Ohio State Teachers Retirement System of Ohio

Legislative Analysis Report of House Bill 310

Produced by Cheiron

December 2023

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Via Electronic Mail

December 28, 2023

Board of Trustees
State Teachers Retirement System of Ohio
275 East Broad Street
Columbus, Ohio 43215

Dear Members of the Board:

As required under the Ohio Revised Code section 3307.51 (D) the Board must have a report by an actuary on the potential financial impact of any proposed legislation. This report is intended to comply with 3307.51(D) and contains a

- summary of House Bill 310;
- description of the actuarial assumptions and methods used in the report;
- description of the participant groups included in the report;
- statement of the financial impact of the legislation including
    - the increase in the employer normal cost percentage;
    - the increase in actuarial liabilities; and
    - the per cent of payroll that would be required to amortize the increase in actuarial liabilities as a level per cent of payroll over thirty years;
- statement of whether the scheduled contribution to the system after the proposed change is enacted are expected to be sufficient to satisfy the funding objectives by the board

The results of this analysis rely on future plan experience conforming to the underlying assumptions and methods outlined in this report. To the extent that the actual plan experience deviates from the underlying assumptions and methods, or there are any changes in plan provisions or applicable laws, the results would vary accordingly.

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 report was prepared for STRS Ohio for the purposes described 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.

Sincerely,
Cheiron

Michael Noble, FSA, FCA, MAAA, EA
Principal Consulting Actuary

Bonnie Rightnour, FSA, MAAA, EA
Principal Consulting Actuary

cc: Gene Kalwarski, Cheiron

SECTION I –SUMMARY OF PROPOSED LEGISLATION

House Bill No. 310 (HB 310) proposes to amend sections 3307.70, 3307.751, and 3307.752 of the Revised Code regarding the cost for purchases of military service credit in the State Teachers Retirement System (STRS).

Here is a summary of the HB 310 proposed changes:
In the current law, members purchasing service under 3307.751 are required to pay 100% of the increase in actuarial liability attributed to the purchased service. Under HB 310, the cost for members purchasing service under 3307.751 shall be equal to the sum of the contributions that would have been paid by the member and the member's employer had the member been in active service as a teacher during the period for which the member is purchasing. Such an amount will not have interest applied.

In current law, members purchasing service under 3307.752 subsection (D) must pay interest in addition to the cost of service purchases if the purchase is not made in a timely manner. HB 310 removes the requirement for the member to pay interest under this subsection.

SECTION II – ANALYSIS OF FINANCIAL IMPACT

In order to assess the financial impact of House Bill 310 on the System we considered the potential population impacted by the law and the fiscal impact to the System depending on a member's situation.

Population

The number of active participants in the STRS Ohio DB Plan as of FYE 2023 167,526. According to an estimate using the 2017-2021 American Community Survey (ACS) Public-Use Microdata Sample for Ohio, derived from the U.S. Census Bureau, there were approximately 3,954 Ohioans that were veterans working as teachers in kindergarten through twelfth grade. If we assume that all those teachers are STRS members, it represents approximately 2.4% of the current active population.

Over the last five years ending June 30,2023, the number of members who have purchased military service has ranged between 11 and 19 per year. The number of members who have certified military service with STRS over the same period has ranged between 23 and 41 and has averaged 30 per year over this period. The average age for those purchasing service was 54 and the average service at time of purchase was 21.5.

Analysis of Fiscal Impact

Currently, Revised Code 3307.751 defines the cost for members purchasing service is determined to be approximately equal to the increase in liability due to the purchased service. This amount can vary significantly depending on a member's age and service at the time of purchase. The factors in place for purchasing a single year of service for the current fiscal year vary from as low as 8.0% of salary (at age 36 with 5 years of service) to as high as 68.3% of salary (at age 51 with 27 years of service).

House Bill No. 310 (HB 310) proposes to amend the cost under 3307.751for members purchasing service for active duty as a member of the armed forces of the United States. The cost for these members will be the sum of the contributions that would have been paid by the member and member's employer had the member been in active service as a teacher during the period for which the member is purchasing. No interest will be applied to the calculation of the theoretical contribution made in the past when determining the cost to purchase service in the current year. It is not clear from HB310 what assumption will be made for the salary for members for the service being purchased. In our analysis we have assumed that a member's salary at date of hire has been increased by the valuation assumption to equal their current salary. We have also assumed that the salary for periods prior to hire date (for the military service being purchased), was 2.5% lower than salary at date of hire for each year prior to hire date.

SECTION II – ANALYSIS OF FINANCIAL IMPACT

Example One – Age 36 with 5 years of STRS service – purchasing 2 years of applicable service

Current salary of $64,624 (average for age 36 in sixth year of service).

