Segal Consulting

Vermont State Employees' Retirement System

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2017 In accordance with GASB Statement No. 75 Reporting for Fiscal Year Ending June 30, 2018

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June 4, 2018

Office of the Vermont State Treasurer
109 State Street
Montpelier, Vermont 05609

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2017 under Governmental Accounting Standards Board Statement No. 75 for fiscal year ending June 30, 2018. The report summarizes the actuarial data used in the valuation, discloses the Net OPEB Liability (NOL) as of June 30, 2017, and analyzes the preceding year's experience. The Actuarially Determined Contribution for fiscal years ending June 30, 2017 and June 30, 2018 were calculated by the prior actuary, Buck Consultants. This report was based on the census data and financial information provided and/or affirmed by the Vermont State Employees' Retirement System, and the terms of the Plan. The actuarial calculations were completed under the supervision of Yori Rubinson, FSA MAAA, Vice President and Retiree Health Actuary.

If you have any questions, please feel free to call me. We look forward to discussing this material with you at your convenience.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: Daniel A. Levin
Daniel A. Levin, FSA MAAA FCA CEBS
Senior Vice President

SECTION 1

EXECUTIVE SUMMARY

SECTION 2

GASB 75 INFORMATION

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SUPPORTING INFORMATION

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may provide health benefits to post-65 retirees that coordinates with Medicare. If so, changes in the Medicare law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the Vermont State Employees' Retirement System to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the auditor. Some plans include assets, such as private equity holdings, real estate, or hedge funds that are not subject to valuation by reference to transactions in the marketplace. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to reflect gradually year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. To determine the future costs of benefits, Segal collects claims, premiums, and enrollment data in order to establish a baseline cost for the valuation measurement, and then develops short- and long-term health care cost trend rates to project increases in costs in future years. This forecast also requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model necessarily uses approximations and estimates that may lead to significant changes in our results but will have no impact on the actual cost of

the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared for use by the Vermont State Employees' Retirement System. It includes information for compliance with accounting standards and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- If the Vermont State Employees' Retirement System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- Sections of this report include actuarial results that are unrounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience, health care trend, and investment losses, not just the current valuation results.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Vermont State Employees' Retirement System should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Vermont State Employees' Retirement System upon delivery and review. Vermont State Employees' Retirement System should notify Segal immediately of any questions or concerns about the final content.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Purpose

This report presents the results of our actuarial valuation of Governmental Entity (the "Employer") OPEB plan as of June 30, 2017, required by Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions.* The actuarial computations made are for purposes of fulfilling plan accounting requirements. Determinations for purposes other than meeting financial accounting requirements may be significantly different from the results reported here.

Highlights of the Valuation

ACCOUNTING AND FINANCIAL REPORTING

- The **Total OPEB Liability** as of June 30, 2017 is $1,484,522,051, a decrease of $109,788,066 from Total OPEB Liability of $1,594,310,117 as of June 30, 2016. Total plan obligations had been expected to increase to $1,674,672,379, due to normal plan operations. The difference between actual and expected actuarial accrued liabilities was the effect of:
  - **Valuation assumption changes** decreased the Total OPEB Liability by $190,150,328. This was the result of increasing the discount rate from 2.85% to 3.58%. Detailed information regarding all actuarial assumptions can be found in Section 3, Exhibit II. The current plan of benefits is summarized in Exhibit III of Section 3.
- As of June 30, 2017, the ratio of assets to the Total OPEB Liability (the funded ratio) is 1.52%. This is based on the market value of assets as of June 30, 2017.
- The **Annual OPEB Expense** is $87,205,472 for the year ending June 30, 2018.

Summary of Key Valuation Results

	As of June 30, 2016	As of June 30, 2017
Total OPEB Liability	$1,594,310,117	$1,484,522,051
Plan Fiduciary Net Position (Assets)	21,352,817	22,501,872
Net OPEB Liability	$1,572,957,300	$1,462,020,179
Plan Fiduciary Net Position as a percentage of Total OPEB Liability	1.34%	1.52%
	For Year Ending June 30, 2018	
Annual OPEB Expense	$87,205,472	
	For Year Ending June 30, 2017	**For Year Ending June 30, 2018**
Actuarially Determined Contribution*	$71,832,832	$74,760,248
Actual Contribution for Fiscal Year Ending	$33,122,887	
Benefit payments net of retiree contributions, including administrative expense	$33,346,278	

*The Actuarially Determined Contributions were calculated by the prior actuary, Buck Consultants.

