



Actuarial Valuation Report

State of Oklahoma

State of Oklahoma's Other Postemployment Benefits

For the Fiscal Year Ending June 30, 2022

Measurement Date July 1, 2021

Introduction

This report documents the results of the actuarial valuation for the fiscal year ending June 30, 2022 of the State of Oklahoma's Other Postemployment Benefits for the State of Oklahoma. The plan is a single-employer plan and does not issue a separate financial statement. As a result, all reporting requirements are included in the employer's financial statement. These results are based on a Measurement Date of July 1, 2021. The information provided in this report is intended strictly for documenting information relating to company and plan disclosure and reporting requirements.

Determinations for purposes other than the financial accounting requirements may be significantly different from the results in this report. Thus, the use of this report for purposes other than those expressed here may not be appropriate.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. In addition, the valuation results are based on our understanding of the financial accounting and reporting requirements under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 75 (GASB 75) including any guidance or interpretations provided by the Company and/or its audit partners prior to the issuance of this report. The information in this report is not intended to supersede or supplant the advice and interpretations of the State of Oklahoma's auditors. Additional disclosures may be required under GASB 74.

A valuation model was used to develop the liabilities for this valuation. The valuation model relies on ProVal software, which was developed by Winklevoss Technologies, LLC. Experts within Aon selected this software and determined it is appropriate for performing valuations. We coded and reviewed the software for the provisions, assumptions, methods, and data of the State of Oklahoma's Other Postemployment Benefits.

Models are used to estimate underlying per capita medical and drug claims cost values, subsequently utilized as assumption inputs for valuation models used to develop the liabilities for the current and future valuations. Models are also used to develop underlying future trend rates. The Aon consulting team leveraged expertise of Health experts within Aon as it relates to reviewing the development of the per capita claims costs and future trend rates.

The valuation model outputs various cost scenarios. The "1% increase" and "1% decrease" interest rate scenarios vary only the discount rate assumption, in order to illustrate the impact of a change in that assumption in isolation. In practice, certain other assumptions would also be expected to vary when the discount rate changes. Therefore, the output from these scenarios should be used solely for assessing the impact of the discount rate in isolation and may not represent a realistic set of results for other purposes.

The "1% increase" and "1% decrease" healthcare cost trend scenarios vary only the healthcare cost trend assumption, in order to illustrate the impact of a change in that assumption in isolation. Therefore, the output from these scenarios should be used solely for assessing the impact of the healthcare cost trend in isolation and may not represent a realistic set of results for other purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to (but not limited to) such factors as the following:

- Plan experience differing from that anticipated by the economic or demographic assumptions;
- Changes in actuarial methods or in economic or demographic assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- Changes in plan provisions or applicable law.

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

Funded status measurements shown in this report are determined based on various measures of plan assets and liabilities. For entity and plan disclosure and reporting purposes, funded status is determined using plan assets measured at market value. Plan liabilities are measured based on the interest rates and other assumptions summarized in the Actuarial Assumptions and Methods section of this report.

These funded status measurements may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, and funded status measurements for State of Oklahoma and plan disclosure and reporting purposes may not be appropriate for assessing the need for or the amount of future contributions. In conducting the valuation, we have relied on personnel, plan design, health care claim cost, and asset information supplied by State of Oklahoma as of the valuation date. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

The actuarial assumptions and methods used in this valuation are described in the Actuarial Assumptions and Methods section of this report. State of Oklahoma selected the economic and demographic assumptions and prescribed them for use for purposes of compliance with GASB 75. Aon provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

The undersigned are familiar with the near-term and long-term aspects of OPEB valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. The information provided in this report is dependent upon various factors as documented throughout this report, which may be subject to change. Each section of this report is considered to be an integral part of the actuarial opinions.

To our knowledge, no colleague of Aon providing services to State of Oklahoma has any material direct or indirect financial interest in State of Oklahoma. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this actuarial report for the State of Oklahoma.



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Accounting Requirements

Development of GASB 75 Net OPEB Expense

Calculation Details

The following table illustrates the Net OPEB Liability under GASB 75.

	Fiscal Year Ending 6/30/2021	Fiscal Year Ending 6/30/2022
(1) OPEB Liability		
(a) Retired Participants and Beneficiaries Receiving Payment	\$ 59,076,403	\$ 55,143,347
(b) Active Participants	<u>83,016,976</u>	<u>85,595,918</u>
(c) Total	\$ 142,093,379	\$ 140,739,265
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 142,093,379	\$ 140,739,265
(4) Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	N/A	N/A
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 10,552,640	TBD

Expense

The following table illustrates the OPEB expense under GASB 75.

	Fiscal Year Ending 6/30/2021	Fiscal Year Ending 6/30/2022
(1) Service Cost	\$ 4,910,509	\$ 6,213,935
(2) Interest Cost	4,625,647	3,161,622
(3) Expected Investment Return	0	0
(4) Employee Contributions	0	0
(5) Administrative Expense	0	0
(6) Plan Changes	0	0
(7) Amortization of Unrecognized		
(a) Liability (Gain)/Loss	(483,749)	(499,915)
(b) Asset (Gain)/Loss	0	0
(c) Assumption Change (Gain)/Loss	<u>(2,691,325)</u>	<u>(2,057,535)</u>
(8) Total Expense	\$ 6,361,082	\$ 6,818,107

Shown below are details regarding the calculation of Service Cost, Interest Cost and Expected Investment Return components of the Expense.

