

## **State of Delaware**

Postretirement Health Plan Actuarial Valuation Report as of July 1, 2021

Produced by Cheiron December 2021

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#### Letter of Transmittal

December 14, 2021

Ms. Joanna Adams Pension Administrator Delaware Public Employees Retirement System 860 Silver Lake Boulevard, Suite 1 Dover, Delaware 19904

#### Dear Joanna:

As requested, we have performed an analysis of the Postretirement Health Plan provided by the State of Delaware as of July 1, 2021. The following report contains our findings and additional disclosures required by Government Finance Officers Association (GFOA) for excellence in financial reporting.

The purpose of this report is to present the annual Post-Employment Benefits (OPEB) actuarial valuation of the State of Delaware. This report is for the use of the State of Delaware and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

In preparing our report, we relied on information (some oral and some written) supplied by the State of Delaware. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Appendix A describes the participant data, assumptions, and methods used in calculating the figures throughout the report. Appendix B contains a summary of the substantive plan provisions based on documentation provided by and discussions with your office.

The results of this report are based on future experience conforming to the actuarial assumptions used. The results will change to the extent that future experience differs from the assumptions. Actuarial computations are calculated based on our understanding of GASB 74 and 75 and are for purposes of fulfilling employer financial accounting requirements. Determinations for purposes other than meeting employer financial accounting requirements may be significantly different from the results in this report.

This report does not reflect future changes in benefits, penalties or taxes, or administrative costs that may be required as a result of the Patient Protection and Affordable Care Act of 2010, related legislation, or regulations. This report does not contain any adjustments for the potential impact of COVID-19. We anticipate the virus will impact both mortality and claims in the short term, as well as potentially other demographic experience. However, the net impact is not determinable at this time.

Ms. Joanna Adams December 14, 2021 Page ii

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This actuarial report was prepared for the State of Delaware for the purposes described herein and for the use by the Plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Please do not hesitate to call should you have any questions.

Sincerely, Cheiron

Margaret A. Tempkin, FSA, MAAA

Principal Consulting Actuary

cc: Sean McNeeley

Jane Cole Lisa Elder

Khairat Makanjuola

Michael W. Schionning, FSA, MAAA Principal Consulting Actuary



#### SECTION I – SUMMARY

The State of Delaware has engaged Cheiron to provide an analysis of the Postretirement Health Benefit Plan's liabilities as of July 1, 2021. The primary purposes of performing this actuarial valuation are to:

- Determine the net other postemployment benefit (OPEB) liability of the retiree health benefit under GASB Statements 74 and 75 and the current funding strategy;
- Provide additional disclosures for financial statements; and
- Provide projections for contributions, benefits, assets, and Net OPEB Liability (NOL).

We have determined costs, liabilities, and trends for the substantive plan using actuarial assumptions and methods that we consider reasonable.

### GASB's OPEB Requirements

GASB's Statement 74 refers to the financial reporting for postemployment benefit plans other than pension plans, and Statement 75 refers to the employer accounting for these plans. Statement 74 is generally applicable where an entity has a separate trust or fund for OPEB benefits. The GASB No. 74 and 75 Statements were effective for the plan year ending June 30, 2017, and June 30, 2018, respectively. The GASB 74 and 75 valuation report was provided in a separate document.

### **Funding Policy**

The State of Delaware currently pays for its post-employment health benefits on a pay-as-you-go (PAYGo) basis. We further understand that there are some assets set aside in a dedicated Trust to cover this liability.



#### **SECTION I – SUMMARY**

#### Valuation Results

The table below presents the key results of the 2020 and 2021 valuations.

Table I-1 Summary of Key Valuation Results (\$ In Millions)										
Discount Rate		2.21%		2.16%						
	Ju	ly 1, 2020	Ju	ly 1, 2021						
Actuarial Liability (AL)	\$	9,877.2	\$	10,773.3						
Assets		464.4		650.3						
Unfunded Actuarial Liability (UAL)	\$	9,412.8	\$	10,123.0						
Fiscal Year Ending	June 30, 2021 Ju		Jun	une 30, 2022						
Annual Required Contribution (ARC)	\$	734.8	\$	784.3						
Actual / Expected Contribution		267.2		264.6						
Actual / Expected Net Benefit Payments		253.5		264.6						

The figures provided in this report are highly sensitive to the assumptions used.

The expected increase in liability during the year was \$438 million. The Plan also experienced an increase due to population changes of \$32 million as well as an increase due to the discount rate decrease from 2.21% to 2.16% of \$86 million. The Plan also experienced an increase due to the demographic decrement changes due to the experience study completed in September 2021 of \$340 million. The total increase in the actuarial liability was approximately \$896 million. More detail on the effects of these changes can be found in the valuation results section of this report.

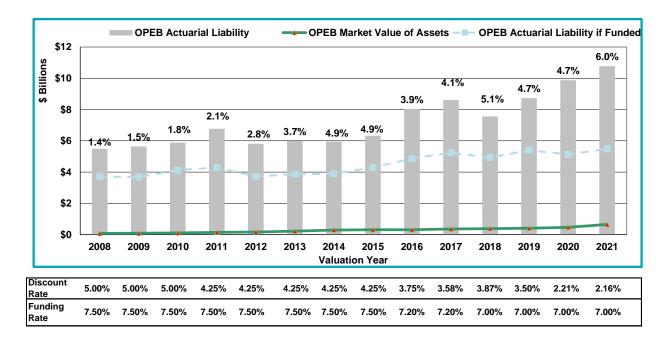


#### **SECTION I – SUMMARY**

#### Historical Trends

The chart below shows the historical trend of assets and the actuarial liability for the State of Delaware's Postretirement Health Plan. The first valuation complying with GASB 43 and 45 was performed in 2006. The reduction in actuarial liability in 2012 was primarily due to Plan changes. The increase in actuarial liability in 2016 was due to the demographic decrement changes from the 2015 experience study adopted in 2016 as well as the change in the discount rate from 4.25% to 3.75%. Starting in 2017, the discount rate follows the 20-year bond buyer rate. The increase in actuarial liability in 2021 was due to the demographic decrement changes from the 2021 experience study as well as reduction in discount rate from 2.21% to 2.16%. The percentages above the grey bars represent the ratio of the market value of assets over the actuarial liability.

The light blue dotted line represents the OPEB liability if the Plan's discount rate was based on the funding rate.

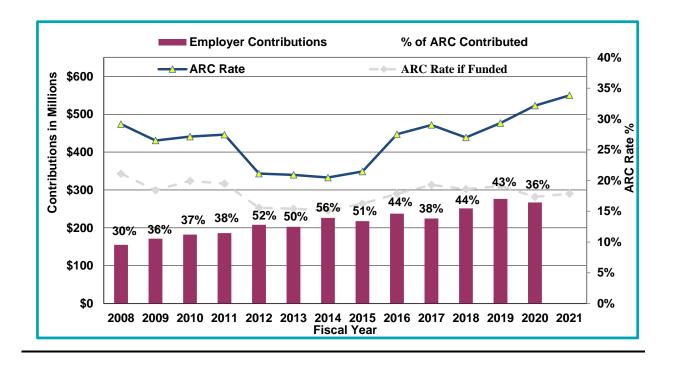




#### **SECTION I – SUMMARY**

This chart shows the historical trend of employer contributions and the annual required contribution (ARC) for the State of Delaware's Postretirement Health Plan. The ARC represents the normal cost plus a 30-year level percentage of pay amortization of the unfunded liability. The burgundy bars represent the employer contributions made during the year. The blue line with yellow triangles represent the ARC as a percentage of pay. The percentages above the burgundy bars represent the ratio of the actual contributions to the annual required contribution.

The light grey dotted line represents the ARC as a percentage of pay if the Plan's discount rate was based on the funding rate.

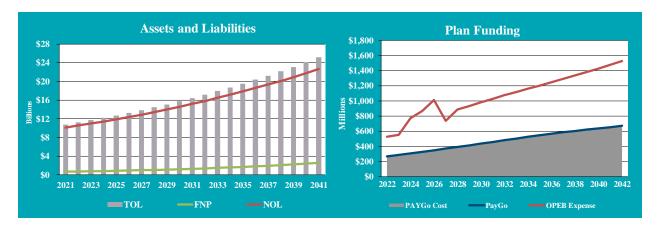




#### **SECTION I – SUMMARY**

### **Projected Trends**

Looking beyond 2021, the expense and liability on the financial statements increase under the PAYGo funding method, because the Plan is not funded. The charts below project the assets and liabilities and the funding costs for the next 20 years.