June 4, 2018

Actuarial Certification

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. has conducted an actuarial valuation of certain benefit obligations of the Vermont State Employees' Retirement System other postemployment benefit programs as of June 30, 2017, in accordance with generally accepted actuarial principles and practices. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of GASB Statement 75 for the determination of the liability for postemployment benefits other than pensions.

The actuarial valuation is based on the plan of benefits and reliance on participant, premium, claims and expense data provided by the System or from vendors employed by the System. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The actuarial computations made are for purposes of fulfilling plan accounting and funding requirements. Determinations for purposes other than meeting financial accounting and funding requirements may be significantly different from the results reported here. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience or rates of return on assets 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 scope of the assignment did not include performing an analysis of the potential change of such future measurements except where noted.

To the best of my knowledge, this report is complete and accurate and in my opinion presents the information necessary to comply with GASB Statement 75 with respect to the benefit obligations addressed. The signing actuary is a member of the Society of Actuaries, the American Academy of Actuaries, and other professional actuarial organizations and meets the "General Qualification Standards for Statements of Actuarial Opinions" to render the actuarial opinion contained herein.

Yori Rubinson

Yori Rubinson, FSA MAAA
Vice President and Retiree Health Actuary

EXHIBIT 1
General Information about the OPEB Plan

Plan Description

Pursuant to contractual agreement and policy, VSERS provides postemployment healthcare benefits to eligible VSERS employees who retire from the System. Vermont Statute Title 3, Chapter 16 assigns the authority to VSERS to establish and amend the benefit provisions of the plan and to establish maximum obligations of plan members to contribute to the plan. The VSERS Board of Trustees is authorized to establish contribution rates of System employees and retirees, and they are set as part of the collective bargaining process.

At June 30, 2016, the Vermont State Employees' Retirement System membership consisted of the following:

	June 30, 2016
Retired members or beneficiaries currently receiving benefits	4,795
Active members	8,813
Total	13,608

EXHIBIT 2
Net OPEB Liability

	June 30, 2016	June 30, 2017
The components of the Net OPEB Liability are as follows:		
Total OPEB Liability	$1,594,310,117	$1,484,522,051
Plan Fiduciary Net Position	21,352,817	22,501,872
Net OPEB Liability	$1,572,957,300	$1,462,020,179
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	1.34%	1.52%

The Net OPEB Liability was measured as of June 30, 2017 and 2016. The Plan Fiduciary Net Position (plan assets) was valued as of the measurement dates and the Total OPEB Liability was determined from actuarial valuations as of June 30, 2016.

EXHIBIT 2 (continued)
Net OPEB Liability

Actuarial assumptions. The Total OPEB Liability used the following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified:

	June 30, 2016	**June 30, 2017**
Discount Rate	2.85%	3.58%
Salary Increase Rate	Varies by age	Varies by age
Healthcare Costs Trend Rates		
Non-Medicare	7.50% graded to 4.50% over 13 years	7.50% graded to 4.50% over 12 years
Medicare	8.00% graded to 4.50% over 11 years	8.00% graded to 4.50% over 10 years
Retiree Contributions	Equal to health trend	Equal to health trend
Pre-retirement Mortality		
Groups A/F/DC	(same as current year)	101% of RP-2014 blended 30% Blue Collar Employee, 70% Healthy Employee with generational projection using Scale SSA-2017.
Group C	(same as current year)	RP-2014 Blue Collar Employee with generational projection using Scale SSA-2017.
Group D	(same as current year)	RP-2014 Healthy Employee with generational projection using Scale SSA-2017.
Post-retirement Mortality		
Groups A/F/DC	(same as current year)	101% of RP-2014 blended 30% Blue Collar Annuitant, 70% Healthy Annuitant with generational projection using Scale SSA-2017.
Group C	(same as current year)	RP-2014 Blue Collar Annuitant with generational projection using Scale SSA-2017.
Group D	(same as current year)	RP-2014 Healthy Annuitant with generational projection using Scale SSA-2017.
Disabled Post-retirement Mortality	(same as current year)	RP-2014 Disabled Mortality Table with generational projection using Scale SSA-2017.

Detailed information regarding all actuarial assumptions can be found in Section 3, Exhibit II.