	Fiscal Year Ending 6/30/2021	Fiscal Year Ending 6/30/2022
(1) Development of Service Cost:		
(a) Normal Cost at Beginning of Measurement Period	\$ 4,910,509	\$ 6,213,935
(2) Development of Interest Cost:		
(a) Total OPEB Liability at Beginning of Measurement Period	\$ 132,200,231	\$ 142,093,379
(b) Normal Cost at Beginning of Measurement Period	4,910,509	6,213,935
(c) Actual Benefit Payments	(10,744,500)	(10,552,640)
(d) Discount Rate	<u>3.51%</u>	<u>2.21%</u>
(e) Interest Cost	\$ 4,625,647	\$ 3,161,622
(3) Development of Expected Investment Return:		
(a) Plan Fiduciary Net Position at Beginning of Measurement Period	\$ 0	\$ 0
(b) Actual Contributions—Employer	10,744,500	10,552,640
(c) Actual Contributions—Employee	0	0
(d) Actual Benefit Payments	(10,744,500)	(10,552,640)
(e) Administrative Expenses	0	0
(f) Other	0	0
(g) Expected Return on Assets	<u>N/A</u>	<u>N/A</u>
(h) Expected Return	\$ 0	\$ 0

Reconciliation of Net OPEB Liability

Shown below are details regarding the Total OPEB Liability, Plan Fiduciary Net Position, and Net OPEB Liability for the Measurement Period from July 1, 2020 to July 1, 2021:

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (c) = (a) – (b)
Balance Recognized at 6/30/2021 (Based on 7/1/2020 Measurement Date)	\$ 142,093,379	\$ 0	\$ 142,093,379
Changes Recognized for the Fiscal Year:			
Service Cost	\$ 6,213,935	N/A	\$ 6,213,935
Interest on the Total OPEB Liability	3,161,622	N/A	3,161,622
Changes of Benefit Terms	0	N/A	0
Differences Between Expected and Actual Experience	(109,120)	N/A	(109,120)
Changes of Assumptions	(67,911)	N/A	(67,911)
Benefit Payments	(10,552,640)	(10,552,640)	0
Contributions From the Employer	N/A	10,552,640	(10,552,640)
Contributions From the Employee	N/A	0	0
Net Investment Income	N/A	0	0
Administrative Expense	N/A	0	0
Net Changes	\$ (1,354,114)	\$ 0	\$ (1,354,114)
Balance Recognized at 6/30/2022 (Based on 7/1/2021 Measurement Date)	\$ 140,739,265	\$ 0	\$ 140,739,265

Liability (Gain)/Loss

The following table illustrates the liability gain/loss under GASB 75.

	Fiscal Year Ending 6/30/2021	Fiscal Year Ending 6/30/2022
(1) OPEB Liability at Beginning of Measurement Period	\$ 132,200,231	\$ 142,093,379
(2) Service Cost	4,910,509	6,213,935
(3) Interest on the Total OPEB Liability	4,625,647	3,161,622
(4) Changes of Benefit Terms	0	0
(5) Changes of Assumptions	11,661,460	(67,911)
(6) Benefit Payments	<u>(10,744,500)</u>	<u>(10,552,640)</u>
(7) Expected OPEB Liability at End of Measurement Period	\$ 142,653,347	\$ 140,848,385
(8) Actual OPEB Liability at End of Measurement Period	<u>142,093,379</u>	<u>140,739,265</u>
(9) OPEB Liability (Gain)/Loss	\$ (559,968)	\$ (109,120)
(10) Average Future Working Life Expectancy	<u>6.76</u>	<u>6.75</u>
(11) OPEB Liability (Gain)/Loss Amortization	\$ (82,836)	\$ (16,166)

Asset (Gain)/Loss

The following table illustrates the asset gain/loss under GASB 75.

	Fiscal Year Ending 6/30/2021	Fiscal Year Ending 6/30/2022
(1) OPEB Asset at Beginning of Measurement Period	\$ 0	\$ 0
(2) Contributions—Employer	10,744,500	10,552,640
(3) Contributions—Employee	0	0
(4) Expected Investment Income	0	0
(5) Benefit Payments	(10,744,500)	(10,552,640)
(6) Administrative Expense	0	0
(7) Other	<u>0</u>	<u>0</u>
(8) Expected OPEB Asset at End of Measurement Period	\$ 0	\$ 0
(9) Actual OPEB Asset at End of Measurement Period	<u>0</u>	<u>0</u>
(10) OPEB Asset (Gain)/Loss	\$ 0	\$ 0
(11) Amortization Factor	<u>5.00</u>	<u>5.00</u>
(12) OPEB Asset (Gain)/Loss Amortization	\$ 0	\$ 0

Deferred Outflows/Inflows

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2022 under GASB 75.

	Deferred Outflows	Deferred Inflows
(1) Difference Between Actual and Expected Experience	\$ 0	\$ 868,468
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0	0
(3) Assumption Changes	<u>8,211,324</u>	<u>4,567,278</u>
(4) Sub Total	\$ 8,211,324	\$ 5,435,746
(5) Contributions Made in Fiscal Year Ending 6/30/2022 After Measurement Date	<u>TBD</u>	<u>N/A</u>
(6) Total	\$ 8,211,324	\$ 5,435,746