Cost under current 3307.751 = 8.0% of current salary for first year of purchased service plus 14.3% of current salary for second year of purchased service = 22.3% of current salary. This equals $14,411, which is the assumed increase in actuarial liability to the System at the time of purchase.

Cost under HB 310. The current salary of $64,624 reduced back to date of hire would be $44,728. The salaries for the years of service being purchased are assumed to be $42,573 and $43,637. At the time when the service is being purchased, both the employer and employee contribution rates were 14% of salary. The cost for this participant under HB310 would be 28% of ($42,574 + $43,637) = $24,139.

As a result of HB 310, this member would pay $9,728 more than the assumed increase in actuarial liability.

Example Two – Age 51 with 27 years of STRS service – purchasing 2 years of applicable service

Current salary of $96,411 (average salary for age 51 in 28th year of service).

Cost under current 3307.751 = 68.3% of current salary for first year of purchased service plus 47.3% of current salary for second year of purchased service = 115.6% of current salary. This equals $111,451, which is the assumed increase in actuarial liability to the System at the time of purchase.

Cost under HB 310. The current salary of $96,411 reduced back to date of hire would be $25,540. The salaries for the years of service being purchased are assumed to be $24,309 and $24,917. At the time when the service is being purchased, the employer contribution was 14% of salary and the employee contribution was 10% of salary. The cost for this participant under HB310 would be 24% of ($24,309 + $24,917) = $11,814.

As a result of HB 310, this member would pay $99,637 less than the assumed increase in actuarial liability.

As can be seen from these examples the impact on the System varies based on each individual's situation. Younger members with lower service may actually be required to pay more than the assumed increase in liability which would result in an actuarial gain for the System. For older members with significant service HB310 would reduce the cost well below the increase in liability which would result in an actuarial loss for the system.

For the members who have purchased service under 3307.751 in the past five fiscal years, the average service purchased was 3 years. With an average age of 54, average service of 21.5 years and average pay of $90,271, the cost under HB 301 for this purchase would result in a member cost of $22,195 less than under current law.

SECTION II – ANALYSIS OF FINANCIAL IMPACT

Statement of Financial Impact

Based on the population information described above, we believe that the overall utilization of service purchases relative to the total size of the Plan would not warrant the inclusion of an assumption related to future military service purchases in the actuarial valuation. Because an assumption for future purchases would not be included in our valuation, there would not be an increase in the Plan's normal cost nor would there be an increase in the Plan's actuarial liability. As required by 3307.51(D) we conclude:

- The increase in the employer normal cost percentage would be 0%,
- The increase in actuarial liabilities would be $0, and thus
- With no increase in liability 0% percent of payroll would be required to amortize the impact over thirty years.
- The scheduled contribution to the system after the proposed change is enacted are expected to be sufficient to satisfy the funding objectives by the board

Future service purchases where the cost of such purchase is different than the actuarial liability would result in the Plan experiencing an actuarial gain or loss. Based on the experience of the last 5 years, we anticipate that approximately 30 people would be eligible to purchase military service and that those who do so will purchase an average of 3 years. If we further assume an average age of 54 and service of 21.5 years, the difference between the increase in liability and amount paid by members would be approximately $22,195 per member. The annual actuarial loss associated with HB310 purchases even under this scenario is less than $0.7 million. However, if 30 members per year met the criteria under Example Two above, the loss under this scenario is approximately $2.9 million. These two losses range between 0.0006% and 0.0029% of actuarial liabilities, which we conclude to be a de minimis impact on the System.

SECTION III – MEMBERSHIP INFORMATION

Table III-1
Summary of Membership Data as of June 30, 2023 ($ in thousands)

		Male	Female	Total
1.	**Defined Benefit Plan Active Members**			
	Number of Members	45,737	121,789	167,526
	Annual Salaries (for period ending June 30, 2023)	$ 3,397,787	$ 8,206,552	$ 11,604,339
	Average Age	45.58	44.11	44.51
	Average Service	13.73	13.41	13.50
2.	**Combined Plan Active Members**			
	Number of Members	1,648	5,858	7,506
	Annual Salaries (for period ending June 30, 2023)	$ 120,000	$ 384,942	$ 504,942
	Average Age	43.96	41.45	42.00
	Average Service	9.48	9.99	9.88
3.	**Total Defined Benefit and Combined Plan Active Members**			
	Number of Members	47,385	127,647	175,032
	Annual Salaries (for period ending June 30, 2023)	$ 3,517,787	$ 8,591,494	$ 12,109,281
	Average Age	45.52	43.99	44.40
	Average Service	13.58	13.25	13.34
4.	**Defined Benefit Inactive Members**			
	Eligible for Allowances	4,842	15,300	20,142
	Eligible for Refunds Only	52,244	96,221	148,465
	Total	57,086	111,521	168,607
5.	**Combined Benefit Inactive Members**			
	Eligible for Allowances	155	644	799
	Eligible for Refunds Only	491	1,426	1,917
	Total	646	2,070	2,716
6.	**Total Inactive Members**			
	Eligible for Allowances	4,997	15,944	20,941
	Eligible for Refunds Only	52,735	97,647	150,382
	Total	57,732	113,591	171,323