EXHIBIT 3
Determination of Discount Rate and Investment Rates of Return

DEVELOPMENT OF LONG-TERM RATE

The long-term expected rate of return on OPEB plan investments are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The target allocation, long-term expected rates of return for each major asset class, and expected inflation, as provided by the System, are summarized below:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return as of June 30, 2017
Large cap equity	20%	5.92%
International equity	15%	6.71%
Emerging international equity	5%	9.70%
Core bonds	60%	1.38%
Inflation		2.75%

The System's Board established the Vermont State Employees' Postemployment Benefits Trust Fund (the Trust) in 2005. The Trust was created for the sole purpose of accepting irrevocable contributions from the System in order to provide postemployment health insurance benefits to current and future eligible retirees of the System in accordance with the terms of the healthcare plan.

EXHIBIT 3 (continued)

Determination of Discount Rate and Investment Rates of Return

PROJECTION OF OPEB PLAN'S FIDUCIARY NET POSITION FOR USE IN CALCULATION OF DISCOUNT RATE

The projection of cash flow used to determine the discount rate assumed that the Vermont State Employees' Retirement System contributions would be made at rates sufficient to pay projected benefit payments in the upcoming year. Based on these assumptions, the OPEB Plan's fiduciary net position was projected to be exhausted within the first year. Therefore, the short-term bond date expected rate of return of 3.58% on plan investments was applied to all periods of projected benefit payments to determine the Total OPEB Liability.

Year Beginning July 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments and Administrative Expenses (c)	Projected Investment Earnings (d)	Projected Ending Plan Fiduciary Net Position (e) = (a) + (b) - (c) + (d)
2017	$22,501,872	$18,111,934	$41,427,127	$813,321	$0

Notes:

(1) Amounts may not total exactly due to rounding.

(2) Column (c): Projected benefit payments have been determined in accordance with paragraphs 30-35 of GASB Statement No. 75 and are based on the closed group of active, retired members and beneficiaries as of June 30, 2016.

(3) Column (d): Projected investment earnings are based on the assumed investment rate of return of 7.50% per annum and reflect the assumed timing of benefit payments and contributions made at the middle of each year.

(4) The Plan's Fiduciary Net Position is projected to be exhausted within the first year.

EXHIBIT 4
Sensitivity

The following presents the NOL of the Vermont State Employees' Retirement System as well as what the Vermont State Employees' Retirement System's NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (2.58%) or 1-percentage-point higher (4.58%) than the current rate. Also shown is the NOL as if it were calculated using healthcare cost trend rates that were 1 percentage point lower or 1 percentage point higher than the current healthcare trend rates.

June 30, 2017	1% Decrease in Discount Rate (2.58%)	Current Discount Rate (3.58%)	1% Increase in Discount Rate (4.58%)
Net OPEB Liability (Asset)	$1,723,870,936	$1,462,020,179	$1,252,908,205
	1% Decrease in Healthcare Cost Trend Rates	**Current Healthcare Cost Trend Rates**	**1% Increase in Healthcare Cost Trend Rates**
Net OPEB Liability (Asset)	$1,237,397,451	$1,462,020,179	$1,751,783,709

EXHIBIT 5
Schedule of Changes in Net OPEB Liability

Reporting Date for Employer under GASB 75	June 30, 2018
Measurement Date for Employer under GASB 75	**June 30, 2017**
Total OPEB Liability	
Service cost	$66,840,919
Interest	46,867,620
Change of benefit terms	0
Differences between expected and actual experience	0
Changes of assumptions	(190,150,328)
Benefit payments, net of retiree contributions, including administrative expenses	(33,346,278)
Net change in Total OPEB Liability	($109,788,066)
Total OPEB Liability – beginning	1,594,310,117
(a) Total OPEB Liability – ending	$1,484,522,051
Plan Fiduciary Net Position	
Contributions – employer	$32,948,697
Contributions – employee	0
Contributions – transfers from other pension trust funds	174,190
Net investment income	1,372,446
Benefit payments, including refunds of member contributions and administrative expenses	(33,346,278)
Net change in Plan Fiduciary Net Position	$1,149,055
Plan Fiduciary Net Position – beginning	21,352,817
(b) Plan Fiduciary Net Position – ending	$22,501,872
(c) Net OPEB Liability – ending (a) – (b)	$1,462,020,179
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	1.52%
Covered employee payroll	$497,200,588
Plan Net OPEB Liability as percentage of covered employee payroll	294.05%

EXHIBIT 5 (continued)
Schedule of Changes in Net OPEB Liability

Notes to Schedule:

The information in Exhibit 5 is required beginning in 2017. A full 10-year trend will be compiled in future years.

Benefit changes:	None
Changes of assumptions:	In 2017, the discount rate was increased from 2.85% to 3.58%.