Amortization of Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2022.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2017	Assumptions	4.60	0.00	\$ (7,404,259)	\$ -	\$ (965,771)
6/30/2018	Assumptions	4.61	0.61	(539,662)	(71,410)	(117,063)
6/30/2018	Liability (Gain)/Loss	4.61	0.61	(1,242,437)	(164,401)	(269,509)
6/30/2019	Assumptions	4.65	1.65	(12,507,142)	(4,438,018)	(2,689,708)
6/30/2019	Liability (Gain)/Loss	4.65	1.65	(611,029)	(216,817)	(131,404)
6/30/2020	Assumptions	6.76	4.76	11,661,460	8,211,324	1,725,068
6/30/2020	Liability (Gain)/Loss	6.76	4.76	(559,968)	(394,296)	(82,836)
6/30/2021	Assumptions	6.75	5.75	(67,911)	(57,850)	(10,061)
6/30/2021	Liability (Gain)/Loss	6.75	5.75	(109,120)	(92,954)	(16,166)
	Total Charges			\$ (11,380,068)	\$ 2,775,578	\$ (2,557,450)

Amounts Recognized in the deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in the OPEB expense as follows:

Year End June 30:

2023	\$ (1,440,918)
2024	\$ (217,718)
2025	\$ 1,616,005
2026	\$ 1,616,005
2027	\$ 1,221,873
Total Thereafter	\$ (19,669)

Interest Rate Sensitivity

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease (1.21%)	Current Rate (2.21%)	1% Increase (3.21%)
(1) Total OPEB Liability	\$ 151,656,898	\$ 142,093,379	\$ 133,092,561
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability (Asset)	\$ 151,656,898	\$ 142,093,379	\$ 133,092,561

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2022:

	1% Decrease (1.16%)	Current Rate (2.16%)	1% Increase (3.16%)
(1) Total OPEB Liability	\$ 150,301,386	\$ 140,739,265	\$ 131,684,511
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability (Asset)	\$ 150,301,386	\$ 140,739,265	\$ 131,684,511

Healthcare Cost Trend Sensitivity

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 127,956,042	\$ 142,093,379	\$ 158,726,141
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability (Asset)	\$ 127,956,042	\$ 142,093,379	\$ 158,726,141

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2022:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 127,498,282	\$ 140,739,265	\$ 156,290,281
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability (Asset)	\$ 127,498,282	\$ 140,739,265	\$ 156,290,281

Disclosure—Changes in the Net Pension Liability and Related Ratios – All Groups Combined

Changes in the Net Pension Liability and Related Ratios¹

	Fiscal Year Ending					
	2017	2018	2019	2020	2021	2022
Total OPEB Liability						
Service Cost	N/A	\$ 5,919,685	\$ 5,189,771	\$ 5,180,826	\$ 4,910,509	\$ 6,213,935
Interest Cost	N/A	4,497,315	5,306,629	5,634,290	4,625,647	3,161,622
Changes of Benefit Terms	N/A	0	0	0	0	0
Differences Between Expected and Actual Experiences	N/A	0	(1,242,437)	(611,029)	(559,968)	(109,120)
Changes of Assumptions	N/A	(7,404,259)	(539,662)	(12,507,142)	11,661,460	(67,911)
Benefit Payments	N/A	(12,706,088)	(11,008,441)	(11,698,492)	(10,744,500)	(10,552,640)
Net Change in Total OPEB Liability	N/A	\$ (9,693,347)	\$ (2,294,140)	\$ (14,001,547)	\$ 9,893,148	\$ (1,354,114)
Total OPEB Liability (Beginning)	N/A	158,189,265	148,495,918	146,201,778	132,200,231	142,093,379
Total OPEB Liability (Ending)	\$ 158,189,265	\$ 148,495,918	\$ 146,201,778	\$ 132,200,231	\$ 142,093,379	\$ 140,739,265
Plan Fiduciary Net Position						
Contributions—Employer	N/A	\$ 12,706,088	\$ 11,008,441	\$ 11,698,492	\$ 10,744,500	\$ 10,552,640
Contributions—Member	N/A	0	0	0	0	0
Net Investment Income	N/A	0	0	0	0	0
Benefit Payments	N/A	(12,706,088)	(11,008,441)	(11,698,492)	(10,744,500)	(10,552,640)
Administrative Expense	N/A	0	0	0	0	0
Other	N/A	0	0	0	0	0
Net Change in Plan Fiduciary Net Position	N/A	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Plan Fiduciary Net Position (Beginning)	N/A	0	0	0	0	0
Plan Fiduciary Net Position (Ending)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Net OPEB Liability (Ending)	\$ 158,189,265	148,495,918	\$ 146,201,778	\$ 132,200,231	\$ 142,093,379	\$ 140,739,265
Net Position as a Percentage of OPEB Liability	N/A	N/A	N/A	N/A	N/A	N/A
Covered-Employee Payroll	\$ 1,521,793,857	\$ 1,537,568,995	\$ 1,585,454,834	\$ 1,696,478,068	\$ 1,729,591,552	TBD
Net OPEB Liability as a Percentage of Payroll	9.70%	9.66%	9.22%	8.38%	8.22%	TBD

¹ GASB 68 was effective first for employer fiscal years beginning after June 15, 2017.

Appendix

Participant Data

The actuarial valuation was based on personnel information from State of Oklahoma records as of July 1, 2021. Following are some of the pertinent characteristics from the personnel data as of that date. Prior year characteristics are also provided for comparison purposes. Both age and service have been determined using years and months as of the valuation date.

