Commonwealth of Pennsylvania Retired Pennsylvania State Police Program

January 1, 2015 Actuarial Valuation Report

Prepared by Deloitte Consulting LLP

August 2015

Contents

Actuarial Valuation Opinion

This report presents results of the actuarial valuation of the Commonwealth of Pennsylvania's Retired Pennsylvania State Police Program ("the Plan" or "RPSPP") as of January 1, 2015. In our opinion, this report is complete and accurate and represents fairly the actuarial position of the Plan for the purposes stated herein.

The Commonwealth of Pennsylvania provided the participant data, financial information and plan descriptions used in this valuation. The actuary has analyzed the data and other information provided for reasonableness, but has not independently audited the data or other information provided. The actuary has no reason to believe the data or other information provided is not complete and accurate and knows of no further information that is essential to the preparation of the actuarial valuation.

Actuarial information under Government Accounting Standards Board Statement No. 45 (GASB 45) is for purposes of fulfilling employer financial accounting requirements. The results have been made on a basis consistent with our understanding of GASB 45 and are based upon assumptions prescribed by the Commonwealth of Pennsylvania. Determinations for purposes other than meeting employer financial accounting requirements may be significantly different from the results reported herein.

In our opinion, all costs, liabilities, rates of interest, and other factors underlying these actuarial computations have been determined on the basis of actuarial assumptions and methods that are each reasonable (or consistent with authoritative guidance) for the purposes herein taking into account the experience of the Plan and future expectations and that, when combined, represent our best estimate of anticipated experience under the Plan.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operations of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in program provisions or applicable law.

Our scope did not include analyzing the potential range of such future measurements, and we did not perform that analysis.

The undersigned with actuarial credentials collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report was prepared solely for the benefit and internal use of the plan sponsor. This report is not intended for the benefit of any other party and may not be relied upon by any third party for any purpose, and Deloitte Consulting accepts no responsibility or liability with respect to any party other than the plan sponsor.

Any tax advice included in this written or electronic communication was not intended or written to be used, and it cannot be used by the taxpayer, for the purpose of avoiding any penalties that may be imposed by any governmental taxing authority or agency.

To the best of our knowledge, no employee of the Deloitte U.S. Firms is an officer or director of the employer. In addition, we are not aware of any relationship between the Deloitte U.S. Firms and the employer that may impair or appear to impair the objectivity of the work detailed in this report.

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Executive Summary

Governmental Accounting Requirement and Report Purposes

The Governmental Accounting Standards Board released the Statement of Governmental Accounting Standards No. 43 ("GASB 43") and No. 45 ("GASB 45") in 2004. These statements require trusts (GASB 43) and employers (GASB 45) to accrue the cost of post-employment benefits other than pensions while eligible employees are providing services to the employer. The Commonwealth of Pennsylvania ("the Commonwealth") adopted GASB 45 for the fiscal year beginning July 1, 2007.

The purposes of this actuarial valuation report are to: 1) measure the Plan's accrued liabilities and normal cost, 2) provide GASB 45 disclosure information for the Commonwealth's financial reporting, and 3) project expected cash flows (pay-as-you-go costs).

Summary of Results

The key measures for the January 1, 2015 actuarial valuation are:

- The January 1, 2015 Unfunded Actuarial Accrued Liability (UAAL) is $3.45 billion.
- The Annual Required Contribution (ARC) for Fiscal Year 2015 is $0.24 billion, consisting of:
  - A Normal Cost of $0.09 billion, approximately 22.3% of covered payroll, and
  - An amortization cost of $0.15 billion, approximately 39.3% of covered payroll.

  Under governmental accounting standards, the ARC is not required to be funded but will be a component of the retiree health benefit expense recorded in the Commonwealth's financial statements.
- As of January 1, 2015, the funded ratio for the Plan was 2.3%, given the Commonwealth's current funding policy (as described below).

Funding Policy

The Commonwealth created the OPEB (Other Postretirement Employee Benefits) Investment Pool, a Trust Equivalent Arrangement, during the fiscal year ended June 30, 2008. The Commonwealth plans to contribute $1 million annually commencing in the fiscal year beginning July 1, 2016 until assets cover the present value of future benefits, subject to evaluation annually.

RPSPP employer contribution requirements are established within collective bargaining agreements. During the fiscal year ended June 30, 2015 employing agencies contributed $850 for each current RPSPP eligible active employee per biweekly pay period to fund the RPSPP. RPSPP plan members are not required to make contributions.

Background and Comments

Overview of Plans

The Commonwealth sponsors the Retired Pennsylvania State Police Program (RPSPP) for eligible retirees and their dependents to receive subsidized health coverage for the retiree's lifetime.