As the above chart on the left shows, the actuarial liability increases from \$10.8 billion to \$25.2 billion during the next 20 years. The red line on the same chart shows the expected net OPEB liability (NOL) appearing on the State's financial statements, per GASB No. 74 and No. 75, which increases from \$10.1 billion in 2021 to \$22.6 billion by the end of the 20-year period. The green line shows the assets increasing from \$650 million to \$2.5 billion assuming a 7.0% return on assets.

The chart on the right shows the projected annual costs. Benefit payments, net of retiree contributions, are shown by the grey area and increase from 11.4% of pay or \$265 million to 15.3% of pay or \$673 million. The blue line represents the State's assumed contributions. Under PAYGo funding they match the net benefit payments; the accounting expense shown by the red line, increases from 26.2% of pay or \$530 million in FY 2022 to 42.7% of pay or \$1.0 billion in FYE 2026 and then steadily increases from \$736 million to \$1.5 billion over the next 15 years. The expense is expected to jump up to the change in the unfunded liability if all assumptions are met. The actual expense will be very volatile due to the nature of a pay-as-you-go plan.



### **SECTION II – ASSETS**

The Plan's last valuation of liabilities was performed as of July 1, 2020. Table II-1 below shows the reconciliation of assets for the fiscal year. This section reconciles to the assets as of July 1, 2021 that were used to develop the FYE 2022 ARC.

Table II-1 Reconciliation of Assets	
(\$ in millions)	
Valuation Assets as of July 1, 2020	\$ 464.4
Contributions for Fiscal Year *	
State Contributions	\$ 267.0
Transfer from outside the system	0.2
Retiree Contributions	-
Total Contributions	\$ 267.2
Benefit Payments *	253.5
Expenses	0.1
Investment Earnings	172.3
Valuation Assets as of July 1, 2021	\$ 650.3

<sup>\*</sup> Contributions for benefits and expenses were routed through the Trust



#### **SECTION III – VALUATION RESULTS**

This section of the report calculates the current and expected future contribution requirements under the State's funding policy of pay as you go. Even though GASB 45 has been replaced by GASB 75, we will continue to calculate an ARC using the rules previously in effect with GASB 45. This valuation calculates the annual required contribution (ARC) for FYE 2022. Information about the actuarial liabilities of the Plan as of July 1, 2021, is shown in Table III-1 below.

Table III-1 Actuarial Liability Pay-As-You-Go Funding (2.16% assumed discount) (\$ in millions)										
	Eı	State mployees	Jı	ıdges		losed e Police		Open te Police		Total
Actives Retirees	\$	5,500.1 4,871.3	\$	3.6 6.8	\$	- 66.4	\$	189.6 135.4	\$	5,693.3 5,079.9
Total	\$	10,371.4	\$	10.4	\$	66.4	\$	325.0	\$	10,773.2
Assets*		625.3		1.0		4.0		20.0		650.3
UAL	\$	9,746.1	\$	9.4	\$	62.4	\$	305.0	\$	10,122.9

<sup>\*</sup>Assets allocated in proportion to liabilities

The Annual Required Contribution (ARC), under GASB 45, consists of two parts: (1) the *normal cost*, which represents the annual cost attributable to service earned in a given year, and (2) the 30-year open amortization of the unfunded actuarial liability (UAL). The rolling amortization method will never pay off the unfunded liability. For that reason, we do not believe that the ARC, as defined in GASB Statement No. 45, would constitute an actuarially sound funding policy, and would not satisfy the Actuarially Determined Contribution (ADC) definition, under GASB 75. This report shows both the ARC and projections of the State's actual contributions, using the State's funding policy of pay—as-you-go. Under the current funding method of PAYGo, the State pays for the benefits currently provided to existing retirees.

In Table III-2 below, we show the computed FY 2021-22 annual required contribution (ARC) under the State's funding policy and a 2.16% assumed discount rate.

Table III-2 Annual Required Contributions – FY2022 Pay-As-You-Go Funding (2.16% assumed discount) (\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\											
	State Employees		State Employees Judges		dges	Closed State Police		Open State Police			Fotal
Normal Cost	\$	480.3	\$	0.4	\$	-	\$	18.5	\$	499.2	
<b>UAL Amortization</b>		274.4		0.3		1.8		8.6		285.1	
Total	\$	<b>754.7</b>	\$	0.7	\$	1.8	\$	27.1	\$	784.3	



### **SECTION III – VALUATION RESULTS**

Table III-3 shows the employer contributions, benefit payments, assets, and NOL that we anticipate for the next 15 years under PAYGo Funding. In calculating the liabilities, we project these figures for the life of each existing participant.

Table III-3  Expected Contributions, Expected Net Benefit Payments,  Assets and NOL under PAYGo Funding  (\$ in millions)										
Fiscal Year Ending June 30,	Expected Contributions	Expected Net Benefit Payments	Expected Assets	Expected NOL						
2022	\$ 264.6	\$ 264.6	\$ 695.8	\$ 10,547.3						
2023	285.0	285.0	744.5	10,975.5						
2024	305.7	305.7	796.6	11,413.0						
2025	327.4	327.4	852.3	11,868.4						
2026	349.1	349.1	912.0	12,348.9						
2027	371.1	371.1	975.9	12,858.3						
2028	393.2	393.2	1,044.2	13,397.1						
2029	414.1	414.1	1,117.3	13,965.5						
2030	437.0	437.0	1,195.5	14,559.2						
2031	459.4	459.4	1,279.1	15,176.1						
2032	481.5	481.5	1,368.7	15,814.8						
2033	504.8	504.8	1,464.5	16,473.1						
2034	525.2	525.2	1,567.0	17,153.4						
2035	545.9	545.9	1,676.7	17,855.8						
2036	565.7	565.7	1,794.1	18,582.2						



#### SECTION III – VALUATION RESULTS

#### Reconciliation

Table III-4 provides an estimate of the major factors contributing to the change in liability since the last actuarial valuation report (AVR).

Table III-4 Reconciliation of Actuarial Liability (\$ in millions)										
	A I	Actuarial Accrued Liability ly 1, 2021		mal Cost 2 30, 2022	Annual Required Contribution June 30, 2022					
Expected Values for July 1, 2021 based on the 7/1/2020 AVR	\$	10,315.5	\$	483.9	\$	762.6				
Changes due to:										
Asset (Gain) / Loss		N/A		N/A		(4.3)				
Demographic (Gain) / Loss		32.3		2.2		0.9				
Health Cost Assumptions (Gain) / Loss		-		-		-				
Discount Rate (Gain) / Loss		85.7		4.7		2.4				
Other Assumptions (Gain) / Loss		339.7		8.4		22.7				
Total Changes	\$	457.7	\$	15.3	\$	21.7				
July 1, 2021 valuation results based on the 7/1/2021 AVR	\$	10,773.2	\$	499.2	\$	784.3				

Below is a brief description of each of the above components:

- Expected Values refer to the change that would have occurred had experience matched all the assumptions between July 1, 2020 and July 1, 2021.
- Asset changes refer the change in the expected market value to actual market value.
- *Demographic* changes refer to the change in actual current and potential future beneficiary data and elections from July 1, 2020 to July 1, 2021. There were more retirements than expected.
- Change in Health Cost Assumptions refers to the change in actual claim curves compared to the expected claims based on the prior year claims. The claim curves were trended based on the trends from the prior year's valuation.
- *Change in Discount Rate* refers to the increase in the liability is due to the decrease in the discount rate from 2.21% to 2.16%.
- *Other Assumption* changes refer to the demographic decrement changes due to the experience study adopted in October 2021



### **SECTION IV – SENSITIVITY**

The liabilities and ARC produced in this report are sensitive to the assumptions used. The tables below show the impact of a 1% increase or decrease in the health care trend rates on the actuarial liability, the ARC, and the net expected benefit payments, using the 2.16% discount rate, to provide some measure of sensitivity.