	July 1, 2019	July 1, 2021
Health Care Participants		
Active Participants		
Number	31,280	31,223
Average Age	46.1	46.1
Average Service	11.0	11.0
Inactive Participants		
Retirees and Surviving Spouses	2,378	2,206
Average Age	60.0	60.7
Covered Spouses	304	291
Average Age	58.7	59.1
Total Participants		
Number	33,962	33,720

Age—Service Distribution

July 1, 2021

Age	Completed Years of Employment									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
< 20	30	0	0	0	0	0	0	0	0	30
20-24	1,008	28	0	0	0	0	0	0	0	1,036
25-29	2,011	568	9	0	0	0	0	0	0	2,588
30-34	1,583	1,354	307	25	0	0	0	0	0	3,269
35-39	1,403	1,180	883	334	10	0	0	0	0	3,810
40-44	1,177	980	808	738	244	5	0	0	0	3,952
45-49	1,014	832	607	587	642	160	14	0	0	3,856
50-54	919	799	620	533	545	382	205	9	0	4,012
55-59	732	715	532	498	464	328	432	161	28	3,890
60+	707	872	738	665	510	313	309	309	297	4,780
Total	10,584	7,328	4,504	3,380	2,415	1,188	1,020	479	325	31,223

Average Age as of Valuation Date 46.1

Average Service as of Valuation Date 11.0

Actuarial Assumptions and Methods

Measurement Date	July 1, 2021
Census Date	July 1, 2021
Discount rate as of July 1, 2020	2.21%
Discount rate as of July 1, 2021	2.16%
Expected Rate of Return on Assets	N/A, the plan is unfunded and benefits are not paid from a qualifying Trust

Salary Scale

<ul style="list-style-type: none"> Applicable for participants of Oklahoma Public Employees Retirement System (other than elected officials or Hazardous Duty employees), Pathfinder, or Oklahoma Department of Wildlife Conservation Defined Benefit Plan 	Age Group	Percent Increase
	20	9.25%
	25	7.55%
	30	6.05%
	35	5.25%
	40	4.95%
	45	4.55%
	50	4.25%
	55	4.05%
	60	3.55%
65	3.25%	
<ul style="list-style-type: none"> Applicable for participants of Oklahoma Law Enforcement Retirement System (Sample rates shown) 	Service Group	Percent Increase
	0	9.75%
	5	6.75%
	10	4.25%
	15	3.75%
	20	3.70%
25	3.50%	
<ul style="list-style-type: none"> Applicable for participants of Teachers' Retirement System of Oklahoma 	Service Group	Percent Increase
	0	11.00%
	1-2	4.50%
	3-4	4.25%
	5-11	4.00%
	12-17	3.75%
	18-21	3.50%
	22-24	3.25%
	25+	3.00%
<ul style="list-style-type: none"> Applicable for participants of Uniform Retirement System of Justices & Judges 	Salary Increases: 3.50% per year	

Employees Included in the Calculation	All current employees.
Retirement Rates	
▪ Applicable for participants of Oklahoma Public Employees Retirement System (other than elected officials or Hazardous Duty employees), Pathfinder, or Oklahoma Department of Wildlife Conservation Defined Benefit Plan	See Table A
▪ Applicable for elected officials of Oklahoma Public Employees Retirement System	See Table B
▪ Applicable for Hazardous Duty employees of Oklahoma Public Employees Retirement System	See Table C
▪ Applicable for participants of Oklahoma Law Enforcement Retirement System	See Table D
▪ Applicable for participants of Teachers' Retirement System of Oklahoma	See Table E
▪ Applicable for participants of Uniform Retirement System of Justices & Judges	See Table F
Mortality Rates	Pub-2010 Public Retirement Plans General Mortality Table weighted by Headcount projected by MP-2021 as of July 1, 2021
Withdrawal Rates	
▪ Applicable for participants of Oklahoma Public Employees Retirement System (including elected officials and Hazardous Duty employees), Pathfinder, and Oklahoma Department of Wildlife Conservation Defined Benefit Pension Plan	See Table G
▪ Applicable for participants of Oklahoma Law Enforcement Retirement System	See Table H
▪ Applicable for participants of Teachers' Retirement System of Oklahoma	See Table I
▪ Applicable for participants of Uniform Retirement System of Justices & Judges	2% for all years of service prior to retirement eligibility in the pension plan
Disability Rates	
▪ Applicable for participants of Oklahoma Public Employees Retirement System (other than Hazardous Duty employees), Pathfinder, or Oklahoma Department of Wildlife Conservation Defined Benefit Plan (Sample rates shown)	See Table J

- | | |
|---|-------------|
| <ul style="list-style-type: none"> ▪ Applicable for Hazardous Duty employees of Oklahoma Public Employees Retirement System (Sample rates shown) | See Table K |
| <ul style="list-style-type: none"> ▪ Applicable for participants of Oklahoma Law Enforcement Retirement System (Sample rates shown) | See Table L |
| <ul style="list-style-type: none"> ▪ Applicable for participants of Teachers' Retirement System of Oklahoma (Sample rates shown) | See Table M |
| <ul style="list-style-type: none"> • Applicable for participants of Uniform Retirement System of Justices & Judges | 0% |

Plan Participation

45% of retired employees are assumed to participate.

Marital Assumption

Male Participants: 25% of those who elect coverage are assumed to have a spouse that will receive coverage. Males are assumed to be three years older than their spouses.

Female Participants: 15% of those who elect coverage are assumed to have a spouse that will receive coverage. Males are assumed to be three years older than their spouses.

Market-related value of assets

Not applicable

Cost Method

Entry Age Normal based upon salary

Attribution

Entry Date is Date of hire

Health Care Reform

We reviewed the anticipated impact of Health Care Reform and estimate that it will have little impact on the liabilities of this plan, based upon our understanding of the legislation.