Changes from the Previous Actuarial Valuation

For the January 1, 2015 actuarial valuation, the results were higher to what was projected based on the previous actuarial valuation performed by the prior actuary. In total, there was an increase in Actuarial Accrued Liability of $0.1 billion (4%) compared to expectation. The increase in liability was due to the following:

- Actuarial loss of $0.1 billion (4%) due to the demographic changes, data corrections, and plan experience different than expected;
- Actuarial loss of $0.2 billion (6%) due to assumption changes, including actuarial cost method, discount rate, coverage election, per capita claims cost, excise tax, and trend rates (additional details can be found in Appendix C and Appendix D);
- Actuarial gain of $0.2 billion (6%) due to differences in methodologies and valuation software from those used by the prior actuary.

Health Care Reform

The Patient Protection and Affordable Care Act ("PPACA") was signed into law on March 23, 2010. The primary objective of the act is to increase the number of Americans with health insurance coverage. There are several provisions within PPACA with potentially significant short- and long-term cost implications for employers. The applicable provisions of PPACA were first accounted for in the July 1, 2010 valuation. There have been no changes to the provisions determined to be applicable to this valuation; however, some methods and assumptions have changed that were used to value these provisions. In future years, there may continue to be increased cost impact to the extent the health & welfare program experiences increased utilization due to these changes, all of which are assumed to be in place indefinitely.

The provisions of PPACA considered are as follows:

- Prohibiting lifetime and annual limits on the dollar value of coverage for "essential health benefits"
- Increasing the dependent child age limit to age 26
- Elimination of cost sharing for in-network preventive services
- Reflecting manufacturer discounts available to certain Medicare beneficiaries receiving applicable covered Part D drugs (mostly brand) while in the coverage gap
- Transitional reinsurance fee
- Out-of-pocket limit includes both medical and Rx expenses
- Excise tax on "Cadillac Plans" effective in 2018

Actuarial Methods and Assumptions

The Commonwealth of Pennsylvania State Employees' Retirement System (SERS) performs experience studies periodically to determine reasonable and appropriate economic and demographic assumptions for purposes of valuing the defined benefit pension plan. The most recent SERS experience study covered the years 2006 through 2010 and was presented to the State Employees' Retirement Board in January 2011. The approved recommendations from that study were used to determine the assumptions for this valuation, where applicable. Consistent with prior valuations, these demographic assumptions assume beginning of year decrements (retirement, withdrawal, death, disability, etc.). In addition, Deloitte periodically reviews actuarial assumptions only applicable to the postretirement medical plan outside of the experience study, such as medical trend rates and age-graded medical rates.

The actuarial methods and assumptions are described in the appendices of this report.

Final Disclosures

Most values reported here are final amounts for disclosures in the Commonwealth's financial statements; however, amounts related to the Commonwealth benefit payments for Fiscal Year 2014/2015 and 2015/2016 are currently based on estimated benefit payments. The Commonwealth's final disclosures will be updated to reflect the actual benefit payments during the fiscal year.

Summary of Actuarial Valuation Results

This section provides a summary of the actuarial valuation results. All information is provided as of the measurement date except for GASB 45 disclosure information. GASB 45 disclosure information is shown as of the end of the Fiscal Year to reflect when it will actually be disclosed. All liabilities are net of expected retiree contributions.

*(all dollar amounts are in thousands)**		January 1, 2015
a. Actuarial Accrued Liability		
(1) Active Participants	$	1,287,554
(2) Retired Participants**		2,243,461
(3) Total	$	3,531,015
b. Actuarial Value of Assets***	$	80,217
c. Unfunded Actuarial Accrued Liability (UAAL): (a) - (b)	$	3,450,798
d. Funded Ratio: (b) / (a)		2.3%
e. UAAL as a Percentage of Covered Payroll: (c) / (l)		875.1%
f. Participant Counts		
(1) Active Participants		4,253
(2) Retired Participants**		4,511
(3) Total		8,764

*(all dollar amounts are in thousands)**		June 30, 2015		June 30, 2016
g. Annual Required Contribution (ARC) at Year End	$	242,912	$	253,227
h. Annual OPEB Cost at Year End	$	246,653	$	257,895
i. Commonwealth Contributions	$	82,020	$	112,402
j. Increase in Obligations for Retiree Health Benefits: (h) - (i)	$	164,633	$	145,493
k. Obligations for Retiree Health Benefits				
(1) Beginning of Year	$	664,400	$	829,033
(2) End of Year: (k.1) + (j)	$	829,033	$	974,526
l. Covered Payroll	$	394,325	$	403,196

* Totals may not add due to rounding
** Retired participants include retirees and surviving spouses
*** Market Value of Assets on January 1, 2015

Development of Unfunded Actuarial Accrued Liability

This section develops the Unfunded Actuarial Accrued Liability (UAAL), which is the actuarial accrued liability net of the actuarial value of plan assets. The actuarial accrued liability is the portion of the present value of future benefits (PVFB) accrued to date. The present value of future normal costs represents the portion of the PVFB expected to accrue in the future, based on the current population.