EXHIBIT 6

Deferred Outflows of Resources and Deferred Inflows of Resources

The following charts reflect the deferred inflows and outflows of resources related to OPEB. Deferred inflows and outflows are differences between actual and expected experience that are not reflected in the current year's expenses.

Reporting Date for Employer under GASB 75		**June 30, 2018**
Measurement Date for Employer under GASB 75		**June 30, 2017**
Deferred Outflows of Resources		
1.	Changes in proportion and differences between employer's contributions and proportionate share of contributions	$0
2.	Changes of assumptions or other inputs	0
3.	Net difference between projected and actual earnings on plan investments	176,510
4.	Difference between expected and actual experience in the Total OPEB Liability	0
5.	Total Deferred Outflows of Resources	$176,510
Deferred Inflows of Resources		
6.	Changes in proportion and differences between employer's contributions and proportionate share of contributions	$0
7.	Changes of assumptions or other inputs	165,196,216
8.	Net difference between projected and actual earnings on investments	0
9.	Difference between expected and actual experience in the Total OPEB Liability	0
10.	Total Deferred Inflows of Resources	$165,196,216

Deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized as follows:

Reporting Date for Employer under GASB 75 Year Ended June 30:

2018	N/A
2019	($24,909,984)
2020	(24,909,984)
2021	(24,909,984)
2022	(24,909,984)
2023	(24,954,111)
Thereafter	(40,425,660)

EXHIBIT 7

Schedule of Recognition of Changes in Total Net OPEB Liability

			Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience on Total OPEB Liability						
			Reporting Date for Employer under GASB 75 Year Ended June 30:						
Reporting Date for Employer under GASB 75 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	Thereafter
2018	$0	7.62	$0	$0	$0	$0	$0	$0	$0
Net increase (decrease) in OPEB expense			$0	$0	$0	$0	$0	$0	$0

			Increase (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Assumption Changes						
			Reporting Date for Employer under GASB 75 Year Ended June 30:						
Reporting Date for Employer under GASB 75 Year Ended June 30	Effect of Assumption Changes	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	Thereafter
2018	($190,150,328)	7.62	($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($40,425,660)
Net increase (decrease) in OPEB expense			($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($24,954,111)	($40,425,660)

EXHIBIT 7 (continued)
Schedule of Recognition of Changes in Total Net OPEB Liability

Increase (Decrease) in OPEB Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Investments

Reporting Date for Employer under GASB 75 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	Reporting Date for Employer under GASB 75 Year Ended June 30: 2018	2019	2020	2021	2022	2023	Thereafter
2018	$220,638	5.00	$44,128	$44,128	$44,128	$44,128	$44,128	$0	$0
Net increase (decrease) in OPEB expense			$44,128	$44,128	$44,128	$44,128	$44,128	$0	$0

Total Increase (Decrease) in OPEB Expense

Reporting Date for Employer under GASB 75 Year Ended June 30	Total Differences	Recognition Period (Years)	Reporting Date for Employer under GASB 75 Year Ended June 30: 2018	2019	2020	2021	2022	2023	Thereafter
2018	($189,929,689)		($24,909,984)	($24,909,984)	($24,909,984)	($24,909,984)	($24,909,984)	($24,954,111)	($40,425,660)
Net increase (decrease) in OPEB expense			($24,909,984)	($24,909,984)	($24,909,984)	($24,909,984)	($24,909,984)	($24,954,111)	($40,425,660)

EXHIBIT 8
OPEB Expense

Reporting Date for Employer under GASB 75	**June 30, 2018**
Measurement Date for Employer under GASB 75	**June 30, 2017**
Components of OPEB Expense	
1. Service cost	$66,840,919
2. Interest on the Total OPEB Liability	46,867,620
3. Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	0
4. Expensed portion of current-period benefit changes	0
5. Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	0
6. Expensed portion of current-period changes of assumptions or other inputs	(24,954,111)
7. Member contributions	0
8. Projected earnings on plan investments	(1,593,084)
9. Expensed portion of current-period differences between actual and projected earnings on plan investments	44,128
10. Administrative expense	0
11. Other	0
12. Recognition of beginning of year deferred outflows of resources as OPEB expense	0
13. Recognition of beginning of year deferred inflows of resources as OPEB expense	0
14. Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	0
OPEB Expense	**$87,205,472**

EXHIBIT 9

Schedule of Contributions

Year Ended June 30	Actuarially Determined Contribution*	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency / (Excess)	Covered-Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2017	$71,832,832	$33,122,887	$38,709,945	$497,200,588	6.66%

*The Actuarially Determined Contributions were calculated by the prior actuary, Buck Consultants.