Actuarial Assumptions

Table A

Retirement Rates

Age	Hired Prior to 11/1/11		Hired on or After 11/1/11	
	Eligible for Unreduced Ret	Eligible for Reduced Ret	Eligible for Unreduced Ret	Eligible for Reduced Ret
50	15%	N/A	N/A	N/A
51	15%	N/A	N/A	N/A
52	15%	N/A	N/A	N/A
53	15%	N/A	N/A	N/A
54	15%	N/A	N/A	N/A
55	10%	3%	N/A	N/A
56	10%	4%	N/A	N/A
57	11%	4%	N/A	N/A
58	12%	5%	N/A	N/A
59	13%	6%	N/A	N/A
60	14%	6%	30/15%*	7%
61	20%	15%	30/15%*	7%
62	25%	N/A	30/15%*	20%
63	15%	N/A	30/15%*	15%
64	15%	N/A	30/15%*	15%
65	30%	N/A	30/15%*	N/A
66	25%	N/A	25%	N/A
67	25%	N/A	25%	N/A
68	25%	N/A	25%	N/A
69	25%	N/A	25%	N/A
70	50%	N/A	50%	N/A
71	50%	N/A	50%	N/A
72	50%	N/A	50%	N/A
73	50%	N/A	50%	N/A
74	50%	N/A	50%	N/A
75	100%	N/A	100%	N/A

*30% when first eligible and 15% thereafter

Actuarial Assumptions

Table B

Retirement Rates

Age	Hired Prior to 11/1/11		Hired on or After 11/1/11	
	Eligible for Unreduced Ret	Eligible for Reduced Ret	Eligible for Unreduced Ret	Eligible for Reduced Ret
50	25%	N/A	N/A	N/A
51	25%	N/A	N/A	N/A
52	25%	N/A	N/A	N/A
53	25%	N/A	N/A	N/A
54	25%	N/A	N/A	N/A
55	20%	7%	N/A	N/A
56	20%	7%	N/A	N/A
57	20%	7%	N/A	N/A
58	20%	7%	N/A	N/A
59	20%	7%	N/A	N/A
60	20%	N/A	20%	10%
61	20%	N/A	20%	10%
62	20%	N/A	20%	N/A
63	20%	N/A	20%	N/A
64	20%	N/A	20%	N/A
65	20%	N/A	20%	N/A
66	20%	N/A	20%	N/A
67	35%	N/A	35%	N/A
68	35%	N/A	35%	N/A
69	35%	N/A	35%	N/A
70	35%	N/A	35%	N/A
71	35%	N/A	35%	N/A
72	35%	N/A	35%	N/A
73	35%	N/A	35%	N/A
74	35%	N/A	35%	N/A
75	100%	N/A	100%	N/A

Actuarial Assumptions

Table C

Retirement Rates

Hired Prior to 11/1/2011				Hired on or After 11/1/2011			
Less Than 20 Yrs of Service		at Least 20 Yrs of Service		Less Than 20 Yrs of Service		at Least 20 Yrs of Service	
Age	Rate	Service	Rate	Age	Rate	Service	Rate
50	N/A	20	25%	50	N/A	20	25%
51	N/A	21	25%	51	N/A	21	25%
52	N/A	22	20%	52	N/A	22	20%
53	N/A	23-24	15%	53	N/A	23-24	15%
54	N/A	25-29	23%	54	N/A	25-29	23%
55	4%	30-34	25%	55	N/A	30-34	25%
56	5%	35+	100%	56	N/A	35+	100%
57	5%			57	N/A		
58	5%			58	N/A		
59	5%			59	N/A		
60	5%			60	7%		
61	20%			61	20%		
62	40%			62	20%		
63	22%			63	20%		
64	25%			64	20%		
65	40%			65	40%		
66	25%			66	25%		
67	25%			67	23%		
68	25%			68	22%		
69	25%			69	21%		
70	100%			70	100%		

Actuarial Assumptions

Table D

Retirement Rates

Service	Rate
20	10%
21	10%
22	10%
23	10%
24	10%
25	10%
26	10%
27	10%
28	20%
29	20%
30	30%
31	40%
32	50%
33	60%
34	80%
35+	100%

*100% at age 75

Actuarial Assumptions

Table E

Retirement Rates

Age	Eligible for Unreduced Retirement		Eligible for Reduced Retirement	
	Male	Female	Male	Female
50	12%	12%	0.0%	0.0%
51	12%	12%	0.0%	0.0%
52	12%	12%	0.0%	0.0%
53	12%	12%	0.0%	0.0%
54	12%	12%	0.0%	0.0%
55	12%	12%	1.0%	1.3%
56	12%	14%	1.0%	1.5%
57	12%	14%	1.3%	1.5%
58	12%	14%	1.5%	1.8%
59	12%	14%	1.8%	2.5%
60	12%	16%	2.0%	4.5%
61	16%	20%	2.8%	5.0%
62	25%	25%	3.5%	10.0%
63	18%	20%	10.0%	7.5%
64	18%	20%	7.5%	7.5%
65	25%	30%		
66	25%	30%		
67	25%	30%		
68	25%	30%		
69	25%	30%		
70	25%	30%		
71	25%	30%		
72	25%	30%		
73	25%	30%		
74	25%	30%		
75	100%	100%		

Actuarial Assumptions

Table F
Retirement Rates

<u>Age</u>	<u>Rate</u>
59	10%
60	10%
61	10%
62	15%
63	15%
64	15%
65	15%
66	15%
67	20%
68	20%
69	25%
70	25%
71	25%
72	25%
73	25%
74	25%
75	100%