*(all dollar amounts are in thousands)**		January 1, 2015
a. Present Value of Future Benefits		
(1) Active Participants	$	2,383,637
(2) Retired Participants**		2,243,461
(3) Total	$	4,627,098
b. Total Present Value of Future Normal Costs	$	1,096,083
c. Actuarial Accrued Liability: (a) - (b)	$	3,531,015
d. Actuarial Value of Assets	$	80,217
e. Unfunded Actuarial Accrued Liability (UAAL): (c) - (d)	$	3,450,798

* Totals may not add due to rounding

** Retired participants include retirees and surviving spouses

Determination of Annual Required Contribution

GASB 45 requires the disclosure of the annual post-employment benefits other than pensions (“OPEB”) cost. A component of the annual OPEB cost is the Annual Required Contribution. The following is a brief explanation of the components of the Annual Required Contribution:

- Normal Cost: The portion of the Total Present Value of Future Benefits attributed to employee service during the current fiscal year by the actuarial cost method.

- Amortization Payments: Open, 30-year, amortization of the Unfunded Actuarial Accrued Liability as a level percent of payroll.

- Interest to End of Year: The Annual Required Contribution is determined as a year-end value. The Normal Cost and Amortization Payments are determined at the valuation date and have a full year of interest applied to determine the end of year value. The Annual Required Contribution is compared to the plan contributions (with interest) made during the year to determine the increase in the Net OPEB Obligation.

The tables on the next page present the Annual Required Contribution development for the fiscal years ending June 30, 2015 and June 30, 2016.

Annual Required Contribution for Fiscal Year Ending June 30, 2015

*(all dollar amounts are in thousands)**		June 30, 2015
a. Normal Cost**	$	83,717
b. Amortization of UAAL**	$	149,124
c. Interest to End of Year*** [(a) + (b)] x 5.25% + (e) x [5.25% / 2]	$	10,071
d. Annual Required Contribution as of June 30, 2015	$	242,912
e. Expected Benefit Payment	$	(82,020)

* Totals may not add due to rounding
** If Normal Cost and Amortization of Unfunded AAL are expressed on an end of year basis, their values are $88 million and $155 million.

*** Includes interest on expected benefit payments made throughout the year

Annual Required Contribution for Fiscal Year Ending June 30, 2016

*(all dollar amounts are in thousands)**		June 30, 2016
a. Normal Cost**	$	86,270
b. Amortization of UAAL**	$	157,129
c. Interest to End of Year*** [(a) + (b)] x 5.25% + (e) x [5.25% / 2]	$	9,828
d. Annual Required Contribution as of June 30, 2016	$	253,227
e. Expected Benefit Payment	$	(112,402)

* Totals may not add due to rounding
** If Normal Cost and Amortization of Unfunded AAL are expressed on an end of year basis, their values are $91 million and $162 million.

*** Includes interest on expected benefit payments made throughout the year

Actuarial Experience

Actuarial gains and losses arise from experience different from that previously assumed, changes in actuarial assumptions and methods, and changes in program provisions.

*(all dollar amounts are in thousands)**

a. Unfunded liability as of July 1, 2013		$ 3,118,710
b. Normal Cost for FY 2013/2014	$ 78,880	
c. Expected Benefit Payments for FY 2013/2014	$ (88,650)	
d. Interest to July 1, 2014**	$ 149,780	
e. Expected unfunded liability as of July 1, 2014		$ 3,258,720
f. Normal Cost for July 1, 2014 to January 1, 2015	$ 39,440	
g. Expected Benefit Payments for six-month period	$ (45,910)	
h. Interest to January 1, 2015**	$ 77,786	
i. Contribution Receivable as of January 1, 2015	$ 0	
j. Expected unfunded liability as of January 1, 2015		$ 3,330,037
k. Increase (decrease) in plan liability due to plan change	$ -	
l. Increase (decrease) in plan liability due to assumption change	$ 195,974	
m. Increase (decrease) in plan liability due to differences in methodologies and valuation software from those used by prior actuary	$ (201,551)	
n. (Gain)/loss due to experience	$ 126,338	
o. Actual unfunded liability as of January 1, 2015		$ 3,450,798

* Totals may not add due to rounding

** Includes interest on unfunded liability, normal cost, and expected benefit payments

GASB Statement No. 45 Notes to the Financial Statements and Required Supplementary Information (RSI)

GASB Statement No. 45 requires disclosure of notes to the financial statements and required supplementary information that includes information shown in three schedules: the Schedule of Funding Progress (Table A), the Schedule of Employer Contributions (Table B), and the Development of Net OPEB Obligation (NOO) and Annual OPEB Cost (Table C).

The values shown in Table A are the final amounts for disclosure. Selected values in Tables B and C related to the Commonwealth's contribution (specifically, the employer benefit costs) are estimated and will change in the financial disclosures to reflect actual Commonwealth costs.

Table A – GASB No. 45 Schedule of Funding Progress

(all dollar amounts are in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded Actuarial Accrued Liability (UAAL) (c) (b) - (a)	Funded Ratio (d) (a) / (b)	Covered Payroll (e)	UAAL as a Percentage of Covered Payroll (f) [(b) - (a)] / (e)
7/1/2009*	$ 40,570	$ 2,104,240	$ 2,063,670	1.93%	$ 337,000	612%
7/1/2011*	59,900	2,492,280	2,432,380	2.40%	447,000	544%
7/1/2013*	69,480	3,188,190	3,118,710	2.18%	391,000	798%
1/1/2015	80,217	3,531,015	3,450,798	2.27%	394,325	875%

*Results prepared by prior actuary.