SECTION III – MEMBERSHIP INFORMATION

Table III-1
Summary of Membership Data as of June 30, 2023 (continued) ($ in thousands)

		Male	Female	Total
7.	**Retirees**			
	Number of Members	41,857	91,064	132,921
	Annual Allowance	$ 2,350,959	$ 4,124,385	$ 6,475,344
	Average Allowance (in dollars)	$ 56,166	$ 45,291	$ 48,716
8.	**Disabled Retirees**			
	Number of Members	1,280	3,087	4,367
	Annual Allowance	$ 56,673	$ 118,926	$ 175,599
	Average Allowance (in dollars)	$ 44,276	$ 38,525	$ 40,210
9.	**Beneficiaries Receiving Optional Allowances**			
	Number of Members	3,966	9,617	13,583
	Annual Allowance	$ 106,665	$ 383,393	$ 490,058
	Average Allowance (in dollars)	$ 26,895	$ 39,866	$ 36,079
10.	**Survivors' Benefit Fund Beneficiaries**			
	Number of Members	2,627	3,013	5,640
	Annual Allowance	$ 51,992	$ 76,564	$ 128,556
	Average Allowance (in dollars)	$ 19,791	$ 25,411	$ 22,794
11.	**Total Retirees and Beneficiaries**			
	Number of Members	49,730	106,781	156,511
	Annual Allowance	$ 2,566,289	$ 4,703,268	$ 7,269,557
	Average Allowance (in dollars)	$ 51,604	$ 44,046	$ 46,448

* *Annual Allowances reflect the COLA adjustments that come into effect during FYE 2024 for eligible members and beneficiaries.*

SECTION III – MEMBERSHIP INFORMATION

Table III-2
Benefit Payments by Type as of June 30, 2023

Age Last Birthday	Number	Annual Allowance (in thousands)	Average Annual Allowance
Retirees			
Under 60	3,403	$ 193,412	$ 56,836
60-64	10,177	498,393	48,972
65-69	23,502	1,139,789	48,498
70-74	35,519	1,811,521	51,001
75-79	28,758	1,460,591	50,789
Over 79	31,562	1,371,638	43,459
Total	**132,921**	**$ 6,475,344**	**$ 48,716**
Disabled Retirees			
Under 60	854	$ 31,138	$ 36,462
60-64	589	24,243	41,160
65-69	495	21,674	43,786
70-74	866	37,593	43,410
75-79	794	33,649	42,379
Over 79	769	27,301	35,502
Total	**4,367**	**$ 175,599**	**$ 40,210**
Beneficiaries Receiving Optional Allowances			
Under 60	7	$ 332	$ 47,470
60-64	105	4,323	41,169
65-69	462	19,867	43,002
70-74	1,432	62,765	43,830
75-79	2,264	96,099	42,447
Over 79	9,313	306,672	32,929
Total	**13,583**	**$ 490,058**	**$ 36,079**
Survivors' Benefit Fund Beneficiaries			
Under 60	1,316	$ 18,765	$ 14,259
60-64	372	8,373	22,507
65-69	511	12,949	25,340
70-74	892	24,242	27,177
75-79	834	22,331	26,776
Over 79	1,715	41,897	24,430
Total	**5,640**	**$ 128,556**	**$ 22,794**
Grand Total	**156,511**	**$ 7,269,557**	**$ 46,448**

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1. Mortality Rates

Post-Retirement: Pub-2010 Teachers Healthy Annuitant Mortality Table, adjusted 110% for males, projected forward generationally using mortality improvement scale MP-2020 (Updated effective June 30, 2022).

Sample mortality rates prior to improvements are as follows:

Age	Male	Female
50	0.11%	0.07%
55	0.25%	0.19%
60	0.39%	0.29%
65	0.65%	0.45%
70	1.18%	0.77%
75	2.23%	1.46%
80	4.23%	2.82%
85	7.96%	5.39%
90	14.59%	10.09%
95	24.55%	18.03%
100	35.87%	28.16%

Pre-Retirement: Pub-2010 Teachers Employee Table adjusted 95% for females, projected forward generationally using mortality improvement scale MP-2020 (Updated effective June 30, 2022).