Table IV-1 Actuarial Liability As of July 1, 2021 Pay-As-You-Go Funding (2.16% assumed discount) (\$ in millions)									
Health Care Trend Rate	-1% Base 1%								
Actuarial Liability									
Actives	\$	4,890.5	\$	5,693.3	\$	6,568.9			
<u>Retirees</u>		4,480.2		5,079.9		5,816.8			
Total	\$	9,370.7	\$	10,773.2	\$	12,385.7			
Assets		650.3		650.3		650.3			
UAL	\$	8,720.4	\$	10,122.9	\$	11,735.4			

Table IV-2 Annual Required Contributions – FY2022 Pay-As-You-Go Funding (2.16% assumed discount) (\$ in millions)									
Health Care Trend Rate		-1%		Base	1%				
Normal Cost	\$	342.8	\$	499.2	\$	736.3			
UAL Amortization		245.6		285.1		330.5			
Total	\$	588.4	\$	784.3	\$	1,066.8			



#### **SECTION IV – SENSITIVITY**

The liabilities and ARC produced in this report are sensitive to the assumptions used. The tables below show the impact of a 1% increase or decrease in the discount rate on the actuarial liability, the ARC, and the net expected benefit payments, using the base case healthcare trends, to provide some measure of sensitivity.

Table IV-3 Actuarial Liability As of July 1, 2021 Pay-As-You-Go Funding (\$ in millions)									
Discount Rate	1.16% 2.16%					3.16%			
Actuarial Liability									
Actives	\$	6,934.7	\$	5,693.3	\$	4,728.2			
Retirees		5,871.5		5,079.9		4,451.6			
Total	\$	12,806.2	\$	10,773.2	\$	9,179.8			
Assets		650.3		650.3		650.3			
UAL	\$	12,155.9	\$	10,122.9	\$	8,529.5			

Table IV-4 Annual Required Contributions – FY2022 Pay-As-You-Go Funding (\$ in millions)										
Discount Rate	1	.16%	2	.16%	3.16%					
Normal Cost	\$	664.4	\$	499.2	\$	379.6				
UAL Amortization		290.6		285.1		280.5				
Total	\$	955.0	\$	<b>784.3</b>	\$	660.1				



#### SECTION V – ACTUARIAL FUNDING

To have a system where the assets will eventually accumulate to the actuarial liability, meaning that the entire liability is funded, the State of Delaware may wish to begin funding this program on an actuarial basis by contributing the ADC. For illustration purposes, the amortization period selected to pay off the unfunded liability was set to a 30-year closed amortization. If the State were to establish a funding policy of contributing to the ADC, the discount rate could be increased. Using a discount rate of 7.0% (matching the pension assumption) produces an unfunded liability of \$4.8 billion rather than \$10.1 billion.

In addition to the change in overall liability, the ADC will also decrease. Thus, in order to fund on an actuarial basis, the State needs to contribute \$414.1 million, or \$370.2 million below the ARC under PAYGo. The \$414.1 million is \$149.5 higher than the expected PAYGo cost of \$264.6 million for FYE 2021.

If the State increases its contribution, but it is still less than the actuarially funded scenario, the discount rate will increase above the 2.16% discount rate, and the resulting liabilities and ADC payments will likely fall between the two discount rate scenarios presented in this report.

	Table V-1 Actuarial Liability Actuarial Funding (7.0% assumed discount) (\$ in millions)										
	Eı	State nployees	Ju	idges		losed e Police		Open te Police		Total	
Actives	\$	2,449.9	\$	1.4	\$	-	\$	85.4	\$	2,536.7	
<u>Retirees</u>		2,822.4		4.2		42.4		76.1		2,945.1	
Total	\$	5,272.3	\$	5.6	\$	42.4	\$	161.5	\$	5,481.8	
Assets*		625.3		1.0		5.0		19.0		650.3	
UAL	\$	4,647.0	\$	4.6	\$	37.4	\$	142.5	\$	4,831.5	

<sup>\*</sup> Assets allocated in proportion to liabilities

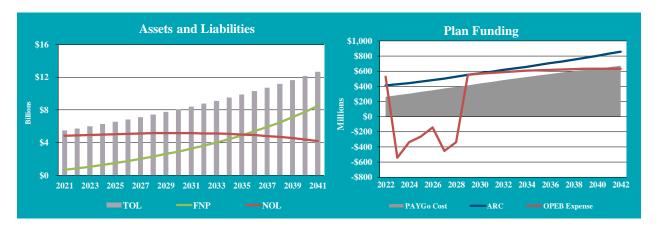
Table V-2 Actuarially Determined Contributions – FY2022 Actuarial Funding (7.0% assumed discount) (\$ in millions)								
		State aployees	Ju	ıdges		losed e Police	)pen e Police	Γotal
Normal Cost UAL Amortization	\$	141.0 256.8	\$	0.2 0.3	\$	- 2.1	\$ 5.8 7.9	\$ 147.0 267.1
Total	\$	397.8	\$	0.5	\$	2.1	\$ 13.7	\$ 414.1



#### SECTION V - ACTUARIAL FUNDING

#### **Actuarial Funding**

Looking beyond 2021, the charts below project the assets and liabilities and the funding costs for the next 20 years assuming the State amortizes the liability over a closed 30-year period.



As the above chart on the left shows, the actuarial liability increases from \$5.5 billion to \$12.7 billion during the next 20 years. The red line on the same chart shows the liability (NOL) appearing on the State's financial statements, which is projected to decrease slowly over the period to \$4.2 billion. The green line shows the assets increasing from \$650.3 million to about \$8.5 billion.

The chart on the right shows the annual costs. Benefit payments, net of retiree contributions, are shown by the grey area and increase from 11.4% of pay or \$265 million to 15.3% of pay or \$673 million, the same as in the pay-as-you-go scenario. The blue line represents the State's contribution. The red line represents the expense, which becomes an asset as assumption gains are recognized. The expense then jumps back up to the assumed contributions as the assumption and experience gains and losses are depleted. Under actuarial funding (paying the full ADC and a 7.0% discount rate) the GASB 75 expense on the State's financial statements decreases as a percentage of pay. The expense will drop to the expected benefit payments as the unfunded liability is paid off and assumed assumptions are met.



### SECTION V – ACTUARIAL FUNDING

Below are the employer contributions, benefit payments, assets, and NOL that we anticipate for the next 15 years under Actuarial Funding.

Table V-3 Expected Contributions, Expected Net Benefit Payments, Assets and NOL under Actuarial Funding (\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\					
Fiscal Year	Expected	<b>Expected Net</b>	Expected		
<b>Ending June 30,</b>	Contributions	<b>Benefit Payments</b>	Assets	<b>Expected NOL</b>	
2022	\$ 414.1	\$ 264.6	\$ 850.3	\$ 4,893.5	
2023	427.8	285.0	1,057.6	4,950.9	
2024	443.5	305.7	1,274.2	5,003.0	
2025	462.3	327.4	1,502.9	5,049.3	
2026	483.5	349.1	1,747.1	5,088.9	
2027	505.9	371.1	2,008.9	5,121.1	
2028	528.9	393.2	2,289.9	5,145.1	
2029	551.7	414.1	2,592.5	5,160.0	
2030	574.0	437.0	2,915.8	5,164.7	
2031	596.0	459.4	3,261.2	5,158.2	
2032	617.6	481.5	3,630.2	5,139.4	
2033	639.3	504.8	4,023.5	5,106.9	
2034	661.2	525.2	4,445.8	5,059.5	
2035	683.6	545.9	4,899.4	4,995.7	
2036	706.6	565.7	5,388.1	4,913.8	



#### SECTION VI – ACCOUNTING DISCLOSURES

Government Finance Officers Association (GFOA) certificate of achievement for excellence in financial reporting establishes standards for disclosure of other postemployment benefit information by governmental employers and plans in notes to financial statements and supplementary information.

In accordance with those statements, we have prepared the following disclosures:

### Schedule of Funding Progress

The schedule of funding progress, Table VI-1, compares the assets used for funding purposes to the comparable liabilities to determine how well the Plan is funded and how this status has changed over the past several years. The actuarial liability is compared to the actuarial value of assets to determine the funding ratio. The Actuarial Accrued Liability under GASB is determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions.