Table G
Withdrawal Rates

<u>Service</u>	<u>Rate</u>
0	26%
1	22%
2	18%
3	14%
4	12%
5	11%
6	9%
7	8%
8	7%
9	7%
10	6%
11	6%
12	5%
13	5%
14	5%
15	4%
16	4%
17	4%
18	4%
19	3%
20	3%
21	3%
22	3%
23	2%
24	2%
25	2%
26	2%
27	1%
28	1%

Actuarial Assumptions

Table H
Withdrawal Rates

Service	Rate
0	15%
2	6%
4	4%
6	2%
8	2%
10	2%
15	2%
20	0%

Table I
Withdrawal Rates

Service	Rate
0	35.00%
1	16.00%
2	14.00%
3	12.00%
4	10.00%
5	9.00%
6	8.00%
7	7.50%
8	7.00%
9	6.50%
10	6.00%
11	5.50%
12	5.00%
13	4.50%
14	4.00%
15	3.75%
16	3.50%
17	3.50%
18	3.00%
19	3.00%
20	2.50%
21	2.50%
22	2.50%
23	2.50%
24	1.50%
25	1.50%

Actuarial Assumptions

Table J
Disability Rates

Age	Rate
20	0.009%
30	0.009%
40	0.022%
50	0.139%
60	0.200%

Table K
Disability Rates

Age	Rate
20	0.009%
30	0.022%
40	0.058%
50	0.180%
60	0.400%

Table L
Disability Rates

Age	Rate
20	0.020%
30	0.050%
40	0.160%
50	0.600%
60	2.200%

Table M
Disability Rates

Age	Males	Females
25	0.020%	0.018%
30	0.020%	0.018%
35	0.028%	0.036%
40	0.053%	0.090%
45	0.081%	0.144%
50	0.243%	0.216%
55	0.365%	0.333%
60	0.142%	0.234%
65	0.000%	0.000%

Actuarial Assumptions and Methods

Initial per capita costs

The initial year claim and expense cost for an individual (retired employee or spouse of a retired employee) represents an estimate of the average annual benefit which will be paid for coverage during the 12 months following the valuation date. The first step in the process is to establish average per capita expected plan costs at each age in retirement as of the valuation date. Future year benefit costs are the product of the initial per capita costs and the health care cost trend rates.

Aon's approach to developing the claims curve relies on three key inputs:

- Medical plan premiums and administrative charges for the recent plan years;
- Census exposure data (i.e., Oklahoma distribution of covered persons by age and sex); and
- Age/sex morbidity factors (estimates of the relative level of expected per capita claims costs for coverage provided by age and sex).

Initial per capita costs for twelve-month period beginning July 1, 2021:

Age	Medical and Drug
50	\$ 7,631
55	\$ 9,355
60	\$ 11,560
61	\$ 11,998
62	\$ 12,453
63	\$ 12,926
64	\$ 13,417

Retiree Paid Contributions per year: \$7,045.85

Spouse Paid Contributions per year: \$8,252.22

Medical Trend Rates:

Year	Rate
2021 to 2022	6.10%
2022 to 2023	5.80%
2023 to 2024	5.60%
2024 to 2025	5.30%
2025 to 2026	5.10%
2026 to 2027	4.80%
2027+	4.80%

Changes in Assumptions

The discount rate to calculate liabilities was changed from 2.21% as of July 1, 2020 to 2.16% as of July 1, 2021. These discount rates use the Bond Buyer GO 20-Bond Municipal Bond Index as of those applicable dates.

The mortality assumption used to calculate liabilities was changed from the Pub-2010 Public Retirement Plans General Mortality Table weighted by Headcount projected by MP-2020 as of July 1, 2020 to the Pub-2010 Public Retirement Plans General Mortality Table weighted by Headcount projected by MP-2021 as of July 1, 2021.

An update to the plan participation rate assumption from 40% to 45%.

Medical Assumptions Changes are summarized below.

Claims by Age

Age	Medical and Drug (July 1, 2021)		Medical and Drug (July 1, 2019)	
50	\$	7,631	\$	7,290
55	\$	9,355	\$	8,935
60	\$	11,560	\$	11,038
61	\$	11,998	\$	11,457
62	\$	12,453	\$	11,892
63	\$	12,926	\$	12,344
64	\$	13,417	\$	12,814
Retiree contributions	\$	7,045.85	\$	6,917
Spouse contributions	\$	8,252.22	\$	8,172

Medical Trend Rates:

Current Report (July 1, 2021)		Previous Report (July 1, 2019)	
Year	Rate	Year	Rate
2019 to 2020	N/A	2019 to 2020	5.30%
2020 to 2021	N/A	2020 to 2021	6.40%
2021 to 2022	6.10%	2021 to 2022	6.30%
2022 to 2023	5.80%	2022 to 2023	6.10%
2023 to 2024	5.60%	2023 to 2024	6.00%
2024 to 2025	5.30%	2024 to 2025	5.50%
2025 to 2026	5.10%	2025 to 2026	5.00%
2026 to 2027	4.80%	2026 to 2027	5.00%
2027+	4.80%	2027+	5.00%

Source of Demographic Actuarial Assumptions

The demographic assumptions were generally taken from the Pension Plans that the various employees are covered under. Changes from the July 1, 2020 assumptions are reflective of changes in assumptions for the Pension Plans.