Sample mortality rates prior to improvement are as follows:

Age	Male	Female
25	0.02%	0.01%
30	0.02%	0.01%
35	0.03%	0.02%
40	0.04%	0.03%
45	0.07%	0.05%
50	0.11%	0.07%
55	0.17%	0.10%
60	0.26%	0.15%

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

Post-Retirement Disabled: Pub-2010 Teachers Disabled Annuitant Table projected forward generationally using mortality improvement scale MP-2020 (Updated effective June 30, 2022).

Sample mortality rates prior to improvement are as follows:

Age	Male	Female
45	1.01%	0.99%
50	1.61%	1.48%
55	2.11%	1.74%
60	2.50%	1.96%
65	3.04%	2.26%
70	3.90%	2.86%
75	5.19%	4.00%

2. Active Retirement Rates

The following rates of retirement are assumed for members eligible to retire with a reduced benefit (Updated effective June 30, 2022).

Defined Benefit Plan – Reduced Rates						
Age	Male	Female		Age	Male	Female
50-51	2.0%	2.0%		59	11.0%	10.0%
52	3.0%	3.0%		60	6.5%	9.0%
53	5.0%	5.0%		61	8.0%	10.0%
54	9.0%	9.0%		62	8.0%	11.0%
55	12.0%	13.0%		63	10.0%	12.0%
56-57	10.0%	11.0%		64	15.0%	25.0%
58	8.0%	10.0%				

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

The following rates of retirement are assumed for members once they are eligible to retire with an unreduced benefit (Updated effective June 30, 2022).

Defined Benefit Plan – Unreduced Rates						
Age	Male	Female		Age	Male	Female
55	23%	18%		66	23%	28%
56	20%	20%		67	22%	26%
57	18%	20%		68	20%	25%
58	22%	22%		69	21%	25%
59	23%	26%		70-71	22%	25%
60	21%	28%		72	24%	25%
61-62	20%	28%		73	20%	25%
63	20%	30%		74	23%	28%
64	24%	30%		75+	100%	100%
65	28%	36%				

Combined Plan Retirement Rates		
Age	Male	Female
60	10%	10%
61-63	10%	15%
64	18%	20%
65	25%	30%
66	10%	25%
67-68	10%	15%
69-74	15%	15%
75	100%	100%

3. Inactive Vested Retirement Rates

5% at each early retirement age through age 64 and 100% at age 65, or the first age at which unreduced benefits are available. (The assumed rates were adopted effective June 30, 2017 and reaffirmed effective June 30, 2022.)

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

4. Disability Rates

Select rates are shown below (Updated Rates effective June 30, 2022):

Age	Unisex Rates
Under 30	0.007%
30	0.007%
35	0.021%
40	0.035%
45	0.070%
50	0.126%
55	0.154%
60	0.175%
65 and Over	0.175%

5. Termination Rates

Termination rates based on service, for causes other than death, disability, or retirement (Updated Rates effective June 30, 2022).

Vested Terminations*		
Age	**Male**	**Female**
20	6.00%	6.00%
25	6.00%	6.00%
30	2.70%	3.55%
35	2.05%	2.00%
40	1.75%	1.40%
45	1.60%	1.25%
50	1.95%	1.60%
55	4.00%	3.60%
60	4.00%	3.60%

*Termination rates stop at first retirement eligibility.

Non-Vested Terminations		
Service	**Male**	**Female**
Under 1 Year	40.00%	35.00%
1 to 2 Years	16.00%	15.00%
2 to 3 Years	12.00%	8.00%
3 to 5 Years	9.00%	8.00%

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

6. Percent Electing a Deferred Termination Benefit

80% of future terminating members of the Defined Benefit and Combined Plans are assumed to elect a deferred termination benefit. The remaining 20% are assumed to take an immediate lump-sum. (Updated effective June 30, 2022).

95% of current terminated vested members of the Defined Benefit and Combined Plans are assumed to elect a deferred termination benefit. The remaining 5% are assumed to take a lump-sum on the valuation date. (Updated effective June 30, 2022).

7. Percent Married:

For valuation purposes, 80% of male members and 60% of female members are assumed to be married. Male members are assumed to be three years older than their spouses, and female members are assumed to be one year younger than their spouses. (The assumed age difference adopted effective June 30, 2017 and reaffirmed effective June 30, 2022.)

8. Dependents for Survivor's Benefit

The spouse is the only assumed beneficiary for the survivor's benefit.

9. Missing Data

Where data was missing, the field was populated with the prior year's data, if available, or the average value of similar members.

10. Investment Return Rate

7.00% per annum, compounded annually and net of all expenses.

11. LDROM Discount Rate

3.91% per annum based on matching cash flows for the System against US Treasury securities.

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

12. Salary Increase Rates

Total salary increases, as shown below for selected attained service (Updated effective June 30, 2022).