Table B – GASB No. 45 Schedule of Employer Contributions

(all dollar amounts are in thousands)

Year Ended	Annual OPEB Cost	Employer Contribution	Percentage Contributed	Net OPEB Obligation
June 30, 2008*	$ 120,290	$ 114,790	95%	$ 5,500
June 30, 2009*	143,390	54,570	38%	94,320
June 30, 2010*	151,730	62,020	41%	184,030
June 30, 2011*	159,450	66,350	42%	277,130
June 30, 2012*	175,240	68,780	39%	383,590
June 30, 2013*	208,550	68,380	33%	523,760
June 30, 2014*	217,490	76,850	35%	664,400
June 30, 2015**	246,653	82,020	33%	829,033
June 30, 2016**	257,895	112,402	44%	974,526

* Results prepared by prior actuary.
** Based on estimated employer contribution

Table C – Development of NOO and Annual OPEB Cost Pursuant to GASB No. 45

*(all dollar amounts are in thousands)**

Year Ended	Annual Required Contribution (ARC) (a)	Interest on NOO (b)	Amortization Factor (c)	ARC Adjustment with Interest (d)	Annual OPEB Cost (e) (a) + (b) - (d)	Employer Contribution (f)	Change in NOO (g) (e) - (f)	NOO Balance (h) Prior Year + (g)
June 30, 2008**	$ 120,290	$ -	N/A	$ -	$ 120,290	$ 114,790	$ 5,500	$ 5,500
June 30, 2009**	143,350	280	N/A	240	143,390	54,570	88,820	94,320
June 30, 2010**	151,150	4,720	N/A	4,140	151,730	62,020	89,710	184,030
June 30, 2011**	158,330	9,200	N/A	8,080	159,450	66,350	93,100	277,130
June 30, 2012**	174,230	13,160	N/A	12,150	175,240	68,780	106,460	383,590
June 30, 2013**	207,140	18,220	N/A	16,810	208,550	68,380	140,170	523,760
June 30, 2014**	215,560	24,880	N/A	22,950	217,490	76,850	140,640	664,400
June 30, 2015***	242,912	34,881	22.46	31,140	246,653	82,020	164,633	829,033
June 30, 2016***	253,227	43,524	22.46	38,856	257,895	112,402	145,493	974,526

* Totals may not add due to rounding
** Results prepared by prior actuary.
*** Based on estimated employer contribution

10-Year Projection of Employer Benefit Payments

Presented in this section are the projected employer benefit payments for the next ten years based on the program design effective in calendar year 2015. These projected benefit payments are based on the actuarial assumptions shown Appendix D. If actual experience differs from that expected by the actuarial assumptions, the actual employer benefit payments will vary from those presented below.

(all dollar amounts are in thousands)

Year	
2015	$ 109,240
2016	115,563
2017	123,560
2018	132,522
2019	142,806
2020	154,706
2021	167,754
2022	181,722
2023	196,326
2024	211,684

Post Retirement Benefit - Allocation

For internal reporting purposes, the Commonwealth requested an allocation of the Annual OPEB Cost by group. The Annual OPEB Cost for Fiscal Year Ending June 30, 2015 was allocated based on calendar year 2014 salary provided by the Commonwealth. The Annual OPEB Cost for Fiscal Year Ending June 30, 2016 was allocated based on estimated calendar year 2015 salary provided by the Commonwealth.

Post Retirement Benefit - Allocation of Annual OPEB Cost FY 2014-15
(all dollar amounts are in thousands)*

AOC Allocated to:		Active Employee Salary Total		Annual OPEB Cost
Government Activities				
Protection of persons and property	$	392,471	$	245,493
Business-type Activities				
State Stores Fund	$	1,854	$	1,160
Total	**$**	**394,325**	**$**	**246,653**

* Totals may not add due to rounding

Post Retirement Benefit - Allocation of Annual OPEB Cost FY 2015-16
(all dollar amounts are in thousands)*

AOC Allocated to:		Active Employee Salary Total		Annual OPEB Cost
Government Activities				
Protection of persons and property	$	401,301	$	256,683
Business-type Activities				
State Stores Fund	$	1,895	$	1,212
Total	**$**	**403,196**	**$**	**257,895**

* Totals may not add due to rounding

Appendices

Appendix A – Plan Participation Summary

The participant data used in the valuation was provided by the Commonwealth as of December 31, 2014. While the participant data was checked for reasonableness, the data was not audited, and the valuation results presented in this report are dependent upon the accuracy of the participant data provided. The table below and on the subsequent page present a summary of the basic participant information for the active and retired participants covered under the terms of the Plan.

a. Active Participants	
Total Counts	4,253
Average Age	40.16
Average Service	14.17
b. Retired Participants*	
Counts	
Under Age 65	1,867
Age 65 and over Non-Medicare	483
Age 65 and over Medicare	2,161
Total Counts	4,511
Average Age	65.10
Total Participants	8,764

Retired Participants by Medicare Status	Single Contracts	Family Contracts	Total
Under Age 65			
Non-Medicare	236	1,631	1,867
Age 65 and over			
Non-Medicare	97	386	483
Medicare Part A only	258	1,491	1,749
Medicare	157	255	412

*Retired participants include retirees and 125 surviving spouses with minimal liability.