Actuarial Assumptions and Methods

Discussion of Actuarial Assumptions and Methods

State of Oklahoma selected the economic, demographic and health care claim cost assumptions and prescribed them for use for purposes of compliance with GASB 75. Aon provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

Calculation of Normal Costs and Liabilities

The method used to calculate the service cost and accumulated postretirement benefit obligation for determining OPEB expense is the entry age normal cost method. Under this cost method, the actuarial accrued liability is based on a prorated portion of the present value of all benefits earned to date over expected future working lifetime as defined by GASB. The proration is determined so that the cost with respect to service accrued from date of hire is recognized as a level percentage of pay each year. The Normal Cost is equal to the prorated cost for the year of the valuation.

Accounting Information Under GASB 75

Benefit obligations and expense/(income) are calculated under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 75.

The total OPEB liability represents the actuarial present value of benefits based on the entry age normal cost method as of the measurement date. The service cost represents the actuarial present value of benefits that are attributed to the 2022 fiscal year, reflecting the effect of assumed future health care claim cost and/or pay increases.

The OPEB expense is the annual amount to be recognized in the income statement as the cost of OPEB benefits for this plan for the period ending June 30, 2022.

Plan Provisions

Coverage	Provides for employee and dependent healthcare coverage from the date of retirement to age 65, provided the participant was covered by the plan before retiring.
Benefits	Oklahoma provides postretirement medical benefits until age 65 if the retiree and spouse pay the full active premium
Spouse Coverage	Participant can elect to enroll in spousal coverage. Surviving spouses may continue in the plan until age 65.
Retirement Eligibility	<p>For a retiree to retain coverage with EGID, the participant must make an election within 30 days of termination of service and have 8+ years of creditable service in OPERS or 10+ years of creditable service in TRS.</p> <p>Additionally, a participant can satisfy eligibility requirements if pension plan eligibility requirements described below are satisfied.</p> <ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Applicable for participants of Oklahoma Public Employees Retirement System and Pathfinder <ul style="list-style-type: none"> For employees hired prior to July 7, 1992: <ul style="list-style-type: none"> ▪ Age 62 with 6 years of service ▪ 80 Points ▪ Reduced retirement at age 55 with 10 years of service For employees hired on or after July 7, 1992, but before November 11, 2011: <ul style="list-style-type: none"> ▪ Age 62 with 6 years of service ▪ 90 points ▪ Reduced retirement at age 55 with 10 years of service For employees hired on or after November 11, 2011: <ul style="list-style-type: none"> ▪ Age 65 with 6 years of service ▪ 90 points at age 60 ▪ Reduced retirement at age 60 and 10 years of service ▪ Applicable for elected officials of Oklahoma Public Employees Retirement System <ul style="list-style-type: none"> For employees elected or appointed before November 11, 2011: <ul style="list-style-type: none"> ▪ Age 60 with 6 years of service ▪ 80 points ▪ Reduced retirement at age 55 with 10 years of service

- For employees elected or appointed on or after November 11, 2011:
 - Age 65 with 8 years of service
 - Age 62 with 10 years of service
 - Reduced retirement at age 60 and 10 years of service
 - For employees hired prior to July 7, 1992:
 - Age 62 with 6 years of service
 - 80 Points
 - Reduced retirement at 20 years of service
 - For employees hired on or after July 7, 1992, but before November 11, 2011:
 - Age 62
 - 90 points
 - Reduced retirement at 20 years of service
 - For employees hired on or after November 11, 2011:
 - Age 65
 - 90 points at age 60
 - Reduced retirement at 20 years of service
 - Applicable for Hazardous Duty employees of Oklahoma Public Employees Retirement System
 - For employees hired on or after November 11, 2011:
 - 20 years of service
 - Age 62 with 10 years of service
 - For employees hired before June 30, 1992:
 - Age 62 with 5 years of service
 - 80 points
 - Reduced retirement at age 55 with 5 years of service
 - Reduced retirement at 30 years of service
 - For employees hired on or after June 30, 1992, but before October 31, 2011:
 - Age 62 with 5 years of service
 - 90 points
 - Reduced retirement at age 55 with 5 years of service
 - Reduced retirement at 30 years of service
 - For employees hired on or after October 31, 2011, but before October 31, 2017:
 - Age 62 with 5 years of service
 - 90 points
 - Reduced retirement at age 60 with 5 years of service
 - Reduced retirement at 30 years of service
 - For employees hired on or after October 31, 2017:
 - Age 62 with 7 years of service
 - 90 points
 - Reduced retirement at age 60 with 7 years of service
 - Reduced retirement at 30 years of service
 - Applicable for participants of Oklahoma Law Enforcement Retirement System
 - Applicable for participants of Teachers' Retirement System of Oklahoma

- Applicable for participants of Uniform Retirement System of Justices & Judges

For those in office prior to January 1, 2012:

- Age 65 with 8 years of service
- Age 60 with 10 years of service
- 80 points

For those in office after January 1, 2012:

- Age 67 with 8 years of service
- Age 62 with 10 years of service

- Applicable for participants of Oklahoma Department of Wildlife Conservation Defined Benefit Pension Plan