Service	Rate
<1	8.50%
1	8.20%
2	8.00%
3	7.00%
4	6.50%
5	6.30%
10	5.50%
15	4.50%
20	3.50%
25	3.00%
30+	2.50%

13. Payroll Growth Rates

3.00% per annum (Adopted effective June 30, 2017 and reaffirmed effective June 30, 2022).

14. Defined Contribution Plan

The Defined Contribution account balance is added to the Actuarial Liability and the Actuarial Value of Assets. If a member retires and elects to have the Defined Contribution Account balance paid as an annuity, then the account balance is transferred to the Defined Benefit Plan and the annuity is valued as part of the Defined Benefit Plan.

15. Changes in Assumptions Since Last Valuation

None.

16. Rationale for Assumptions

For rationale on the current assumptions, please refer to the Experience Study Report, dated March 11, 2022. In our professional judgment, the combined effect of the assumptions has no significant bias.

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Actuarial Value of Assets

The Actuarial Value of Assets is based on the Market Value of Assets with a four-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the Actuarial Value of Assets (adjusted for receipts and disbursements during the year). The actual investment return for this purpose is determined net of all investment and administrative expenses. The actuarial value is further adjusted, if necessary, to be within 9% of the market value.

2. Actuarial Funding Method

The funding method used for the valuation of both the Actuarial Liability and the LDROM liability is the Entry Age Normal (EAN) method. Under this funding method, a normal cost rate is determined as a level percentage of pay for each active participant. The normal cost rate multiplied by payroll equals the total normal cost for each participant. The normal cost contributions (Employer and Participant) will pay for projected benefits at retirement for each active participant.

The Actuarial Liability is the difference between the Present Value of Future Benefits and the Present Value of Future Normal Costs. The difference between this Actuarial Liability and the Actuarial Value of Assets is the Unfunded Actuarial Liability (UAL).

The portion of the actuarial liability in excess of plan assets, the UAL, is amortized to develop an additional cost that is added to each year's employer normal cost. Under this funding method, actuarial gains and losses are directly reflected in the size of the Unfunded Actuarial Liability. The amortization method is described below.

3. Amortization Method

The Actuarially Determined Contribution (ADC) is determined as the sum of (a) the employer normal cost rate, and (b) a level percentage of payroll required to amortize the Unfunded Actuarial Liability over the 30-year closed period that began July 1, 2015.

4. Disclosure Regarding Modeling

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 are not aware of any material inconsistencies, unreasonable output resulting from the aggregation of assumptions, material limitations or known weaknesses that would affect this report.

SECTION IV – SUMMARY OF ASSUMPTIONS AND METHODS

Projections in this report were developed using P-scan, our proprietary tool for the intended purpose of developing projections. The projections shown in this report cover multiple individual scenarios and the variables are not necessarily correlated. We are not aware of any material inconsistencies, unreasonable output resulting from aggregation of assumptions, material limitations or known weaknesses that would affect the projections shown in this report.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

Defined Benefit Plan

1. Eligibility for Membership

Immediate upon commencement of employment

2. Service Retirement

Eligibility: Age 65 with five years of service, or age 55 with 25 years of service, or 30 years of service regardless of age. Age and service requirements increased effective August 1, 2015.

Effective July 1, 2023, service credit requirements for retirement with an unreduced benefit increased as follows:

Unreduced Benefit for Retirement Between:	Minimum Age and Years of Service
Through 7/1/2015	Any age and 30 years; or age 65 and 5 years
8/1/2015−7/1/2017	Any age and 31 years; or age 65 and 5 years
8/1/2017−7/1/2019	Any age and 32 years; or age 65 and 5 years
8/1/2019−7/1/2021	Any age and 33 years; or age 65 and 5 years
8/1/2021−7/1/2028	Any age and 34 years; or age 65 and 5 years
8/1/2028 and later	Any age and 35 years; or age 65 and 5 years

Amount: For members eligible to retire on or before July 1, 2015 (i.e., age 60 with 5 years of service, age 55 with 25 years of service, or 30 years of service regardless of age), the annual amount is equal to the greater of (a) 2.2% of final average salary for the three highest years of earnings, multiplied by years of total Ohio service credit, or 2.5% of final average salary for the three highest years of earnings if the member has 35 or more years of service credit, multiplied by years of total Ohio service credit up to 30 years of service. For years of Ohio contributing service credit in excess of 30 years, the following percentages will apply:

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

Years of Service	Percentage
31	2.5%
32	2.6
33	2.7
34	2.8
35	2.9
36	3.0
37	3.1
38	3.2
39	3.3

or (b) $86 multiplied by years of service credit.

Effective August 1, 2015, the annual amount is equal to 2.2% of final average salary for the five highest years of earnings, multiplied by all years of service.

For members who were eligible to retire on July 1, 2015, the annual amount is greater of:

a. the benefit amount calculated upon retirement under the new benefit formula, or

b. the benefit amount the member would have received if he/she retired on July 1, 2015.