Distribution of Service Groups by Age Groups

Age Group	Retired Participants	Active Participants - Years of Service 0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
<20	-	-	-	-	-	-	-	-	-
20-24	-	80	-	-	-	-	-	-	80
25-29	-	420	103	-	-	-	-	-	523
30-34	-	171	404	79	3	-	-	-	657
35-39	2	50	207	228	77	2	-	-	564
40-44	42	18	74	177	426	281	4	-	980
45-49	434	-	25	69	208	767	90	2	1,161
50-54	628	-	1	9	16	155	66	14	261
55-59	467	-	-	-	-	1	6	19	26
60-64	294	-	-	-	-	-	-	-	-
65-69	1,024	-	-	-	1	-	-	-	1
70-74	902	-	-	-	-	-	-	-	-
75-79	374	-	-	-	-	-	-	-	-
80-84	179	-	-	-	-	-	-	-	-
85-89	116	-	-	-	-	-	-	-	-
90+	49	-	-	-	-	-	-	-	-
Total	**4,511**	**739**	**814**	**562**	**731**	**1,206**	**166**	**35**	**4,253**

Appendix B – Program Provisions Summary

This section summarizes overall eligibility provisions for postretirement medical coverage and the various plans offered by the Commonwealth.

Note that in some cases the benefit programs offered to retirees are different based on date of retirement. The provisions shown below summarize the plan designs for the most recent retirees. All older "grandfathered" plan designs are not shown in this document.

Eligibility

Permanent enlisted employees of the Pennsylvania State Police who retire from the state and meet one of the following eligibility criteria are eligible to receive RPSPP benefits

- Superannuation retirement (excluding vestees) – age 50 (age 55 for employees subject to Act 120 of 2010) with three years of service;
- Retirement with at least 25 years of service;
- Retirement with at least 20 but less than 25 years of service, with at least 10 years of enlisted service with State Police (Military time, civilian service and service with another agency are not considered service with the State Police);
- Disability retirement – no service requirement.

Covered Family Members

Spouses and dependents are eligible for postretirement medical coverage while the retiree is alive. The PPACA, signed into law on March 23, 2010, increased the dependent child age limit to age 26 and applied to the Commonwealth effective January 1, 2011.

Cost Sharing

The Commonwealth pays the full cost of postretirement medical, dental, and Part B coverage while the retiree is alive.

Surviving spouses of deceased retirees may continue to participate in the plan (receive medical, Rx, and Part B coverage, but not dental) if they pay the full cost of the coverage.

Appendix B – Program Provisions Summary (cont.)

Medical Plans

The following tables list the medical plans offered to retirees and provide the basic benefit provisions.

Medical	Benefit Provisions		Eligibility
PPO	**In Network**		Annuitants retired from the Commonwealth and their eligible dependents
	Deductible	None	
	Out-of-Pocket Limit	None	
	Doctor Office Visits	PCP: $15 co-pay Specialist: $25 co-pay	
	Inpatient	Covered in full	
	Lifetime Maximum	None	
	Out of Network		
	Deductible	$250 Individual; $750 Family	
	Out-of-Pocket Limit	$1,500 Individual; $3,000 Family	
	Coinsurance	20%	
	Inpatient	20%	
	Lifetime Maximum	None	
Indemnity Plan (Major Medical)	(Combined with Facility and Professional program)		Annuitants retired from the Commonwealth and their eligible dependents
	Retired prior to 7/1/07		
	Deductible	$100 Individual $300 Family	
	Out-of-Pocket Limit (excluding deductible)	$380 Individual	
	Coinsurance	20%	
	Inpatient	20%	
	Lifetime Maximum	None	
	Retired on or after 7/1/07		
	Deductible	$250 Individual $750 Family	
	Out-of-Pocket Limit	$380 Individual	
	Coinsurance	20%	
	Inpatient	20%	
	Lifetime Maximum	None	
Indemnity Plan (Facility Program)	(Combined with Professional and Major Medical program)		Non-Medicare eligible annuitants retired from the Commonwealth and their non-Medicare eligible dependents
	Deductible	None	
	Out-of-Pocket Limit	N/A	
	Doctor Office Visits	N/A	
	Inpatient	Covered in full	
	Lifetime Maximum	N/A	

Appendix B – Program Provisions Summary (cont.)