Notes to Exhibit 9

Methods and assumptions used to establish "actuarially determined contribution" rates:	
Valuation date	Actuarially determined contribution rates are calculated as of June 30, one year prior to the end of the fiscal year in which contributions are reported
Measurement date	June 30, 2017
Actuarial cost method	Projected Unit Credit
Amortization method	30 Years, Open, Level Percent of Payroll
Remaining amortization period	30 Years as of July 1, 2017
Asset valuation method	The market value of assets as of the measurement date
Actuarial assumptions	The actuarial assumptions used to calculate the actuarially determined contribution rates can be found in the Report on the Actuarial Valuation of Post Retirement Benefits of the Vermont State Employees' Retirement System Prepared as of June 30, 2016 completed by Buck Consulting.

EXHIBIT 10
Actuarially Determined Contribution

	Year Ending June 30, 2017	% of Payroll	Year Ending June 30, 2018	% of Payroll
Normal Cost	$39,632,838	7.97%	$41,416,315	8.05%
Interest on Benefit Payments	($892,190)	-0.18%	($935,306)	-0.18%
Amortization of Unfunded Actuarial Accrued Liability	$33,092,184	6.66%	$34,279,239	6.66%
Total Actuarially Determined Contribution*	$71,832,832	14.45%	$74,760,248	14.53%
Total Projected Payroll	$497,200,588		$514,602,609	

*The Actuarially Determined Contributions were calculated by the prior actuary, Buck Consultants.

The Actuarially Determined Contribution, as currently calculated, is not sufficient to fully fund the Total OPEB Liability.

EXHIBIT 11
Statement of Net Fiduciary Position

	June 30, 2017
Total assets	$22,537,071
Total liabilities	(35,199)
Net position restricted for OPEB	**$22,501,872**

EXHIBIT 12

Schedule of Investment Returns

Year Ended June 30,	Annual Money Weighted Rate of Return, Net of Investment Expense
2017	6.5%

The above information is required beginning in 2017. A full 10-year trend will be compiled in future years.

EXHIBIT I

Summary of Participant Data	June 30, 2016
Retirees Enrolled in Health Care	
Number of retirees	4,590
Average age of retirees	70.1
Number of spouses and dependents (excluding children)	2,256
Average age of spouses	67.1
Surviving Spouses Enrolled in Health Care	
Number	205
Average age	75.3
Active Participants	
Number	8,813
Average age	46.3
Average years of service	11.4
Average expected retirement age	63.0

Exhibit II
Actuarial Assumptions and Methods

Data:	Detailed census data, claim experience, and summary plan descriptions for postretirement welfare benefits were provided and/or affirmed by the Vermont State Employees' Retirement System.
Actuarial Cost Method:	Entry-Age Normal, Level Percentage of Pay
Asset Valuation Method:	Market Value
Roll-forward Techniques:	The results as of June 30, 2017 were based on participant data as of June 30, 2016 projected forward to June 30, 2017 using standard actuarial techniques.
Measurement Date:	June 30, 2017
Actuarial Valuation Date:	June 30, 2016
Demographic Assumptions:	Some of the demographic assumptions used in this valuation (including mortality, disability, turnover, and retirement) are the same as used in the Vermont State Employees' Retirement System Actuarial Valuation and Review as of June 30, 2017 completed by Segal Consulting. These assumptions were reviewed as part of the pension valuation process, and we have no reason to doubt their reasonableness for use in this valuation. The remaining demographic assumptions, such as enrollment elections, percent married, and relative ages of spouses were based on the experience of the Plan and the experience of similar plans.
Discount Rate:	3.58% based on the short-term bond rate.
Payroll Increase Rate:	3.50%

Salary Increase Rate:

Age	Annual Rate of Salary Increase (%)
25	6.21%
30	5.66%
35	5.26%
40	4.92%
45	4.36%
50	3.70%
55	3.50%
60	3.50%

Mortality Rates:

Death in Active Service:

- Groups A/F/F*/DC 101% of RP-2014 blended 30% Blue Collar Employee, 70% Healthy Employee with generational projection using Scale SSA-2017.
- Group C RP-2014 Blue Collar Employee with generational projection using Scale SSA-2017.
- Group D RP-2014 Healthy Employee with generational projection using Scale SSA-2017.