		Sch	Table VI- edule of Fundin (\$ millions	g Progress		
Actuarial Valuation	Actuarial Value of Assets	Actuarial Accrued Liabilities	Unfunded Actuarial Accrued Liabilities (UAAL)	Funded Ratio	overed ayroll	UAAL as a Percentage of Covered Payroll
Date	(a)	<b>(b)</b>	( <b>b-a</b> )	(a/b)	(c)	[(b-a)/c]
7/1/2021	\$ 650	\$ 10,773	\$ 10,123	6.04%	\$ 2,393	423%
7/1/2020	464	9,877	9,413	4.70%	2,358	399%
7/1/2019	410	8,730	8,320	4.70%	2,282	365%
7/1/2018	382	7,558	7,176	5.05%	2,162	332%
7/1/2017	355	8,611	8,256	4.13%	2,119	390%
7/1/2016	310	8,039	7,729	3.86%	2,035	380%
7/1/2015	312	6,321	6,009	4.94%	2,048	293%
7/1/2014	290	5,946	5,656	4.90%	2,038	277%
7/1/2013	222	5,988	5,766	3.72%	1,944	297%
7/1/2012	163	5,805	5,641	2.80%	1,885	299%
7/1/2011	144	6,769	6,625	2.10%	1,787	371%



#### **SECTION VI – ACCOUNTING DISCLOSURES**

### Schedule of Employer Contributions

The schedule of employer contributions, Table VI-2, shows whether the employer has made contributions that are consistent with an actuarially sound method of funding the benefits to be provided. The ARC is shown below instead of the Annually Determined Contribution (ADC) because the funding policy uses a 30-year rolling amortization for the unfunded liability. This funding method is not in conformity with the Actuarial Standards of Practice.

Table VI-2 Schedule of Employer Contributions (\$ in millions)					
Fiscal Year Ended June 30	Annual Required Contribution (ARC)	Percentage of ARC Contributed	Net OPEB Obligation		
2022	\$ 784.3	To be determined	N/A		
2021	734.8	36%	N/A		
2020	648.6	43%	N/A		
2019	565.1	45%	N/A		
2018	595.6	38%	3,072.6		
2017	542.4	44%	2,699.7		
2016	425.6	51%	2,390.8		
2015	404.4	56%	2,174.4		
2014	406.7	50%	1,988.5		
2013	397.8	52%	1,777.5		
2012	490.5	38%	1,588.9		



#### SECTION VI – ACCOUNTING DISCLOSURES

We have also provided a *Note to Required Supplementary Information* for the financial statements in Table VI-3.

# **Table VI-3 Note to Required Supplementary Information**

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation Date July 1, 2021

Actuarial Cost Method Entry Age Normal

Amortization Method Level Percent Open

Remaining Amortization Period 30 years

Asset Valuation Method Market Value

**Actuarial Assumptions:** 

Investment Rate of Return 2.16%
Rate of Salary Increases 2.50% (plus merit scale)
Ultimate Rate of Medical Inflation 3.50%



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

### Participant Data as of July 1, 2021

	Census as of July	1, 2021			
	State Employees	Judges	Closed State Police	Open State Police	Total
Eligible Active Employees	38,204	59	0	723	38,986
Actives with coverage	31,179	52	0	653	31,884
Eligible Terminated Vesteds	3,919	2	0	10	3,931
Eligible LTDs	524	0	0	0	524
Retirees and Disableds with coverage	20,658	30	298	245	21,231
Beneficiaries with coverage	2,236	12	102	6	2,356
Total Inactives with coverage	22,894	42	400	251	23,587
Spouses with coverage	8,945	18	209	177	9,349
<b>Total Inactives and Spouses with coverage</b>	31,839	60	609	428	32,936
Total with coverage	63,018	112	609	1,081	64,820

Eligible Active Employees					
Age	State Employees	Judges	Closed State Police	Open State Police	Total
Under 25	1,111	0	0	16	1,127
25 to 30	3,168	0	0	108	3,276
30 to 35	4,194	0	0	125	4,319
35 to 40	4,646	3	0	114	4,763
40 to 45	4,941	5	0	109	5,055
45 to 50	5,043	6	0	124	5,173
50 to 55	5,462	8	0	122	5,592
55 to 60	4,795	13	0	5	4,813
60 to 65	3,193	11	0	0	3,204
Over 65	1,651	13	0	0	1,664
Total	38,204	59	0	723	38,986

	Retirees, Disables and Beneficiaries with Coverage					
Age	State Employees	Judges	Closed State Police	Open State Police	Total	
Under 50	72	1	0	15	88	
50 to 55	348	1	0	27	376	
55 to 60	1,140	1	1	89	1,231	
60 to 65	2,600	2	13	92	2,707	
65 to 70	4,390	0	52	26	4,468	
70 to 75	5,081	12	107	2	5,202	
75 to 80	4,060	9	116	0	4,185	
80 to 85	2,521	8	67	0	2,596	
85 to 90	1,616	6	25	0	1,647	
<u>Over 90</u>	1,066	2	19	0	1,087	
Total	22,894	42	400	251	23,587	



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

New Entrant Population Statistics					
	State Employees	Judges	State Police		
Average Age	36	47	28		
Average Salary	\$33,967	\$126,969	\$42,781		
% Blue PPO	13%	14%	6%		
% Aetna HMO/CDH	43%	43%	46%		
% Nonelect	43%	43%	49%		

### **Economic Assumptions**

1. *Discount Rate:* 2.16% per year based on the 20-year

obligation bond as described by

GASB 74/75

2. Salary Growth (for Normal Cost): 3.25% per year

3. Aggregate Payroll Growth for Amortization: 3.25% per year

4. Per Person Cost Trends:

Date To Year		Annual Increase	
Beginning July 1	Pre-65 Medical	Post-65 Medical	Pharmacy
2021	5.28	4.00	6.55
2022	5.17	3.97	6.37
2023	5.07	3.94	6.19
2024	4.96	3.91	6.01
2025	4.86	3.88	5.83
2026	4.75	3.85	5.65
2027	4.65	3.82	5.47
2028	4.54	3.79	5.29
2029	4.44	3.76	5.11
2030	4.34	3.74	4.94
2031	4.23	3.71	4.76
2032	4.13	3.68	4.58
2033	4.02	3.65	4.40
2034	3.92	3.62	4.22
2035	3.81	3.59	4.04
2036	3.71	3.56	3.86
2037	3.60	3.53	3.68
2038	3.50	3.50	3.50
2039	3.50	3.50	3.50
2040	3.50	3.50	3.50

Deductibles, Co-payments, Out-of-Pocket Maximums, and Annual Maximum are assumed to increase at the above trend rates.



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

### **Demographic Assumptions**

### 1. Rates of Retirement:

State Employees:

State Emp	noyees.	Retiremer	nt Rates*			
	General Employees Correctional Officers/					
(iı	ncluding Elected C	Officials)	Specified Peace Officers			
Service	Early**	Normal	Service	Early**	Normal	
5	0.0%	18.0%	5	0.0%	18.0%	
6	0.0%	12.0%	6	0.0%	12.0%	
7	0.0%	12.0%	7	0.0%	12.0%	
8	0.0%	16.0%	8	0.0%	16.0%	
9	0.0%	16.0%	9	0.0%	16.0%	
10	0.0%	22.0%	10	0.0%	22.0%	
11	0.0%	15.0%	11	0.0%	15.0%	
12	0.0%	15.0%	12	0.0%	15.0%	
13	0.0%	15.0%	13	0.0%	15.0%	
14	0.0%	15.0%	14	0.0%	15.0%	
15	7.0%	22.0%	15	8.5%	22.0%	
16	4.0%	18.0%	16	8.3%	19.9%	
17	4.0%	12.5%	17	7.4%	17.8%	
18	4.0%	12.5%	18	5.9%	12.5%	
19	4.0%	12.5%	19	8.1%	13.2%	
20	10.0%	31.2%	20	10.1%	31.2%	
21	10.0%	23.8%	21	8.4%	32.5%	
22	10.0%	21.6%	22	8.4%	35.0%	
23	7.5%	21.2%	23	15.8%	35.0%	
24	7.5%	18.6%	24	8.9%	35.0%	
25	10.0%	28.4%	25	N/A	35.0%	
26	7.5%	23.2%	26	N/A	23.2%	
27	5.5%	24.1%	27	N/A	24.1%	
28	10.0%	23.5%	28	N/A	23.5%	
29	14.0%	25.1%	29	N/A	25.1%	
30	N/A	25.5%	30	N/A	26.7%	
31	N/A	21.7%	31	N/A	26.7%	
32	N/A	22.2%	32	N/A	26.7%	
33	N/A	20.2%	33	N/A	26.7%	
34	N/A	20.2%	34	N/A	26.7%	
35+	N/A	22.8%	35+	N/A	26.7%	

<sup>\*</sup> Rates only applicable if member meets eligibility.