Prescription Drug

The co-payments for all prescriptions covered by the plan are:

Retail: $5 Generic / $10 Preferred / $15 Non-Preferred

Mail Order: $10 Generic / $20 Preferred / $30 Non-Preferred

Medicare Part B Reimbursement

For employees hired on or after April 21, 1986, the Commonwealth reimburses Medicare Part B premium at $104.90 per month in 2015, which is consistent with the standard 2014 Medicare Part B premium.

Employees hired before April 21, 1986, were not required to enroll in Medicare.

Dental

The basic benefit provisions are:

- Basic diagnostic and preventive work, restorations, endodontics, periodontics, oral surgery and prosthodontics: 100% UCR
- Orthodontics: 70% UCR (dependents under age 19 only)
- Orthodontics lifetime maximum for dependent children: $1,250

Changes in Plan Provisions

None.

Appendix C – Actuarial Methods

Actuarial Cost Method

The Actuarial Cost Method used to determine the Actuarial Accrued Liability and the Annual Required Contribution is the Entry Age Normal (EAN) Level Percent of Pay method. This actuarial cost method is one of the GASB 45 approved methods. This method is in the family of future benefit cost methods, which requires an estimate of the projected benefit payable at retirement to determine costs and liabilities.

The Normal Cost (NC) is the annual allocation required for each participant from entry date to the assumed retirement date so that the accumulated allocation at retirement is equal to the liability for the projected benefit. The projected benefits are based on estimates of future years of service and projected health benefit costs. The normal cost is developed as a level percent of pay.

The Present Value of Future Benefits is equal to the value of the projected benefit payable at retirement discounted back to the participant's current age. Discounts include such items as interest and mortality. The present value of future normal cost allocations is equal to the discounted value of the normal costs allocated from the participant's current age to retirement age.

The difference between the Present Value of Future Benefits and the present value of future normal cost allocations represents the Actuarial Liability at the participant's current age.

The Actuarial Accrued Liability for participants currently receiving payments is calculated as the actuarial present value of future benefits expected to be paid. No normal cost is allocated for these participants.

Actuarial Value of Assets

The actuarial value of assets on the valuation date is the market value of assets plus contributions receivable.

Method Changes Since Prior Valuation

The Actuarial Cost Method was changed from Projected Unit Credit to Entry Age Normal (EAN) – Level Percentage of Pay since the prior valuation.

Appendix D – Actuarial Assumptions

Economic Assumptions

The economic assumptions were selected for consistency with SERS where applicable. The discount rate was selected based on the estimated long-term investment yield on the investments that are expected to be used to finance the payment of benefits. Since the benefits are assumed to be pay-as-you-go until the Trust Equivalent Arrangement is sufficient to fully fund the liability, a blend of the estimated long-term yield on the Trust Equivalent Arrangement and the Commonwealth's general assets were used.

Discount Rate	5.25%
Inflation[1]	2.75%
Payroll Growth[1]	3.05%
Salary Scale[1]	The career salary scale shown below includes average increases in the employee salary due to promotions and longevity growth. The average career salary growth is 3.05 percent per year. In addition, it is assumed that the salary schedules will increase by 3.05 percent per year. The scale below does not include the assumed 3.05 percent general salary increase.

Career Salary Scale for Members

Completed Years of Service	Annual Increase	Completed Years of Service	Annual Increase
1	8.00%	16	2.50%
2	6.00	17	2.40
3	4.50	18	2.30
4	4.00	19	2.20
5	3.75	20	2.10
6	3.50	21	2.00
7	3.25	22	1.90
8	3.20	23	1.80
9	3.15	24	1.70
10	3.10	25	1.60
11	3.00	26	1.50
12	2.90	27	1.40
13	2.80	28	1.30
14	2.70	29	1.25
15	2.60	30+	1.25

[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of December 31, 2013 and experience study presented to the Board in January 2011.

Appendix D – Actuarial Assumptions (cont.)

Demographic Assumptions

The demographic assumptions were selected for consistency with SERS where applicable. The retiree health specific assumptions were selected based on recent experience.

Mortality[1]

Pre-Retirement Mortality :

Age	Male	Female
20	0.04%	0.02%
25	0.04	0.02
30	0.05	0.02
35	0.06	0.03
40	0.08	0.04
45	0.12	0.06
50	0.22	0.09
55	0.27	0.14
60	0.32	0.24

Post Retirement Mortality:

RP-2000 Healthy Annuitant Mortality Table projected to 2008 and updated to reflect actual SERS experience through 2010. The table includes a margin for future improvement in life expectancy.

Disability Incidence[1]

Pre-Retirement Disability:

Age	Male	Female
25	0.02%	0.04%
30	0.07	0.09
35	0.12	0.16
40	0.19	0.21
45	0.33	0.33
50	0.46	0.50
55	0.60	0.63

Withdrawal[1]

Years of Service	Rate
0	15.0%
1	5.0
2	3.0
3	2.5
4	1.5
5	0.9
6	0.7
7	0.6
8	0.4
9	0.3
10+	0.2

[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of December 31, 2013 and experience study presented to the Board in January 2011.

Appendix D – Actuarial Assumptions (cont.)