Healthy Post-retirement:

- Groups A/F/F*/DC 101% of RP-2014 blended 30% Blue Collar Annuitant, 70% Healthy Annuitant with generational projection using Scale SSA-2017.
- Group C RP-2014 Blue Collar Annuitant with generational projection using Scale SSA-2017.
- Group D RP-2014 Healthy Annuitant with generational projection using Scale SSA-2017.

Disabled Post-retirement:

- All Groups RP-2014 Disabled Mortality Table with generational projection using Scale SSA-2017.

The tables with the generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the Plan as of the measurement date. The mortality tables were then adjusted to future years using a generational projection with Scale SSA-2017 to reflect future mortality improvement.

Separation from Service before Retirement (Due to Withdrawal and Disability):

Representative values of the assumed annual rates of withdrawal and disability are as follows:

Rate (%)

	Withdrawal*			Disability**	
	Groups A/D/F/F*/DC	Group C			
Age	Male/Female	Male	Female	Groups A/D/F/F*/DC	Group C
25	4.91%	4.32%	8.64%	0.02%	0.08%
30	3.93	4.32	8.64	0.02	0.10
35	3.28	4.32	8.64	0.03	0.13
40	3.04	N/A	N/A	0.04	0.20
45	2.69	N/A	N/A	0.06	0.32
50	2.25	N/A	N/A	0.11	0.55
55	1.83	N/A	N/A	0.18	0.91
60	3.90	N/A	N/A	0.28	1.46

*Withdrawal rates are increased during the first 10 years of service.

**All DC disabilities are assumed to be “non-duty”.

Retirement Rates: Once eligible for a retirement benefit under the pension plan (Group A: age 65 with 5 years of service, age 62 with 20 years of service, or any age with 30 years of service; Group C: age 55 or age 50 with 20 years of service; Group D: age 55 with 5 years of service or any age with 30 years of service; Group F: age 62, age 55 with 5 years of service, or any age with 30 years of service; Group F* and DC: age 65, 87 points, or age 55 with 5 years of service), the following rates apply:

	Retirement Group F/F*/DC				
Age	**Male**	**Female**	**Age**	**Male**	**Female**
50	16.0%	6.0%	60	5.6%	5.6%
51	16.0	8.0	61	11.2	11.2
52	8.0	9.0	62	22.4	22.4
53	8.0	9.0	63	17.5	14.0
54	8.0	10.0	64	17.5	14.0
55	4.0	5.0	65	25.0	20.0
56	3.4	4.2	66	15.0	15.0
57	4.5	5.6	67	17.5	17.5
58	5.0	6.3	68	17.5	17.5
59	5.6	5.6	69	20.0	20.0
			70	100.0	100.0

* All Group A, C, and D members are assumed to retire when first eligible.

Missing Participant Data: A missing census item for a given participant was assumed to equal the average value of that item over all other participants of the same status for whom the item is known.

Participation and Coverage Election: 80% of active employees eligible to retire and receive subsidized postretirement welfare coverage were assumed to participate in the plan. 70% of terminated vested participants are assumed to elect coverage upon receiving pension benefits. Deferred pension benefits are assumed to commence at age 50 for Group C and age 55 for Group F* and DC Plan participants.

100% of eligible future retirees are assumed to elect life insurance upon retirement. 65% of non-DC Plan current retirees are assumed to have life insurance coverage. Life insurance coverage for current DC retirees is based on the data provided.

35% of eligible future retirees covering a spouse are assumed to elect the Premium Reduction Option. No terminated vested participants were assumed to elect the Premium Reduction Option. Current retiree Premium Reduction Option status was based on the provided demographic data.

Dependents: Demographic data was used for spouses of current retirees when available. For future retirees and current spouses for which information is not available, spouse assumed to be three years younger than retiree. Of those future retirees who elect to continue their health coverage at retirement, 60% of males and 50% of females were assumed to have an eligible spouse who also opts for health coverage at that time. Spouses of retirees electing PRO are assumed to elect coverage for their lifetime. Spouses of retirees not electing PRO are assumed to drop coverage upon death of retiree.

Per Capita Cost Development: Per capita claims costs were based on the monthly required premium equivalents as of January 1, 2017 calculated by Milliman. Premiums for Total Choice and Select Care POS were weighted by actual retiree and dependent enrollment, separately for non-Medicare and Medicare. Premiums were trended to the midpoint of the valuation year at assumed trend rates. Actuarial factors were then applied to the weighted average cost to estimate individual retiree and spouse costs by age and by gender.