Annual salary is subject to the limit under IRC Section 401(a)(17).

For retirements prior to August 1, 2015, if the member has less than 30 years of service at retirement and is younger than age 65, the following reduction factors apply:

Attained Age	or	Years of Ohio Service Credit	% of Base Amount
58		25	75%
59		26	80
60		27	85
61			88
		28	90
62			91
63			94
		29	95
64			97
65		30 or more	100

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

For retirements on or after August 1, 2015, the age and service credit requirements for an actuarially reduced benefit are as follows:

Actuarially Reduced Benefit for Retirement Between:	Minimum Age and Years of Service
Through 7/1/2015	Age 55 and 25 years; or age 60 and 5 years
8/1/2015−7/1/2017	Any age and 30 years; or age 55 and 26 years; or age 60 and 5 years
8/1/2017−7/1/2019	Any age and 30 years; or age 55 and 27 years; or age 60 and 5 years
8/1/2019−7/1/2021	Any age and 30 years; or age 55 and 28 years; or age 60 and 5 years
8/1/2021−7/1/2023	Any age and 30 years; or age 55 and 29 years; or age 60 and 5 years
8/1/2023 and later	Any age and 30 years; or age 60 and 5 years

The actuarially reduced benefit reflects a reduction for each year that the member retirees before meeting eligibility for an unreduced benefit.

The benefits as a percentage of final average salary, which reflect the early retirement reduction, are shown in the booklet entitled *Service Retirement and Plans of Payment for members enrolled in the Defined Benefit Plan 2017/2018.*

3. Disability Retirement

Eligibility: Membership before July 30, 1992, and election of this benefit, completion of five or more years of service, under age 60 and permanently incapacitated for the performance of duty.

Amount:

1. Annuity with a reserve equal to the member's accumulated contributions, plus
2. The difference between (1) and the greater of 2% of the average salary during the three highest years of earnings times total service plus years and months from date of disability to age 60. Maximum allowance is 75% of final average salary. Minimum allowance is 30% of final average salary.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

4. Disability Allowance

Eligibility: Membership after July 29, 1992, or membership before July 30, 1992, and election of this benefit, completion of five or more years of qualifying service and permanently incapacitated for the performance of duty. For membership on and after July 1, 2013, completion of ten years of qualifying service and permanently incapacitated for the performance of duty.

Amount: The greater of 2.2% of the average salary times total service. Maximum allowance is 60% of final average salary. Minimum allowance is 45% of final average salary. The disability allowance payment terminates at age 65 (or later if payment begins after age 60). After termination of the disability allowance, the member may apply for service retirement.

5. Death after Retirement

Lump-sum payment of $1,000 upon death after service or disability retirement.

6. Survivor's Benefit

Eligibility: Upon death after at least 1½ years of service credit for Ohio service with at least 1/4 year of such service in the 2½ years preceding death or upon death of a disability retiree. For membership on or after July 1, 2013, upon death after at least five years of service credit for Ohio service and died not later than one year after the date service terminated.

Qualified survivors will receive the highest benefit from among the following for which they are eligible: dependent-based benefit, service-based benefit, and retirement-based benefit.

Qualified beneficiaries are the spouse, dependent children, and/or dependent parents over age 65.

Dependent-Based Benefit: Monthly survivor benefits are determined according to the number of qualified survivors. These benefits are payable as a percentage of final average salary. The percentages are as follows:

Number of Qualified Dependents	% of Final Average Salary
1	25%
2	40
3	50
4	55
5 or more	60

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

Service – Based Benefit: If a member has 20 or more years of service before death, monthly survivor benefits are determined according to the number of years of service credit. These benefits are payable as a percentage of final average salary. The percentages are as follows:

Years of Service	% of Final Average Salary
20	29%
21	33
22	37
23	41
24	45
25	48
26	51
27	54
28	57
29 or more	60

Retirement–Based Benefit: If a member dies after meeting service retirement eligibility, the monthly survivor benefit is determined as if the member had actually retired and provided a 100% Joint and Survivor benefit to the qualified survivor. Early retirement reduction applies if the member is not eligible for unreduced benefit.

The primary beneficiary may withdraw the deceased member's account in lieu of receiving monthly benefits if there are no children who are qualified survivors.

7. Lump - Sum Withdrawal Option

In lieu of any other pension or survivor benefits, a member who leaves the System can receive his/her member contributions with interest in a lump-sum according to the following schedule:

Credit Service	Lump-Sum
Less than 3 Years	Member Contributions with 2% Interest
3 or More Years and Less than 5 Years	Member Contributions with 3% Interest
5 Years or More	150% of Member Contributions with 3% Interest

The Board has the authority to modify the interest credited to member contributions.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

8. Plans of Payments

Benefits can be paid under the following forms of payment:

- Single Life Annuity;
- Joint and Survivor Annuity -100%, 50% or other; with or without reversion to Single Life Annuity; with one or multiple beneficiaries;
- Annuity certain and;
- Partial lump-sum option – from six to 36 times the monthly Single Life Annuity as a lump-sum with the remainder as an annuity.