<sup>\*\*</sup> Early retirement is increased by 5% for Correctional Officers (HB207, SB50, HB363, HB41, HB43, HB179, and HA1 Employees) where their early retirement is unreduced.



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

#### Judges:

Normal Retirement: 25% for all years the member is retirement eligible upon attaining:

age 62 with 12 years of credited service

100% probability of retirement once reaching age 75. Rates only applicable if member meets eligibility.

### Closed State Police:

None

#### Open State Police:

Normal Retirement				
Service	Rate			
<20	0%			
20-25	5			
26	10			
27-29	15			
30	25			
31	35			
32-34	50			
35+	100			

Rates only applied once eligibility for retirement is reached.

### 2. Rate of Withdrawal:

State Employees:

Rates of Te	rmination*
Service	Rates
0	17.2%
1	15.2
2	11.4
3	9.9
4	7.7
5	6.5
6	5.9
7	5.0
8	4.7
1 2 3 4 5 6 7 8 9	4.0
10	3.4
11	3.1
12	2.6
13	2.3
14	2.1
15-16	1.8
17	1.3
18-19	1.2
20-21	1.1
22	0.9
23 24	0.6
24	0.3
>25	0.0

<sup>\*</sup> Termination rates zero once member has reached early or normal retirement eligibility regardless of service.



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

J	u	dį	26	2.5	
v	v	u,	٠,	-13	٠

None

Closed State Police:

None

Open State Police:

Service-based table applies until eligibility for retirement is reached.

Termination		
Service	Rate	
0	5.00%	
1	4.00	
2-9	1.50	
Ultimate	0.50	

### 3. Rate of Disability:

State Employees:

Rates of Active Disability		
Age	Rates	
20	0.030%	
25	0.030	
30	0.150	
35	0.230	
40	0.320	
45	0.410	
50	0.500	
55	0.800	
60	0.960	

Rates of Active Disability for those who opted into the Disability Insurance Program*		
Age Rates		
65	1.000%	
70	1.500	
75	1.500	
80	1.500	

For those who remained in the Pension Plan for disability purposes, the assumption stops at age 64.



### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Jud	ges:
-----	------

None

Closed State Police:

None

Open State Police:

Rates of Active Disability		
Age	Current	
20	0.030%	
25	0.030	
30	0.150	
35	0.230	
40	0.320	
45	0.410	
50	0.500	
55	0.800	
60	0.960	

No disabilities are assumed with 20 or more years of service.

1/3 of disabilities are assumed partial disability and 2/3s are assumed total disability. 1/3 of disabilities are assumed duty-related and 2/3s are assumed non-duty related.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

#### 4. Rate of Mortality:

State Employees:

#### a. Rates of Mortality

Mortality rates are based on the sex-distinct employee, healthy annuitant, and disabled annuitant mortality tables described below, including adjustment factors, applied to the published tables for each group. Future mortality improvements are reflected by applying a custom projection scale on a generational basis to adjusted base tables from the base year shown below.

# i. Sample Rates of Mortality for Active Healthy Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
25	3	1	
30	5	2	
35	6	3	
40	8	4	
45	9	5	
50	13	7	
55	19	11	
60	30	18	
65	43	25	
70	59	39	
75	89	65	
80	142	111	

Rates are based on 90% and 89%, respectively, of the Pub-2010 General Employee Mortality Table, for males and females, using the Pub-2010 General Benefits Weighted Annuitant Mortality Table rates after the end of the Employee Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

ii. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
50	30	21	
55	45	29	
60	69	41	
65	99	59	
70	152	95	
75	259	170	
80	467	314	
85	858	595	
90	1,489	1,110	
95	2,322	1,811	
100	3,341	2,729	

Rates are based on 107% and 100% of the Pub-2010 General Benefits Weighted Healthy Annuitant Mortality Table, respectively, for males and females, using the Pub-2010 General Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0%% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

iii. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)		
Age	Male	Female
25	35	21
30	53	38
35	72	58
40	88	78
45	112	102
50	161	148
55	220	190
60	279	219
65	330	229
70	389	271
75	503	383
80	719	596
85	1,080	948
90	1,650	1,400
95	2,396	1,968
100	3,341	2,893

Rates are based on 107% and 106% of the Pub-2010 General Benefits Weighted Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0%% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Judges:

#### b. Rates of Mortality

Mortality rates are based on the sex-distinct employee, healthy annuitant, and disabled annuitant mortality tables described below, including adjustment factors, applied to the published tables for each group. Future mortality improvements are reflected by applying a custom projection scale on a generational basis to adjusted base tables from the base year shown below.

# i. Sample Rates of Mortality for Active Healthy Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
25	3	1	
30	5	2	
35	6	3	
40	8	4	
45	9	5	
50	13	7	
55	19	11	
60	30	18	
65	43	25	
70	59	39	
75	89	65	
80	142	111	

Rates are based on 90% and 89%, respectively, of the Pub-2010 General Employee Mortality Table, for males and females, using the Pub-2010 General Benefits Weighted Annuitant Mortality Table rates after the end of the Employee Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

ii. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)		
Age	Male	Female
50	30	21
55	45	29
60	69	41
65	99	59
70	152	95
75	259	170
80	467	314
85	858	595
90	1,489	1,110
95	2,322	1,811
100	3,341	2,729

Rates are based on 107% and 100% of the Pub-2010 General Benefits Weighted Healthy Annuitant Mortality Table, respectively, for males and females, using the Pub-2010 General Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0%% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

iii. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)		
Age	Male	Female
25	35	21
30	53	38
35	72	58
40	88	78
45	112	102
50	161	148
55	220	190
60	279	219
65	330	229
70	389	271
75	503	383
80	719	596
85	1,080	948
90	1,650	1,400
95	2,396	1,968
100	3,341	2,893

Rates are based on 107% and 106% of the Pub-2010 General Benefits Weighted Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0%% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Closed State Police and Open State Police:

### c. Rates of Mortality

Mortality rates are based on the sex-distinct employee, healthy annuitant, and disabled annuitant mortality tables described below, including adjustment factors, applied to the published tables for each group. Future mortality improvements are reflected by applying a custom projection scale on a generational basis to adjusted base tables from the base year shown below.

# i. Sample Rates of Mortality for Active Healthy Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
25	3	1	
30	5	2	
35	6	3	
40	8	4	
45	9	5	
50	13	7	
55	19	11	
60	30	18	
65	43	25	
70	59	39	
75	89	65	
80	142	111	

Rates are based on 100% of the Pub-2010 General Employee Mortality Table, for males and females, using the Pub-2010 General Benefits Weighted Annuitant Mortality Table rates after the end of the Employee Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

ii. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
50	30	21	
55	45	29	
60	69	41	
65	99	59	
70	152	95	
75	259	170	
80	467	314	
85	858	595	
90	1,489	1,110	
95	2,322	1,811	
100	3,341	2,729	

Rates are based on 107% and 100% of the Pub-2010 General Benefits Weighted Healthy Annuitant Mortality Table, respectively, for males and females, using the Pub-2010 General Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

iii. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

(2021 Values Shown)			
Age	Male	Female	
25	35	21	
30	53	38	
35	72	58	
40	88	78	
45	112	102	
50	161	148	
55	220	190	
60	279	219	
65	330	229	
70	389	271	
75	503	383	
80	719	596	
85	1,080	948	
90	1,650	1,400	
95	2,396	1,968	
100	3,341	2,893	

Rates are based on 107% and 106% of the Pub-2010 General Benefits Weighted Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 1.0% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

5. **Percent of Retirees Electing Coverage:** For employees who currently have medical coverage, 95% of employees are assumed to elect coverage at retirement if they have 20 or more years of service and 80% if they have less than 20 years of service. These employees are assumed to remain in their current plan.

For employees who do not currently have medical coverage, 50% of employees are assumed to elect medical coverage in the comprehensive plan prior to retirement and then will follow the election percentages above.

40% of current and future terminated vested employees are assumed to elect coverage.