- Age 65
- Reduced retirement at age 55 with 15 years of service

Employer Allocations

Company Number	Number of Employees	Active OPEB Liability	Proportion of Liability	Total Portion of Liability
20	10	30,244	0.000353335	49,728
22	2	1,567	0.000018307	2,577
25	371	687,798	0.008035407	1,130,897
30	38	306,934	0.003585849	504,670
39	4	4,303	0.000050271	7,075
40	344	886,221	0.010353543	1,457,150
45	4	14,500	0.000169401	23,841
47	99	222,151	0.002595346	365,267
49	176	370,391	0.004327204	609,008
55	13	28,390	0.000331675	46,680
60	9	20,530	0.000239848	33,756
65	37	147,216	0.001719895	242,057
90	991	2,198,650	0.025686388	3,615,083
92	27	50,404	0.000588860	82,876
125	29	59,820	0.000698865	98,358
127	21	79,353	0.000927065	130,474
131	3,834	15,435,716	0.180332385	25,379,842
145	2	7,708	0.000090051	12,674
148	3	23,285	0.000272034	38,286
160	117	256,132	0.002992339	421,140
170	31	34,571	0.000403886	56,843
185	542	1,061,016	0.012395638	1,744,553
190	15	14,199	0.000165884	23,346
199	27	91,148	0.001064864	149,868
204	3	4,913	0.000057398	8,078
215	6	10,393	0.000121419	17,088
219	586	1,215,349	0.014198679	1,998,312
220	949	1,848,697	0.021597958	3,039,681
265	345	554,608	0.006479374	911,902
266	48	103,859	0.001213364	170,768
270	26	37,324	0.000436049	61,369
275	8	10,078	0.000117739	16,571
285	3	12,619	0.000147425	20,749
290	500	1,008,808	0.011785702	1,658,711
292	492	1,387,898	0.016214535	2,282,022

Employer Allocations (cont.)

Company Number	Number of Employees	Active OPEB Liability	Proportion of Liability	Total Portion of Liability
296	6	4,981	0.000058192	8,190
298	3	6,835	0.000079852	11,238
300	112	335,011	0.003913867	550,835
305	32	23,339	0.000272665	38,375
306	21	58,518	0.000683654	96,217
307	4	1,637	0.000019125	2,692
308	317	1,867,669	0.021819604	3,070,875
309	67	92,407	0.001079573	151,938
310	17	28,516	0.000333147	46,887
315	10	24,192	0.000282630	39,777
320	334	1,433,100	0.016742621	2,356,344
326	5	2,765	0.000032303	4,546
340	1,886	3,537,138	0.041323676	5,815,864
342	101	179,620	0.002098465	295,336
345	2,307	6,967,426	0.081399045	11,456,042
346	6	1,411	0.000016484	2,320
350	121	270,858	0.003164380	445,352
353	31	36,385	0.000425079	59,825
369	7	25,999	0.000303741	42,748
370	5	24,672	0.000288238	40,566
385	109	233,404	0.002726812	383,770
391	8	748	0.000008739	1,230
400	556	1,274,928	0.014894729	2,096,273
405	73	189,179	0.002210140	311,054
410	56	86,545	0.001011088	142,300
415	35	38,343	0.000447954	63,045
416	5	9,115	0.000106489	14,987
421	153	216,357	0.002527656	355,740
422	236	300,910	0.003515471	494,765
423	13	45,399	0.000530387	74,646
430	31	45,752	0.000534511	75,227
435	33	32,383	0.000378324	53,245
440	5	2,399	0.000028027	3,945
445	8	14,985	0.000175067	24,639
448	1	0	0.000000000	-

Employer Allocations (cont.)

Company Number	Number of Employees	Active OPEB Liability	Proportion of Liability	Total Portion of Liability
450	22	34,766	0.000406164	57,163
452	1,694	2,442,361	0.028533615	4,015,800
475	4	6,714	0.000078438	11,039
477	144	875,589	0.010229331	1,439,669
509	3	4,084	0.000047713	6,715
510	27	39,849	0.000465548	65,521
515	52	110,021	0.001285353	180,900
520	3	3,647	0.000042607	5,997
525	7	1,839	0.000021485	3,024
557	11	50,166	0.000586079	82,484
560	12	16,700	0.000195103	27,459
563	2	1,103	0.000012886	1,814
566	495	982,735	0.011481097	1,615,841
570	9	13,290	0.000155264	21,852
575	1	9,693	0.000113241	15,938
582	0	0	0.000000000	-
585	1,332	11,769,415	0.137499723	19,351,610
588	12	6,914	0.000080775	11,368
619	7	10,667	0.000124620	17,539
622	1	15,963	0.000186493	26,247
625	32	50,166	0.000586079	82,484
628	14	30,638	0.000357938	50,376
629	42	75,305	0.000879773	123,819
630	22	60,728	0.000709473	99,851
632	2	3,498	0.000040866	5,752
635	38	54,303	0.000634411	89,287
645	45	129,171	0.001509079	212,387
650	1,350	2,275,238	0.026581151	3,741,012
670	206	308,387	0.003602824	507,059
677	171	349,463	0.004082706	574,597
678	2	1,900	0.000022197	3,124
695	607	1,144,993	0.013376724	1,882,630
715	36	81,171	0.000948305	133,464
740	46	82,822	0.000967593	136,178
753	3	5,500	0.000064255	9,043

Employer Allocations (cont.)

Company Number	Number of Employees	Active OPEB Liability	Proportion of Liability	Total Portion of Liability
755	10	16,632	0.000194308	27,347
772	6	14,378	0.000167975	23,641
790	2	1,699	0.000019849	2,794
800	203	454,151	0.005305755	746,728
803	3	6,548	0.000076499	10,766
805	940	1,976,977	0.023096627	3,250,602
807	540	1,347,059	0.015737421	2,214,873
830	6,027	13,708,373	0.160152182	22,539,700
835	94	218,201	0.002549199	358,772
865	45	80,926	0.000945442	133,061
<u>978</u>	<u>473</u>	<u>1,082,456</u>	<u>0.012646117</u>	<u>1,779,805</u>
Total	31,223	\$ 85,595,918	1.000000000	\$ 140,739,265

The total liability of \$140,739,265 is as of the July 1, 2021 measurement date and is shown in this report.