9. Cost-of-Living Benefits

The benefit is increased each year by 2% of the base benefit. For members retiring on or after August 1, 2013, the 2% COLA would be paid beginning on the fifth anniversary of the retirement benefit. Future annual increases are calculated on the base benefit and are not compounded.

Effective July 1, 2017, the COLA has been reduced to zero.

Effective July 1, 2022, a one-time ad-hoc COLA of 3% of the base benefit was granted to eligible benefit recipients to begin on the anniversary of their retirement benefit in fiscal year 2023 as long as they retired prior to July 1, 2018.

Effective July 1, 2023, a one-time ad-hoc COLA of 1% of the base benefit was granted to eligible benefit recipients to begin on the anniversary of their retirement benefit in fiscal year 2024 as long as they retired prior to July 1, 2019.

10. Contributions

By Members:	14% of salary.
By Employers:	14% of salaries of their employees who are members.
Rehired Retirees:	Rehired retirees who return to employment after retirement and their employers both contribute to the System. These contributions fund an additional benefit payable after termination of employment. The contributions and interest are paid as a lump-sum or converted to an additional annuity.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

Combined Plan

1. Eligibility for Membership

New members hired on or after July 1, 2001, may elect in writing to participate in the Combined Plan.

2. Service (Normal) Retirement

Eligibility:	Age 60 with five years of service.
Amount:	The balance in the member's Defined Contribution account plus an annual amount equal to 1% of final average salary for the three highest paid years multiplied by years of total Ohio service credit. Effective August 1, 2015, final average salary will be average of the member's five highest salary years. Annual salary is subject to the limit under IRC Section 401(a)(17).

3. Early Retirement

Eligibility:	Before age 60 with five years of service
Amount:	The normal retirement benefit commencing at age 60. At age 50 or later, a member who elects to withdraw the full value of the member's Defined Contribution account may receive the withdrawal value of the formula benefit in a single sum, or leave the formula benefit on account for a benefit payable at age 60.

4. Vesting

Eligibility:	Completion of five years of service credit for the Defined Benefit portion. Member contributions and earnings are 100% vested at all times.
Amount:	A member who terminates with five or more years of service credit can receive the actuarial equivalent present value of the Defined Benefit formula. Prior to age 50, a withdrawal must include both the Defined Benefit and Defined Contribution portions of the account.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

5. Late Retirement

Eligibility: After age 60 with five years of service.

Amount: The formula benefit described in the normal retirement section based on service credit and final average salary at termination without any actuarial adjustments.

6. Disability Allowance

Eligibility: Completion of five or more years of service and permanently incapacitated for the performance of duty. For membership on or after July 1, 2013, completion of ten years of qualifying service credit with STRS Ohio.

Amount: Members have the option of receiving disability benefits under the disability allowance program of the Defined Benefit Plan. All contributions and investment gains in the member's Defined Contribution account are used to fund the benefit. At age 65, the disability allowance converts to a service retirement benefit based on the 2.2% formula. Alternatively, the member can withdraw his/her Defined Contribution account in lieu of receiving the disability allowance.

7. Survivor's Benefit

Eligibility: Upon death after at least 1½ years of credit for Ohio service with at least 1/4 year of such service in the 2½ years preceding death or upon death of a disability retiree. For membership on or after July 1, 2013, upon death at least five years of qualifying service credit.

Amount: Qualified survivors have the option of receiving dependent-based, service-based, or retirement-based benefits described under the Defined Benefit plan. Both employer contributions and the member's contributions and any investment gains in the member's Defined Contribution account are used to fund the benefit. Survivors also have the option to withdraw the Defined Contribution and Defined Benefit portions of the Combined Plan account in lieu of receiving a monthly benefit.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

8. Forms of Payment of Defined Benefit Portion

If the member withdraws his/her Defined Contribution account prior to age 50, then the formula Defined Benefit must be paid in a lump-sum. If the member is at least age 50, then the benefit can be paid as a Single Life Annuity, a Joint and Survivor Annuity as described under the Defined Benefit Plan, or as a lump-sum. All alternative forms of payment are the actuarially equivalent of the Single Life Annuity benefit payable at age 60.

9. Forms of Payment of Member's Defined Contribution Account

If the member withdraws his/her Defined Contribution account prior to age 50, then the account must be paid in a lump-sum. If the member is at least age 50, then the member can elect that the actuarial equivalent of the Defined Contribution account be paid as a Single Life Annuity or a Joint and Survivor Annuity as described under the Defined Benefit plan.