100% of LTD participants are assumed to elect coverage.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

- 6. Family Composition: 50% of employees will elect spouse coverage at retirement.
- 7. **Dependent Age:** For current active employees, males are assumed to be 3-years older than female spouses. For current retirees, the actual spouse date of birth was used.
- 8. Rationale for Assumptions: The demographic assumptions were adopted by the Board of Trustees upon the recommendations of the actuary, based on an experience study performed in 2021 and covering the period July 1, 2015 through June 30, 2020. Assumptions directly related to health care elections, spousal coverage, and health care trends are reviewed annually. Based on the assumptions of a pay-as-you-go plan, the discount rate was selected based on the 20-year obligation bond as described by GASB.

### **Claim and Expense Assumptions**

1. Average Monthly Claims and Expense Assumptions: The following claim and expense assumptions are applicable to the 12-month period beginning July 1, 2020. Subsequent years' costs are based on the trended first-year cost adjusted with trends listed above.

Due to the small enrollment on the Aetna CDH Gold Plan, claims experience was blended with the Aetna HMO and the combined claims curve was used for both plans. The claim curves for this valuation, July 1, 2021 – June 30, 2022 are below.

Healthy Retirees & All Dependents

	Blue PPO		Aetna H	MO/CDH	Pharmacy		
Age	Male	Female	Male	Female	Male	Female	
40	\$ 423	\$ 767	\$ 413	\$ 750	\$ 117	\$ 145	
45	558	795	546	776	151	173	
50	732	915	715	894	193	204	
55	943	1,120	921	1,094	240	239	
60	1,192	1,318	1,165	1,288	293	278	
64	1,418	1,339	1,386	1,308	341	311	
65	144	132	144	132	251	245	
70	173	149	173	149	283	256	
75	211	178	211	178	276	252	
80	251	209	251	209	250	238	
85	286	237	286	237	220	219	



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

#### Disabled Retirees

	Blue PPO			MO/CDH	Pharmacy	
Age	Male	Female	Male	Female	Male	Female
40	\$ 418	\$ 649	\$ 412	\$ 637	\$ 290	\$ 301
45	567	716	558	703	405	408
50	736	843	724	828	515	507
55	906	1,006	890	988	584	567
60	1,067	1,134	1,048	1,112	599	571
64	1,191	1,116	1,168	1,094	570	535
65	216	197	216	197	377	367
70	260	224	260	224	424	384
75	317	267	317	267	413	377
80	376	314	376	314	374	356
85	429	355	429	355	330	329

- **2.** *Medicare Part D Subsidy*: Effective January 1, 2013, the subsidy is no longer applicable as the State is enrolled in an EGWP.
- 3. *Medicare Part B Premiums*: Assumed that Medicare-eligible retirees pay the Medicare Part B premiums.

#### 4. Medicare Eligibility:

Future retirees: Age 65+=100.00%.

Current retires: Under 65 = those known to be eligible for Medicare will remain eligible,

Age 65+=100.00%.

5. Annual Limits: Assumed to increase at the same rate as trend.

6. Lifetime Maximums: Are assumed to have no financial impact.

7. Geography: Implicitly assumed to remain the same as current retirees.



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

### Methodology

The Entry Age Actuarial Cost Method was used to value the Plan's actuarial liabilities and to set the normal cost. Under this method, the normal cost rate is the percentage of pay contribution which would be sufficient to fund the Plan benefits if it were paid from each member's entry into the System until termination or retirement. A rolling 30-year amortization period was used under the pay-as-you-go funding scenario. This amortization method will never pay off the unfunded liability.

A normal cost rate is determined for a typical new entrant. This rate is determined by taking the value, as of age at entry into a plan in the Program, of the member's projected future benefits, reducing it by the value of future member contributions, and dividing it by the value, also as of the member's entry age, of the member's expected future salary.

The claims costs were developed using projected claims for FY 2018-2019 and FY 2019-2020 retiree experience paid through March 31, 2020. Claims were trended from FYE 2019 to FYE 2020 at 5.75% for non-Medicare medical, 4.0% for Medicare medical, and 9.0% for pharmacy and from FYE 2020 to FYE 2021 at 5.0%, 5.0%, and 8.0% respectively. From this data, we developed per person per month (PPPM) costs and then adjusted those using age curves. Claims costs include a 4.5% load for expenses, based on the State health care actuary's projected expenses. These final claim curves were then further trended by 5.5% for non-Medicare medical, 4.0% for Medicare medical and 7.0% pharmacy to bring them to July 1, 2021

### **Changes Since Last Valuation**

The discount rate was lowered from 2.21% to 2.16% based on the 20-yr GO Bond rates.

#### **Disclosure of Models Used**

#### **ProVal**

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate the liabilities, normal costs, and projected benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

#### **Health Care Trends**

Medical trends were developed using the 2020 Society of Actuaries Long-Run Medical Cost Trend Model with the following parameters:

Initial trend rate:

Non-Medicare Eligible: 5.35%



#### APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Medicare Eligible:	4.00%
Pharmacy:	6.70%

Inflation:	2.50%
Real GDP per Capita:	1.50%
Excess Medical Cost Growth:	1.10%

Expected GDP Share in 2029: 20.0% Resistance Point: 25.0% Year limited to GDP growth: 2040

The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical U.S. medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of the SOA Project Oversight Group.

The trends selected from 2021 to 2024 were based on recent updated general industry information and our view of the marketplace. For the remaining assumptions, we have reviewed the baseline assumptions for the model and found them to be reasonable and consistent with the other economic assumptions used in the valuation.

We have relied on the Society of Actuaries as the developer of the Model. We have reviewed the Model and have a basic understanding of the Model and have used the Model in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of the Model that would affect this valuation.

#### **Projections**

This report includes projections of future contributions, assets, and funded status for the purpose of assisting the Board of Trustees with the management of the Fund. We have used Cheiron's H-Scan model to develop these projections. The model is also used to stress test the impact of volatile asset returns over the projection period.



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

### **Eligibility:**

#### State Employees:

Normal Retirement:

Eligibility: Non-GA Pre - 2012 hires: (i) age 62 with five years of credited service, or (ii)

age 60 with 15 years of credited service, or (iii) any age with 30 years of

credited service.

Non-GA Post - 2011 hires: (i) age 65 with 10 years of credited service, or (ii) age 60 with 20 years of credited service, or (iii) any age with 30 years of

credited service.

GA Pre - 2012 hires: (i) age 60 with five years of credited service or (ii) age 55

with 10 years of credited service.

GA Post - 2011 hires: (i) age 65 with 10 years of credited service, or (ii) age 60 with 20 years of credited service, or (iii) any age with 30 years of credited

service.

Early Retirement:

Eligibility: (i) age 55 with 15 years of credited service; or (ii) any age with 25 years of

credited service.

### Judges:

Normal Retirement:

Judges appointed before July 1, 1980:

Eligibility: (i) age 65 with 12 years of service as a judge; or (ii) any age with 24 years of

service; or (iii) involuntarily retired after 22 years of service as a judge.

Judges appointed after June 30, 1980:

Eligibility: (i) age 62 with 12 years of service as a judge; or (ii) any age with 24 years of

service; or (iii) involuntarily retired after 22 years of service as a judge.

#### Closed State Police:

Normal Retirement:

Age 55 or 20 years of credited service.



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

### Open State Police:

Normal Retirement:

Eligibility: (i) Must be employed at 55 with ten years of credited service; or (ii) any

age with 20 years of credited service; or (iii) 10 years of credited service

when age plus service equals 75.

All vested participants in the groups above are eligible to pick up coverage at commencement of their vested pension benefit.

Spouse coverage is available under any of the Plan options with the State paying the same percentage as the retiree. Surviving spouses are eligible for coverage after the retiree's death.



