60% of males and 50% of females electing coverage will cover a spouse who is eligible for subsidized coverage at retirement. These percentages are based on an analysis of 2012-2014 VSERS experience, whose spouses currently receive a similar level of subsidy to what VSTRS spouses are eligible for, tempered with actuarial judgement. Fiscal year 2016 is the first year with spouses eligible for the subsidy, however the data was considered skewed because of the possibility of employees waiting to retire with the spouse subsidy. This assumption will continue to be monitored.

For those spouses not eligible for subsidized coverage, it is assumed they will not elect coverage. This assumption has been updated since the prior valuation, and is considered conservative given that those spouses required to pay full premiums are expected to generate negative liability.

Actual spouse date of birth is used for current retirees; for future retirees and current retirees for whom this information was not provided, it is assumed that husbands are 3 years older than wives. This assumption remains unchanged from our previous valuation, and was validated by examining actual retiree 2016 census, tempered with actuarial judgement. Spouses are assumed to make coverage elections in the same proportions as retirees.

Section VII – Consideration of Health Care Reform and Subsequent Events

Summary of Effects of Selected Provisions of Health Care Reform

Removal of Lifetime Maximum – Effective 1/1/2011: As the plans offered by VSTRS do not have Lifetime Maximums, there is no effect on the liabilities.

Medicare Advantage Plans - Effective 1/1/2011: The law provides for reductions to the amounts that would be provided to Medicare Advantage plans starting in 2011. As VSTRS does not provide these plans to retirees, there is no impact.

Expansion of Child Coverage to Age 26 - Effective 1/1/2011: We have assumed any impact on the VEHI rates has already been reflected. Our non-Medicare cost assumptions include a load for dependent children.

Medicare Part D Subsidy - Shrinking Medicare Prescription Drug "Donut Hole"- Starting 1/1/2011: It is our understanding that Medicare prescription drug benefits are being offered through an Employer Group Waiver Plan (EGWP) effective January 1, 2014. Therefore, VSTRS will no longer seek reimbursement for the Retiree Drug Subsidy. The impact of the shrinking Medicare prescription drug benefit donut hole coverage gap on EGWP financing was considered in setting the trend assumption for this valuation. Because the improved coverage gap benefit results in lower reinsurance in the catastrophic layer of federal payments, no long term trend impact was assumed.

Excise Tax on High-Cost Employer Health Plans (aka Cadillac Tax) - Effective 1/1/2018: There is considerable uncertainty about how the tax would be applied, and considerable latitude in grouping of participants for tax measurement testing purposes. We prepared a projection of the calculation based on a reasonable interpretation of the applicable legislation. The projection separately valued single and family premium costs for participants over age 65 from the premium costs for pre-65 participants, projecting these amounts by the medical cost increase factors in this valuation. The limits after 2020 were calculated using an assumed CPI of 3.0%. We adjusted healthcare cost trend to reflect the Tax. This increased overall results by about 1.8%.

Green Mountain Care: Vermont had proposed a single payer system to be established as the means of implementing health care reform. The Governor's office announced that it would not be going ahead with the arrangement due to expected costs of the arrangement[1].

Other: We have not identified any other specific provision of national health care reform that would be expected to have a significant impact on the measured obligation. As additional guidance on both the federal and Vermont legislation is issued, we will continue to monitor any potential impacts.

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[1] See for example https://www.bostonglobe.com/business/2015/01/25/costs-derail-vermont-single-payer-health-plan/VTAEZFGpWvTen0QFahW0pO/story.html.

Subsequent Events

GASB 74/75: GASB has recently announced the adoption of two new accounting standards for OPEB, GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* (GASB 74) and GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75)*. The provisions of GASB 74 are effective for the reporting of the Plan for fiscal years beginning after June 15, 2016. The provisions of GASB 75 related to employer accounting, are effective for fiscal years beginning after June 15, 2017. We have not yet evaluated the impact of these new rules on the accounting for the health benefits offered by the System.

VEHI Plan changes: It is our understanding that all active employees participating in VEHI will be moved to new plans beginning in 2018. Information from BCBS indicates that rates will continue to be set using all VEHI experience, include VSTRS experience. Based on this information, no adjustments have been made to per capita costs, premiums, or subsidy amounts due to the uncertainty of the impact of these changes on VSTRS retirees.