10. Cost-of-Living Benefits

Not available on the service retirement benefit. For disability and survivor benefits, the basic benefit is increased by the increase in the Consumer Price Index each year, but not to exceed 2% of the original base benefit. Effective July 1, 2017, the COLA has been reduced to zero.

11. Contributions

By Members:	14% of salary. 12.0% of salary is deposited into the member's Defined Contribution account and 2.0% is applied to the Defined Benefit portion of the Combined Plan.
By Employers:	14% of salary is used to fund the Defined Benefit formula.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

Defined Contribution Plan

1. Eligibility for Membership

New members hired on or after July 1, 2001, may elect in writing to participate in the Defined Contribution Plan.

2. Service (Normal) Retirement

Eligibility: Termination after age 50.

Amount: The balance in the member's Defined Contribution account.

3. Early Retirement

Eligibility: Termination before age 50.

Amount: The balance in the member's Defined Contribution account.

4. Vesting

Eligibility: Members become vested at a rate of 20% per year in employer contributions and all gains and losses on those contributions. Member contributions and earnings are 100% vested immediately.

Amount: The balance in the member's Defined Contribution account.

5. Disability Allowance

Eligibility: Permanently incapacitated for the performance of duty and termination of employment.

Amount: The balance in the member's Defined Contribution account. At age 50, other payment options are available, but employment must first be terminated.

6. Survivor's Benefit

Eligibility: Upon death.

Amount: The balance in the member's Defined Contribution account. A spouse may either continue to manage the member's Defined Contribution account or withdraw the account.

APPENDIX A – SUMMARY OF OHIO REVISED CODE PLAN PROVISIONS

7. Optional Forms of Payment

The actuarial equivalent of the member's Defined Contribution account can be paid on or after age 50 as a Single Life Annuity or as a Joint and Survivor Annuity as described in the Defined Benefit Plan.

8. Cost-of-Living Benefits

Not available.

9. Contributions

By Members:	14% of salary is deposited into the member’s Defined Contribution account.
By Employers:	Effective July 1, 2022, 11.09% of salary is deposited into the member’s Defined Contribution account. 2.91% of salaries are used to amortize the Unfunded Actuarial Liability of the Defined Benefit Plan. In addition, 2.91% of salary of the salaries of Alternative Retirement Plan members is used to fund the Unfunded Actuarial Liability of the Defined Benefit Plan.

APPENDIX B – GLOSSARY OF TERMS

Funding

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; inflation; rates of investment earnings, and asset appreciation or depreciation; 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:

Amount		Probability of Payment		1/(1+Investment Return)	
$100	x	(1 - .01)	x	1/(1+.1)	= $90

6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, Actuarial Liability, Actuarial Value of Assets, and related \ for a pension plan.

APPENDIX B – GLOSSARY OF TERMS

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.

8. **Actuarially Equivalent**

   Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of actuarial assumptions.

9. **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.

10. **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.

11. **Funded Percentage**

    The ratio of the Actuarial Value of Assets to the Actuarial Liabilities.

12. **Investment Return Assumption**

    The assumed interest rate used for projecting dollar related values in the future.

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. **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.

APPENDIX B – GLOSSARY OF TERMS

15. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of actuarial assumptions, taking into account such items as the effect of advancement in age and increases in future compensation and service credits.

16. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

GASB

1. Actuarially Determined Contribution

A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

2. Actuarial Valuation Date

The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. Deferred Inflow of Resources

An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

4. Deferred Outflow of Resources

A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability, or investment losses that are recognized in future reporting periods.

5. Entry Age Actuarial Cost Method

The actuarial cost method required for GASB 67 and 68 calculations. Under this method, 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. The portion of this Actuarial Present Value allocated to a valuation year is called the service cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future service costs is called the Total Pension Liability.

APPENDIX B – GLOSSARY OF TERMS

6. Measurement Date

The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the actuarial valuation date to the measurement date. The measurement date must be the same as the reporting date for the Plan.

7. Net Pension Liability

The liability of employers and nonemployer contributing entities for employees for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

8. Plan Fiduciary Net Position

The fair or Market Value of Assets.

9. Reporting Date

The last day of the Plan or employer's fiscal year.

10. Service Cost

The portion of the Actuarial Present Value of Projected Benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 67 and 68. The service cost is the normal cost calculated under the Entry Age actuarial cost method.

11. Total Pension Liability

The portion of the Actuarial Present Value of Projected Benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB 67 and 68. The Total Pension Liability is the Actuarial Liability calculated under the Entry Age actuarial cost method. This measurement generally is not appropriate for estimating the cost to settle the Plan's liabilities.