<table>
<tr><td>Early Retirement[1]
(based on early retirement as defined by SERS; retirement prior to OPEB eligibility, as described above in Appendix B, will receive no post-retirement health benefit)</td><td>0.8% at each age</td></tr>
<tr><td>Normal Retirement[1]
(based on normal retirement as defined by SERS; retirement prior to OPEB eligibility, as described above in Appendix B, will receive no post-retirement health benefit)</td><td>State Police with less than 19 years of service
<table>
<tr><th>Age</th><th>Rate</th></tr>
<tr><td>50</td><td>7.0%</td></tr>
<tr><td>55</td><td>7.0</td></tr>
<tr><td>60</td><td>12.0</td></tr>
<tr><td>65</td><td>25.0</td></tr>
<tr><td>70</td><td>25.0</td></tr>
<tr><td>75</td><td>25.0</td></tr>
<tr><td>80</td><td>100.0</td></tr>
</table>
State Police with at least 19 years of service
<table>
<tr><th>Years of Service</th><th>Rate</th></tr>
<tr><td>19* – 23</td><td>5.0%</td></tr>
<tr><td>24*</td><td>15.0</td></tr>
<tr><td>25</td><td>50.0</td></tr>
<tr><td>26-29</td><td>20.0</td></tr>
<tr><td>30</td><td>30.0</td></tr>
<tr><td>31</td><td>20.0</td></tr>
<tr><td>32 – 34</td><td>40.0</td></tr>
<tr><td>35 – 39</td><td>50.0</td></tr>
<tr><td>40+</td><td>100.0</td></tr>
</table>
* State Police with 19 and 24 years of service at the beginning of the year are assumed to retire at the point they reach 20 and 25 years respectively during the year and to receive the Fraternal Order of Police (FOP) award.</td></tr>
<tr><td>Spouse Age Difference[1]</td><td>Females are assumed to be 2 years younger than males.</td></tr>
<tr><td>Participation Rate</td><td>100% of employees who currently participate in the active health plan are assumed to elect coverage at retirement.
Employees who are eligible for but currently opt out of active health coverage are excluded from the valuation.
Retirees who currently elect to waive their coverage are assumed to remain uncovered in the future.</td></tr>
<tr><td>Coverage Level Election Rates</td><td>Employees are assumed to maintain their current coverage election when they retire.
Current retirees are assumed to continue their current coverage election.</td></tr>
<tr><td>Surviving Spouse Continuing Coverage</td><td>45% of spouses are assumed to elect to continue coverage after the retiree's death.</td></tr>
</table>

[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of December 31, 2013 and experience study presented to the Board in January 2011.

Appendix D – Actuarial Assumptions (cont.)
Benefit Assumptions

Per Capita Claims Cost

The per capita claims costs used in the valuation were developed from the self-insured rates that represent the expected claims costs and administrative expenses for 2015 for each plan. These first-year rates are on a "net basis" – they reflect plan costs after reduction of total benefit costs for member cost-sharing (deductibles, coinsurance, co-pays, provider savings, Medicare, etc.). Future year per capita costs were projected by applying trend assumptions to the first year costs.

The 2015 rates (by plan, and coverage category) and the current enrollment mix by plan, age and gender were used to develop net rates by age band. Rates were age-graded using the retiree age and gender distribution, separately for the pre-65 and post-65 population. These age-graded rates are the basis for projecting the gross cost for each individual, before member contributions for coverage. Rates were developed separately for retirees and spouses to capture the expectation of some dependents for pre-65 retirees.

Since the "flat" rates are specific to the experience of the Commonwealth's retirees (i.e., not blended with employees) separately for non-Medicare and Medicare, age-graded claims are not necessary. However, due to the large number of non-Medicare retirees over age 65 and availability of sufficiently reliable data, age-graded claims costs were developed to project the increases in costs related to the average age of the retiree population increasing.

The table below provides a selection of calendar year 2015 per capita claims costs:

2015 Annual Per Capita Claims Costs

	Non-Medicare Eligible			
Age	**Retiree**	**Spouse**	**Medicare Part A Only**	**Medicare Part A & B**
45	$ 7,418	$ 10,683	N/A	N/A
50	8,839	12,104	N/A	N/A
55	10,802	14,067	N/A	N/A
60	13,109	16,374	N/A	N/A
64	15,145	18,410	N/A	N/A
65	15,596	15,596	$ 11,076	$ 8,493
70	18,615	18,615	12,725	9,186
75	21,980	21,980	14,246	9,766
80	25,442	25,442	15,481	10,187
85	28,861	28,861	16,175	10,373
90	31,848	31,848	16,349	10,338
95	33,644	33,644	15,768	10,101

The table below illustrates calendar year 2015 monthly "flat" net rates for each plan.

	Single	**Multi**
Non-Medicare		
Traditional	$794.38	$1,787.36
PPO	$627.17	$1,411.14

Medicare	**Single**	**Multi**
Traditional with Part A	$708.95	$1,417.90
Traditional with Part A&B	$322.40	$644.80
PPO with Part A	$708.95	$1,417.90
PPO with Part A&B	$322.40	$644.80

Expenses

Rates were developed to include administrative expenses as a component in the total rate.