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

#### **Benefits:**

	Delaware NME Plans			
Provider Network:	First State Basic	BlueCross BlueShield PPO		
In-Network (INN)Benefits				
Copays (Do not apply to DC <sup>1</sup> or OOP max)				
Office Visit (OV)-Primary Care(PCP)	Deductible + Coinsurance	\$20		
OV - Specialist Care Provider (SCP)	Deductible + Coinsurance	\$30		
Urgent Care (UC)	\$25	\$20		
Hospital Emergency Room (ER)	Deductible + Coinsurance	\$150		
Outpatient Surgery	Deductible + Coinsurance	\$100 / visit; \$50 / visit at ambulatory surgical centers		
Hospital Inpatient	Deductible + Coinsurance	\$100 per day; max \$200 per visit		
Deductible (Individual / Family)	\$500 / \$1.000	\$0		
Coinsurance	10%	0%		
Coinsurance Limit - Excl. Deductible (Individual / Family)	\$2,000 / \$4,000	\$4,500 / \$9,000		
Benefits Out-of-Network (OON)	* / · · · · · · / · · · ·	· /		
Deductible (Individual / Family)	\$1,000 / \$2,000	\$300 / \$600		
Coinsurance	30%	20%		
Out-of-Pocket (OOP) Max (Individual / Family)	\$4,000 / \$8,000	\$7,500 / \$15,000		
Lifetime Max (INN/OON)	None	None		
Prescription Drug				
30 Day Supply - Tier 1/Tier II/Tier III Copay	\$8 / \$28 / \$50	\$8 / \$28 / \$50		
90 Day Supply - Tier 1/Tier II/Tier III Copay	\$16 / \$56 / \$100	\$16 / \$56 / \$100		
Detail Benefits				
Mental Health (MH) / Substance Abuse (SA):				
-Per Visit	Deductible + Coinsurance	\$20		
-Inpatient	Deductible + Coinsurance	\$100 copay / day; max \$200		
-Per Year Outpatient \$ Maximum	None	None		
-Per Lifetime Maximum	None	None		
Rehabilitation (i.e., speech, occup. physical):	Deductible + Coinsurance; visit limit determined by medical necessity	15% coinsurance; visit limit determined by medical necessity		
Chiropractors:	Deductible + Coinsurance; 30 visit max per year	15% coinsurance; 30 visit mac per year		
	Covered at OON cost share when	Covered at OON cost share when		
Transplants:	member does not use Blue Distinction	member does not use Blue Distinction		
	Center	Center		
Laboratory:	Deductible + Coinsurance	\$10 for labs; \$50 / \$75 for imaging services		
Durable Medical Equipment	Deductible + Coinsurance	0% member cost share		
Preventive Care:	Covered at 100%	No Charge		

<u>Blue Cross Blue Shield First State Basic</u> – This Plan provides the freedom of choice you experience with a Preferred Provider Organization (PPO) that allows you to receive both in- and out-of-network benefits.

In-network services are subject to plan year deductibles of \$500 per employee and \$1000 per family. The Plan will then pay at 90% of Highmark Delaware's allowable charge. The innetwork plan year total maximum out-of-pocket (TMOOP) is \$2,000 per employee and \$4,000 per family. Deductibles, coinsurance, and copays accrue toward the TMOOP. Preventive services are covered in-network at 100% of the allowable charge and are not subject to any deductibles, coinsurance, or copays.



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

Out-of-network services are subject to plan year deductibles of \$1,000 per employee and \$2,000 per family, and then the Plan will pay at 70% of the allowable charge. The out-of-network plan year total maximum out-of-pocket (TMOOP) is \$4,000 per employee and \$8,000 per family. Deductibles, coinsurance, and copays accrue toward the TMOOP.

The First State Basic PPO Plan includes coverage for services such as inpatient care, prenatal and postnatal care; emergency services, mental health, and substance abuse treatment, and many outpatient services, including, but not limited to: labs, x-rays and other imaging services, vision care, chiropractic, and other therapeutic benefits.

<u>Highmark Blue Cross Blue Shield Blue Delaware</u> – Highmark Delaware's managed care IPA/HMO Plan requires each member to select a primary care physician (PCP) to coordinate his/her health care needs. Members can also seek care, and some services without a referral from a PCP, from any specialist in the Highmark Delaware Participating Provider Network.

In addition to all inpatient care, certain outpatient services require Highmark Delaware's prior authorization. A list of these services is available to all providers (primary and specialist) in the Highmark Delaware network.

The IPA/HMO Plan includes Highmark Delaware network coverage for services such as inpatient care, prenatal and postnatal care; emergency services, mental health and substance abuse treatment, and many outpatient services, including, but not limited to labs, x-rays and other imaging services, vision care, chiropractic, and other therapeutic benefits. You will also have access to the Blue Cross Blue Shield nationwide network for urgent and emergency care while away from home.

The plan year total maximum out-of-pocket (TMOOP) is \$4,500 per employee and \$9,000 per family. TMOOP includes coinsurance and copays. Once met, the Plan pays 100% of covered services for the rest of the benefit period. Preventive services are covered at 100% of the allowable charge and are not subject to copays or coinsurance.



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

Delaware NME Plans Cont.  Provider Network:  Aetna HMO  Aetna CDH				
Provider Network:	Aetha nivio	Aetha CDH		
In-Network (INN)Benefits Copays (Do not apply to DC¹ or OOP max)				
	<b>04</b> F	Dadwelikla v Oairawaa		
Office Visit (OV)-Primary Care(PCP)	\$15	Deductible + Coinsurance		
OV - Specialist Care Provider (SCP)	\$25	Deductible + Coinsurance		
Urgent Care (UC)	\$15	Deductible + Coinsurance		
Hospital Emergency Room (ER)	\$150	Deductible + Coinsurance		
Outpatient Surgery	\$100 / visit; \$50 / visit at ambulatory surgical centers	Deductible + Coinsurance		
Hospital Inpatient	\$100 per day; max \$200 per visit	Deductible + Coinsurance		
Deductible (Individual / Family)	\$0	\$1,500 / \$3,000		
Coinsurance	0%	10%		
Coinsurance Limit - Excl. Deductible (Individual / Family)	\$4,500 / \$9,000	\$4,500 / \$9,000		
Benefits Out-of-Network (OON)				
Deductible (Individual / Family)	Emergency Services Only	\$1,500 / \$3,000		
Coinsurance	N/A	30%		
Out-of-Pocket (OOP) Max (Individual / Family)	N/A	\$7,500 / \$15,000		
Lifetime Max (INN/OON)	None	None		
Prescription Drug				
30 Day Supply - Tier 1/Tier II/Tier III Copay	\$8 / \$28 / \$50	\$8 / \$28 / \$50		
90 Day Supply - Tier 1/Tier II/Tier III Copay	\$16 / \$56 / \$100	\$16 / \$56 / \$100		
Detail Benefits				
Mental Health (MH) / Substance Abuse (SA):				
-Per Visit	\$25	Deductible + Coinsurance		
-Inpatient	\$100 copay / day; max \$200	Deductible + Coinsurance		
-Per Year Outpatient \$ Maximum	None	None		
-Per Lifetime Maximum	None	None		
Rehabilitation (i.e., speech, occup. physical):	20% coinsurance; PT & OT limit of 45 visits per condition; ST 45 days per incidence	Deductible + Coinsurance; visit limit determined by medical necessity		
Chiropractors:	\$15 / visit (benefit limited to 80% of allowable charge)	Deductible + Coinsurance; 30 visit max per year		
Transplants:	Higher member cost share when member does not use Blue Distinction Center	Covered at OON cost share when member does not use Blue Distinction Center		
Laboratory:	\$10 for labs; \$50 / \$75 for imaging services: \$50 / diagnostic services	Deductible + Coinsurance		
Durable Medical Equipment	20% coinsurance	Deductible + Coinsurance		
Preventive Care:	No Charge	Covered at 100%		

<u>Aetna</u> – Access and Choice. Aetna's HMO offers all the advantages of a national health plan and local customer service. Members choose any primary care physician (PCP) from a broad network. Aetna's HMO plan offers direct access to emergency and urgent care, routine OB/GYN care, and a host of health, wellness, and educational programs. This Plan covers only emergency services out-of-network.

<u>Aetna</u> – Aetna's CDH Gold Plan offers many of the features of a Preferred Provider Organization (PPO) plan with the added advantage of a State-funded Health Reimbursement Account (HRA).

The Plan includes a \$1,500 deductible for employee only (Individual) coverage and \$3,000 for Family coverage. The HRA pays the first \$1,250 in deductible expenses for Individuals and \$2,500 for Families. The member is financially responsible for the remaining in-network deductible (\$250 for Individuals and \$500 for Families). When the deductible is satisfied,



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

in-network healthcare services are paid at 90%, with an in-network coinsurance maximum of \$3,000 for Individuals and \$6,000 for Families. There is a separate out-of-network deductible of \$1,500 for Employee only (Individual) coverage and \$3,000 for Family coverage. When the deductible is satisfied, out-of-network healthcare services are paid at 70%, with an out-of-network coinsurance maximum of \$6,000 for Individuals and \$12,000 for Families.