Section VIII – Postretirement Benefit Plan Provisions

Retiree Medical Benefits

If eligible for a pension, retirees and dependents are eligible for the following subsides:

ELIGIBILITY AND PREMIUM SUBSIDY

·**Retiree Coverage and Subsidy Level**

Years of Service at June 30, 2010

·10 or more:	80% Subsidy	
·Less than 10:	Less than 15 years at retirement:	0% Subsidy
	15-19.99 years:	60% Subsidy
	20-24.99 years:	70% Subsidy
	25 years or more:	80% Subsidy

· **Spouse Coverage with 80% Subsidy**

Years of Service at June 30, 2010	*Required Years of Service at Retirement*
·Less than 15:	25 years of service at retirement
·Between 15 and 24.99:	10 additional years from June 30, 2010
·Between 25 and 29.99:	35 years of service at retirement
·30 or more:	5 additional years from June 30, 2010

Premium Reduction Option

For retirements on or after January 1, 2007, members entitled to a VSTRS premium subsidy have a one-time option to reduce the percentage of VSTRS subsidy during the retiree's life, with the provision that a surviving spouse will continue to receive the same VSTRS subsidy for his or her lifetime. The reduction in VSTRS subsidy is intended to result in an actuarially equivalent benefit.

Terminated Vested Benefits ·

Members who terminate with 5 or more years of service but who are not yet 55 years old may elect to receive medical coverage at the time their retirement benefits would commence. If terminated prior to June 30, 2010 with at least 10 years of service, 80% premium subsidy is provided for members at the time their retirement benefits would commence.

State of Vermont Teachers Medical Plans

	JY Plan*	$300 Comprehensive Plan	Vermont Health Partnership
Primary Care Physician	N/A	N/A	Select upon enrollment
Co-pay	$20	N/A	$15 for PCP, $25 for Specialist
Deductible	N/A	$300	N/A
Coinsurance (Plan Pays)	100% of Allowed	80%	100% of Allowed
Out-of-Pocket	N/A	$600/$1,200	N/A
Lifetime Maximum	None	None	None
Prescription Drugs	Generic - $5 Preferred Brand - $20 Non-Preferred - $45 Out of Pocket Maximum - $600/$1,200		

Plans fully insured via VEHI purchasing partnership.

*For those eligible, benefits are coordinated with Medicare. Vermont Blue65 Plan C Medigap plan is also available. The Medigap plan does not include prescription drug coverage.

Section IX – Glossary of Terms

Actuarial accrued liability
That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of OPEB benefits and expenses which is not provided for by future Normal Costs and therefore is the value of benefits already earned.

Actuarial assumptions
Assumptions as to the occurrence of future events affecting OPEB costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided OPEB benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.

Actuarial cost method
A procedure for determining the Actuarial Present Value of OPEB benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial experience gain or loss
A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Amortization (of unfunded actuarial accrued liability)
That portion of the OPEB plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability or the Unfunded Frozen Actuarial Accrued Liability.

Annual OPEB cost
An accrual-basis measure of the periodic cost of an employer's participation in a defined benefit OPEB plan.

Annual required contributions of the employer (ARC)
The employer's periodic expense to a defined benefit OPEB plan, calculated in accordance with the parameters. It is the value of the cash contributions for a funded plan and the starting point in the calculation of the expense entry in the profit and loss section of the financial statements.

Closed amortization period (closed basis)
A specific number of years that is counted from one date and, therefore, declines to zero with the passage of time. For example, if the amortization period initially is thirty years on a closed basis, twenty-nine years remain after the first year, twenty-eight years after the second year, and so forth. In contrast, an open amortization period (open basis) is one that begins again or is recalculated at each actuarial valuation date. Within a maximum number of years specified by law or policy (for example, thirty years), the period may increase, decrease, or remain stable.

Covered payroll
Annual compensation paid to active employees covered by an OPEB plan. If employees also are covered by a pension plan, the covered payroll should include all elements included in compensation on which contributions to the pension plan are based. For example, if pension contributions are calculated on base pay including overtime, covered payroll includes overtime compensation.

Defined benefit OPEB plan
An OPEB plan having terms that specify the benefits to be provided at or after separation from employment. The benefits may be specified in dollars (for example, a flat dollar payment or an amount based on one or more factors such as age, years of service, and compensation), or as a type or level of coverage (for example, prescription drugs or a percentage of healthcare insurance premiums).

Funded ratio
The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Funding policy
The program for the amounts and timing of contributions to be made by plan members, employer(s), and other contributing entities (for example, state government contributions to a local government plan) to provide the benefits specified by an OPEB plan.

Healthcare cost trend rate
The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Investment return assumption (discount rate)
The rate used to adjust a series of future payments to reflect the time value of money.

Level dollar amortization method
The amount to be amortized is divided into equal dollar amounts to be paid over a given number of years; part of each payment is interest and part is principal (similar to a mortgage payment on a building). Because payroll can be expected to increase as a result of inflation, level dollar payments generally represent a decreasing percentage of payroll; in dollars adjusted for inflation, the payments can be expected to decrease over time.