Appendix D – Actuarial Assumptions (cont.)

Trend Rates

The trend rates illustrated below are used to project age-graded claims and flat rates into future years. Trend rates were developed based on the SOA-Getzen trend rate model version 2014_b. For the years 2015 through 2019, the rates are based on projections by the Congressional Budget Office. The SOA-Getzen model was then used to determine the trend rates beginning in 2020 and thereafter, based on the long-term inflation assumption and reasonable macro-economic assumptions for the growth of health care expenditures during this period relative to the general economy.

Year	Rate
2015	4.9%
2016	5.2%
2017	5.5%
2018	5.6%
2019	5.7%
2020	5.7%
2030	5.7%
2040	5.7%
2050	5.1%
2060	4.9%
2070	4.4%
2075+	4.0%

Excise Tax

Effective in the 2018 calendar year, an excise tax on “Cadillac Plans” will apply as a result of PPACA. HMOs and other healthcare insurers, who offer plans with a higher cost than the excise tax threshold, will be charged a 40% tax on the costs exceeding the threshold. Due to the expectation that the medical trend rate will significantly exceed inflation over the long-term, most retiree health plans will be affected by the excise tax at some point in the future. After adjusting the thresholds for the age and gender characteristics of the Commonwealth’s policy holders, however, the excise tax is projected to only have a minor impact on the liabilities.

Medicare Eligibility

Current non-Medicare retirees and spouses (if covered) over age 65 are assumed to remain non-Medicare eligible.

Current Medicare retirees and spouses (if covered) hired before April 21, 1986 are assumed to be eligible for Medicare Part A only.

Current non-Medicare retirees and spouses (if covered) under age 65 and hired before April 21, 1986 and all actives hired before April 21, 1986 are assumed to be split with 70% eligible for Medicare Part A only and 30% not eligible for Medicare. This is based on recent experience, which shows that 70% of pre-1986 hires are able to gain Medicare eligibility through a spouse or prior employment.

All other retirees and spouses (if covered) are assumed to be non-Medicare eligible prior to age 65 and Medicare eligible at age 65.

Appendix D – Actuarial Assumptions (cont.)

Coverage

Current retirees are assumed to remain in their currently elected plan.

Current employees are assumed to enroll at retirement in the same proportion as the current retiree mix. These proportions are established separately for non-Medicare and Medicare coverage.

The table below shows the enrollment percentage by plan and location.

	Retiree	Spouse
Non-Medicare		
Traditional	60.7%	43.7%
PPO	39.3%	56.3%
Medicare		
Traditional with Part A	50.8%	69.9%
Traditional with Part A&B	39.1%	15.2%
PPO with Part A	9.3%	13.7%
PPO with Part A&B	0.7%	1.3%

Assumption Changes Since Prior Valuation

The discount rate was changed from 4.75% to 5.25%

The coverage election assumption was changed from 15% of current and future retirees electing single coverage to be based on actual elections provided in the data.

Per capita claims cost were updated based on changes in the underlying claims over the past two years.

The excise tax is being explicitly valued; it was not previously valued.

The trend rate was changed to use updated assumptions for short-term trend based on CBO projections; for long-term trend using Getzen Model version 2014_b instead of version 11.1.

The eligibility for Medicare Part A only is being explicitly valued for future retirees and current non-Medicare retirees and spouses (if covered) under age 65 hired before April 21, 1986; previously, this sub group was assumed to be fully Medicare eligible.

Appendix E – Glossary

Below is a brief explanation of various terms used in this report.

- **Actuarial Accrued Liability (AAL).** The portion of the Present Value of Future Benefits that is attributed to accrued service as of the valuation date, based on the actuarial cost method.
- **Annual OPEB Expense.** The amount recognized by an employer in each accounting period for contributions to a defined benefit OPEB plan on the modified accrual basis of accounting.
- **Annual Required Contribution (ARC). The** employer's annual required contributions to an OPEB plan calculated in accordance with GASB 45.
- **Covered Payroll.** Annual compensation paid (or expected to be paid) to active employees covered by an OPEB plan, in aggregate.
- **Net OPEB Obligation (NOO).** The cumulative difference between the annual OPEB cost and employer contributions since the adoption date of GASB 45.
- **Normal Cost (NC).** The portion of the Total Present Value of Future Benefits attributed to employee service during the current fiscal year by the actuarial cost method.
- **Other Postemployment Benefits (OPEB).** Retiree health care benefits and post-employment benefits provided separately from a pension plan (excluding termination offers and benefits).
- **Present Value of Future Benefits (PVFB).** The value, as of the valuation date, of the projected benefits payable to all members for their accrued service and their expected future service, discounted to reflect the time value (present value) of money and adjusted for the probabilities of retirement, withdrawal, death and disability.
- **Unfunded Actuarial Accrued Liability (UAAL**). The portion of the Actuarial Accrued Liability that exceeds the current plan assets.