In addition, preventive care services are covered at 100% and are not subject to a deductible or coinsurance. Prescriptions are provided through the prescription benefits manager, Express Scripts, and prescription copays are not applicable to the medical deductible or out-of-pocket maximum.

Special Medicarle Supplement (Administered by Blue Cross Blue Shield of Delaware) - This Plan supplements Medicare. Unless otherwise indicated on the Benefits Highlights pages in the Open Enrollment booklet, benefits will be paid as noted only after Medicare pays its full amount. **Note:** Delaware Law mandates that the member, spouse, and eligible dependents, elect Medicare Parts A & B when eligible.

<u>Express Scripts Prescription Coverage</u> — When you enroll in a healthcare plan you will automatically be enrolled in the prescription drug plan managed by Express Scripts. The only exception is the Special Medicfill plan without prescription coverage for those pensioners who have chosen to enroll in Medicare Part D for their prescription coverage. The Coordination of Benefits (COB) policy also applies to prescription coverage. If your spouse or dependents have other primary health coverage (pays first), the prescription coverage provided through the State's plan for the spouse or dependents will become secondary.

2021 Prescription Copay Rates						
State of Delaware Tier 1 Tier 2 Tier 3						Tier 3
Prescription Coverage		Generic	Pre	ferred*	Non	ı-Preferred
30-DAY Supply	\$	8.00	\$	28.00	\$	50.00
90-DAY Supply		16.00		56.00		100.00

<sup>\*&</sup>quot;Preferred" = Formulary

#### **State Share of Premium:**

House Bill number 81 established a fixed cost share effective July 1, 2012 for the different health insurance plans offered by the State for regular officers or employees of the State and their dependents, and a fixed cost-share for pensioners and their dependents who are not eligible for federal Medicare. The State share is listed below:

Medical Plan Type	State Share Percent of Premium Paid by State	Medical Plan Type	State Share Percent of Premium Paid by State
Basic	96.00%	НМО	93.50%
Consumer-Directed	95.00%	Comprehensive PPO	86.75%



#### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

### **Current Retiree Contributions:**

If hired prior to 07/01/1991 or are on disability retirement, no contributions are required. If hired on or after 07/01/1991 (and not retired on disability), contributions depend on years of service, as shown in the table below:

Years of Service	Percent of State Share Paid by State
Less than 10	0%
10-14	50%
15-19	75%
20 or more	100%

### **Future Retiree Contributions:**

If hired prior to 07/01/1991 or are on disability retirement, no contributions are required. If hired on or after 07/01/1991 (and not retired on disability) and before January 1, 2007, contributions depend on years of service, as shown in the table below:

Years of Service	Percent of State Share Paid by State
Less than 10	0%
10-14	50%
15-19	75%
20 or more	100%

If hired on or after January 1, 2007 (and not retired on disability), contributions depend on years of service, as shown in the table below:

Years of Service	Percent of State Share Paid by State
Less than 15	0%
15-17.5	50%
17.5-19	75%
20 or more	100%

Pensioners who retire after July 1, 2012, and who become eligible for Medicare will pay in addition to their percentage above, an additional 5% of the Medicare supplement offered by the State.



### APPENDIX B – SUBSTANTIVE PLAN PROVISIONS

### **State Monthly Premiums:**

State of Delaware Group Health Insurance Program Rates Effective July 1, 2021					
	Total Monthly Rate	State Pays	Pensioner Contributions		
Highmark Delaware First State Bas	ic PPO Plan				
Employee	\$695.36	\$667.52	\$27.84		
Employee & Spouse	\$1,438.68	\$1,381.16	\$57.52		
Employee & Child(ren)	\$1,057.02	\$1,014.76	\$42.26		
Family	\$1,798.42	\$1,726.50	\$71.92		
Aetna CDH Gold Plan					
Employee	\$719.68	\$683.70	\$35.98		
Employee & Spouse	\$1,492.22	\$1,417.64	\$74.58		
Employee & Child(ren)	\$1,099.56	\$1,044.60	\$54.96		
Family	\$1,895.74	\$1,800.96	\$94.78		
Aetna HMO Plan					
Employee	\$725.94	\$678.78	\$47.16		
Employee & Spouse	\$1,530.58	\$1,431.08	\$99.50		
Employee & Child(ren)	\$1,110.52	\$1,038.34	\$72.18		
Family	\$1,909.82	\$1,785.70	\$124.12		
Highmark Delaware Comprehensiv	e PPO Plan				
Employee	\$793.86	\$688.68	\$105.18		
Employee & Spouse	\$1,647.34	\$1,429.08	\$218.26		
Employee & Child(ren)	\$1,223.46	\$1,061.38	\$162.08		
Family	\$2,059.40	\$1,786.54	\$272.86		
Highmark Delaware Medicare Supp	olement				
for Pensioners Retired On or Prior					
Special Medicfill with Prescription	\$459.38	\$459.38	\$0		
Special Medicfill without Prescription*	\$260.44	\$260.44	\$0		
Highmark Delaware Medicare Supp	olement				
for Pensioners Retired After July 1,					
Special Medicfill with Prescription	\$459.38	\$436.42	\$22.96		
Special Medicfill without Prescription*	\$260.44	\$247.44	\$13.00		



#### APPENDIX C – GLOSSARY OF TERMS

#### 1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as mortality, withdrawal, and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the actuarial value of assets; and other relevant items.

#### 2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an actuarial liability.

#### 3. Actuarial Gain (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.

#### 4. Actuarial Liability

The portion of the actuarial present value of projected benefits which will not be paid by future normal costs; it represents the value of the past normal costs with interest to the valuation date.

#### **5.** Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments; the actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe \$100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you will not be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

		Probability		1/		Present
<b>Amount</b>		of Payment		(1+Discount Rate)		<u>Value</u>
\$100	X	(101)	X	1/(1+.1)	=	\$90

### 6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, actuarial liability, the actuarial value of assets, and related actuarial present values for a pension plan.

#### 7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an actuarial value of assets is to smooth out fluctuations in market values. This way long-term costs are not distorted by short-term fluctuations in the market.



#### APPENDIX C – GLOSSARY OF TERMS

#### 8. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the unfunded actuarial liability in order to pay for that liability in a given number of years.

### 9. Entry Age Normal Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

#### 10. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

### 11. Unfunded Actuarial Liability

The excess of the actuarial liability over the actuarial value of assets.

#### 12. Funded Percentage

The ratio of the actuarial value of assets to the actuarial liabilities.

#### 13. Mortality Table

A set of percentages which estimate the probability of death at a particular point in time. Typically, the rates are annual and based on age and sex.

#### 14. Discount Rate

The assumed interest rate used for converting projecting dollar related values to a present value as of the valuation date.

#### 15. Medical Trend

The assumed increase in dollar related values in the future due to the increase in the cost of health care.



#### APPENDIX D - ABBREVIATION LIST

Actuarial Liability (AL)

Actuarial Valuation Report (AVR)

Annual Required Contribution (ARC)

Coordination of Benefits (COB)

Deductible and Coinsurance (DC)

Durable Medical Equipment (DME)

Employee Assistance Program (EAP)

Employee Benefits Division (EBD)

Fiscal Year Ending (FYE)

Governmental Accounting Standards Board (GASB)

Hospital Emergency Room (ER)

In-Network (INN)

Inpatient (IP)

Medicare Eligible (ME)

Net Other Postemployment Benefit (NOO)

Non-Medicare Eligible (NME)

Not Applicable (NA)

Office Visit (OV)

Other Postemployment Benefit (OPEB)

Out-of-Network (OON)

Out-of-Pocket (OOP)

Outpatient (OP)

Pay-as-you-go (PAYGo)

Per Person Per Month (PPPM)

Pharmacy (Rx)

Preferred Provider Organization (PPO)

Primary Care Physician (PCP)

Specialist Care Provider (SCP)

Summary Plan Description (SPD)

Unfunded Actuarial Accrued Liability (UAAL)

Unfunded Actuarial Liability (UAL)

Urgent Care (UC)