Per Capita Health Costs: Medical and prescription drug claims costs for the year beginning July 1, 2017, including administrative fees, are shown in the table below for retirees and for spouses at selected ages. These costs are net of deductibles and other benefit plan cost sharing provisions.

	Medical & Prescription Drug			
	Retiree		Spouse	
Age	Male	Female	Male	Female
50	$8,703	$9,913	$6,079	$7,960
55	10,336	10,671	8,135	9,213
60	12,275	11,502	10,890	10,686
64	14,082	12,202	13,747	12,027
65	4,907	4,171	4,907	4,171
70	5,687	4,495	5,687	4,495
75	6,129	4,838	6,129	4,838

Administrative Expenses An additional administrative expense load of 10% is added to death benefit claims.

Health Care Cost Trend Rates: Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. The rates shown below are "net" and are applied to the net per capita costs shown above. The trend shown for a particular plan year is the rate that is applied to that year's cost to yield the next year's projected cost.

	Rate (%)	
Year Ending June 30,	**Pre-Medicare Health Costs**	**Medicare Health Costs**
2018	7.50	8.00
2019	7.25	7.65
2020	7.00	7.30
2021	6.75	6.95
2022	6.50	6.60
2023	6.25	6.25
2024	6.00	5.90
2025	5.75	5.55
2026	5.50	5.20
2027	5.25	4.85
2028	5.00	4.50
2029	4.75	4.50
2030+	4.50	4.50

The trend rate assumptions were developed using Segal's internal guidelines, which are established each year using data sources such as the 2018 Segal Health Trend Survey, internal client results, trends from other published surveys prepared by the S&P Dow Jones Indices, consulting firms and brokers, and CPI statistics published by the Bureau of Labor Statistics.

Retiree Contribution Increase Rate: Retiree contributions were assumed to increase with health trend. Retiree contribution rates were based on premiums effective January 1, 2017, trended to the valuation date. Premiums for Total Choice and Select Care POS were weighted by actual retiree and dependent enrollment, separately for non-Medicare and Medicare.

Health Care Reform Assumption	The Plan is assumed to be in compliance with the Patient Protection and Affordable Care Act (PPACA) and the Health Care and Education Reconciliation Act (HCERA) of 2010 as of the valuation date. The valuation includes the projected effect of the Act's provision which imposes an excise tax on high cost employer-sponsored health coverage beginning in 2020. The excise tax limit is assumed to increase by 2.5% each year after 2018.
Assumption Changes since Prior Valuation:	The discount rate was increased from 2.85% to 3.58%.

Exhibit III
Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Eligibility:

Group A: Employees in active service as of June 30, 1981 and elected to continue to make contributions, or were hired between July 1, 1981 and June 30, 1984 and elected to enroll in Group A. Closed to new enrollment.

- Retirement: Attainment of age 55 with 5 years of service or any age with 30 years of service.

Group C: State police officers and public safety employees assigned to law enforcement duties.

- Retirement: Attainment of age 55, age 50 with 20 years of service, or any age with 30 years of service.
- Terminated Vested: Participants who terminate with 20 or more years of service can receive medical benefits upon receiving DB pension benefits.

Group D: Supreme court justices, and superior and district court judges. Probate judges appointed prior to July 1, 1987 are also covered by this plan.

- Retirement: Attainment of age 55 with 5 years of service or any age with 30 years of service.

Group F: State employees hired after January 1, 1991 and before July 1, 2008

- Retirement: Attainment of age 55 and 5 years of service or any age with 30 years of service.
- Terminated Vested: Not eligible

Group F*: State employees hired on or after July 1, 2008

- Retirement: Attainment of age 55 and 5 years of service
- Terminated Vested: 20 or more years of service can receive medical upon receiving DB pension benefits

Defined Contribution (DC) Pension: Exempt state employees.

- Retirement: Attainment of age 55 and 5 years of service.
- Terminated Vested: 20 or more years of service can receive medical upon receiving DC pension benefits

Non-Duty Disability Medical Benefits: Not available to DC pension participants. 5 years of service for all other groups.

Life Insurance Benefit: 20 or more years of continuous service (no terminated vested benefits for life insurance)

Benefit Types:	Medical and prescription drug coverage is provided for all retirees. Life insurance is provided for all retirees. Retirees pay the full cost for dental benefits.
Duration of Coverage:	Lifetime.
Spousal Benefits:	Same benefits as for retirees except no life insurance.
Spousal Coverage:	Lifetime.