Level percentage of projected payroll amortization method
Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation; in dollars adjusted for inflation, the payments can be expected to remain level.

Net OPEB obligation (NOO)
The cumulative difference, since the effective date of GASB 45, between annual OPEB cost and the employer's contributions to the plan, including the OPEB liability (asset) at transition, if any, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to OPEB-related debt. It will be included as a balance sheet entry on the financial statements.

Normal cost
That portion of the Actuarial Present Value of OPEB benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. It is the value of benefits to be accrued in the valuation year by active employees.

OPEB-related debt
All long-term liabilities of an employer to an OPEB plan, the payment of which is not included in the annual required contributions of a sole or agent employer (ARC) or the actuarially determined required contributions of a cost-sharing employer. Payments generally are made in accordance with installment contracts that usually include interest. Examples include contractually deferred contributions and amounts assessed to an employer upon joining a multiple-employer plan.

Other postemployment benefits
Postemployment benefits other than pension benefits. Other postemployment benefits (OPEB) include postemployment healthcare benefits, regardless of the type of plan that provides them, and all postemployment benefits provided separately from a pension plan, excluding benefits defined as termination offers and benefits.

Pay-as-you-go
A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

Required supplementary information (RSI)
Schedules, statistical data, and other information that are an essential part of financial reporting and should be presented with, but are not part of, the basic financial statements of a governmental entity.

Appendix A – Yamamoto Age Morbidity Table

Gender distinct age morbidity factors for pre-Medicare morbidity were developed from "Health Care Costs—From Birth to Death" sponsored by the Society of Actuaries and prepared by Dale H. Yamamoto (May 2013) (Chart 5). Table 4 from Mr. Yamamoto's study formed the basis of Medicare morbidity factors that are gender distinct and differ for prescription and non-prescription coverages. Non-prescription morbidity factors assumed a cost allocation of 50% for inpatient, 25% for outpatient, and 25% for professional services. Adjustments were made to Table 4 factors for inpatient costs at age 70 and below to smooth out what appears to be a spike in utilization for Medicare retirees gaining healthcare for the first time through Medicare. While such retirees were included in the study, their specific experience is not applicable for a valuation of an employer retiree medical plan where participants had group active coverage before retirement.

Age	Male	Female
50	0.4612	0.5736
51	0.4884	0.5930
52	0.5194	0.6124
53	0.5465	0.6318
54	0.5775	0.6512
55	0.6085	0.6667
56	0.6434	0.6860
57	0.6744	0.7054
58	0.7093	0.7287
59	0.7481	0.7519
60	0.7829	0.7791
61	0.8217	0.8101
62	0.8643	0.8450
63	0.9070	0.8798
64	0.9535	0.9186

Age	NonRx Male	NonRx Female	Rx Male	Rx Female
65	1.0000	0.8862	1.0000	0.9884
66	1.0125	0.8912	1.0720	1.0591
67	1.0252	0.8962	1.1350	1.1208
68	1.0376	0.9012	1.1915	1.1761
69	1.0501	0.9067	1.2404	1.2224
70	1.0623	0.9120	1.2841	1.2622
71	1.0612	0.9175	1.3213	1.2943
72	1.0642	0.9275	1.3522	1.3226
73	1.0711	0.9399	1.3779	1.3445
74	1.0805	0.9543	1.3997	1.3638
75	1.0911	0.9707	1.4177	1.3792
76	1.1030	0.9881	1.4319	1.3920
77	1.1174	1.0083	1.4447	1.3997
78	1.1340	1.0318	1.4550	1.4062
79	1.1544	1.0587	1.4614	1.4100
80	1.1788	1.0900	1.4614	1.4087
81	1.2065	1.1248	1.4550	1.4036
82	1.2378	1.1633	1.4396	1.3933
83	1.2710	1.2037	1.4165	1.3792
84	1.3061	1.2447	1.3869	1.3625
85	1.3424	1.2851	1.3522	1.3419
86	1.3795	1.3255	1.3149	1.3188
87	1.4160	1.3651	1.2763	1.2943
88	1.4517	1.4030	1.2404	1.2699
89	1.4863	1.4376	1.2044	1.2468
90	1.5190	1.4680	1.1722	1.2237
91	1.5500	1.4916	1.1414	1.2018
92	1.5793	1.5060	1.1118	1.1812
93	1.6059	1.5087	1.0861	1.1620
94	1.6302	1.4985	1.0604	1.1427
95	1.6518	1.4727	1.0360	1.1247
96	1.6692	1.4301	1.0141	1.1080
97	1.6839	1.3709	0.9923	1.0913
98	1.6944	1.2937	0.9730	1.0746