Retiree Contributions: Retirees and spouses pay premium costs in excess of the VSERS subsidy.

	Subsidy
Groups A, C, D, F	80%
Group F* and Defined Contribution (hired July 1, 2008 or later):	
Less than 10 years of service	0%
10-14 years of service	40%
15-19 years of service	60%
20+ years of service	80%

Premium Reduction Option: Participants in Groups A, C, D, F, or F* retiring on or after January 1, 2007 with a VSERS premium subsidy have a one-time option to reduce the VSERS subsidy percentage during the retiree's life so that a surviving spouse may continue to receive the same VSERS subsidy for the spouse's lifetime. If the retirees elects the joint and survivor pension option but not the Premium Reduction Option, spouses are covered for the spouse's lifetime but pay 100% of the plan premium after the retiree's death.

This option is not available to Defined Contribution participants.

Benefit Descriptions:

Medical	**TotalChoice Plan**	**SelectCare POS Plan**	
		In-Network	Out-of-Network
Annual deductible	$300 per person, $600 per family	None	$500 per person, $1,000 per family
Maximum annual copays (after deductible is met)	$750 per person, $2,250 per family	None	$2,000 per person, $6,000 per family
Coinsurance	80%	100%	70%
Prescription Drugs			
Annual deductible	$25 per person, $75 per family		
Coinsurance			
Generic	10%		
Preferred Brand	20%		
Non-Preferred Brand	40%		
Annual maximum out-of-pocket	$775 per covered member		

Life Insurance	$10,000 for retiree only

Plan Changes since Prior Valuation: None.

Exhibit IV
Definition of Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future; (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; (c) Retirement rates — the rate or probability of retirement at a given age; (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Total OPEB Liability:	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.
Service Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.
Actuarially Determined Contribution:	A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available.
Valuation Date:	The date at which the actuarial valuation is performed
Covered Employee Payroll:	The payroll of the employees that are provided OPEB benefits

Discount Rate:	The single rate of return, that when applied to all projected benefit payments results in an actuarial present value that is the sum of the following: (1) the actuarial present value of projected benefit payments projected to be funded by plan assets using a long term rate of return, and (2) the actuarial present value of projected benefit payments that are non included in (1) using a yield or index rate for 20 year tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher
Entry Age Actuarial Cost Method:	An actuarial cost method where the present value of the projected benefits for an individual is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age
Healthcare Cost Trend Rates:	The rate of change in per capita health costs over time
Net OPEB Liability:	The Total OPEB Liability less the Plan Net Fiduciary Position
Plan Net Fiduciary Position:	Market Value of Assets
Real Rate of Return:	The rate of return on an investment after removing inflation
Measurement Date:	The date at which the net OPEB liability is measured
OPEB Expense:	Expense arising from certain changes in the net OPEB liability or total OPEB liability

Exhibit V
Accounting Requirements

The Governmental Accounting Standards Board (GASB) issued Statement Number 74 – *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,* and Statement Number 75 – *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.* Under these statements, all state and local government entities that provide other post-employment benefits (OPEB) are required to report the cost of these benefits on their financial statements. The accounting standards supplement cash accounting, under which the expense for postemployment benefits is equal to benefit and administrative costs paid on behalf of retirees and their dependents (*i.e.*, a pay-as-you-go basis).

The statements cover postemployment benefits of health, prescription drug, dental, vision and life insurance coverage for retirees; long-term care coverage, life insurance and death benefits that are *not* offered as part of a pension plan; and long-term disability insurance for employees. The benefits valued in this report are limited to those described in Exhibit III of Section 3, which are based on those provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits is not limited by legal or contractual limits on funding the plan unless those limits clearly translate into benefit limits on the substantive plan being valued.

The total cost of providing postemployment benefits is projected, taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions. These assumptions are summarized in Exhibit II of Section 3. This amount is then discounted to determine the Total OPEB Liability. The Net OPEB Liability (NOL) is the difference between the Total OPEB Liability and market value of assets in the Plan, called the Net Plan Fiduciary Position.

Once the NOL is determined, the Annual OPEB Expense is determined as the change in NOL from the prior year with deferred recognition of certain elements. In addition, Required Supplementary Information (RSI) must be reported, including historical information about the Net OPEB liability and the Contributions made to the Plan. Exhibits IV of Section 3 contain a definition of terms as well as more information about GASB 74/75 concepts.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short-term volatility in accrued liabilities and the actuarial value of assets, if any.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.