Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

GASB STATEMENT NO. 68 REPORT

FOR THE

BASIC BENEFITS VALUATION

OF THE

SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO

PREPARED AS OF JUNE 30, 2015

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

February 1, 2016

School Employees Retirement System of Ohio
300 East Broad Street
Suite 100
Columbus, OH 43215-3746

Ladies and Gentlemen:

Presented in this report is information to assist the School Employees Retirement System of Ohio (System) in providing necessary Governmental Accounting Standards Board (GASB) Statement No. 68 discolsure information to participating employers. GASB Statement No. 68 establishes accounting and financial reporting requirements for governmental employers who provide pension benefits to their employees through a trust. This report has been prepared as of June 30, 2015, for the fiscal year ending June 30, 2016.

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of June 30, 2015 (The Measurement Date). The valuation was based upon data, furnished by System staff, concerning active, inactive and retired members, along with pertinent financial information.

To the best of our knowledge, this report is complete and accurate. The necessary calculations were performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems.

The calculations were prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board, and, in our opinion, meet the requirements of GASB 68.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the System, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System. In addition, the calculations were completed in compliance with the laws governing the System. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144
Phone (678) 388-1700 • Fax (678) 388-1730
www.CavMacConsulting.com
Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

Respectfully submitted,

Todd B. Green ASA, FCA, MAAA
Principal and Consulting Actuary

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

TBG:JJG/bvb

TABLE OF CONTENTS

REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
SCHOOL EMPLOYEES RETIREMENT SYSTEM OF OHIO
PREPARED AS OF JUNE 30, 2015

SECTION I – SUMMARY OF COLLECTIVE AMOUNTS

Valuation Date (VD):	June 30, 2015
Measurement Date (MD):	June 30, 2015
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.75%
Municipal Bond Index Rate	N/A
Fiscal Year in which Plan's Fiduciary Net Position is projected to be depleted from future benefit payments for current members	N/A
Single Equivalent Interest Rate	7.75%
Net Pension Liability (Fiscal Year Ended 2014):	
Total Pension Liability (TPL)	$ 17,881,827,171
Fiduciary Net Position (FNP)	12,820,884,107
Net Pension Liability (NPL = TPL – FNP)	$ 5,060,943,064
FNP as a percentage of TPL	71.70%
Net Pension Liability (Fiscal Year Ended 2015):	
Total Pension Liability (TPL)	$ 18,503,280,961
Fiduciary Net Position (FNP)	12,797,184,030
Net Pension Liability (NPL = TPL – FNP)	$ 5,706,096,931
FNP as a percentage of TPL	69.16%
Pension Expense (PE):	$359,809,563
Deferred Outflows of Resources:	$91,878,659
Deferred Inflows of Resources:	$189,061,531

SECTION II – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), "Accounting and Financial Reporting for Pensions", in June 2012. GASB 68's effective date for employers is the first fiscal year beginning after June 15, 2014. This report, prepared as of June 30, 2015 (the Measurement Date), presents information to assist the System in providing the required information under GASB 68 to the participating employers of the School Employees Retirement System of Ohio (SERS) for fiscal year ending June 30, 2016. Much of the material provided in this report is based on the results of the GASB 67 report for the System, which was issued on December 10, 2015. See that report for more information on the member data, actuarial assumptions and methods used in developing the GASB 67 results.

GASB 68 replaces GASB 27, and represents a significant departure from the requirements of the prior statement. GASB 27 required employers providing benefits through pension plans to report items consistent with the results of the plan's actuarial valuations, as long as those valuations met certain parameters. GASB 68 creates disclosure and reporting requirements that may or may not be consistent with the basis used for funding the Plan.

Two major changes in GASB 68 are the requirements to include a proportionate share of a Net Pension Liability (NPL) and to recognize a proportionate share of a Pension Expense (PE) in the financial statements of each of the participating employers and non-employer contributing entities.

The NPL shown in the GASB Statement No. 67 Report for the System as of June 30, 2015 and submitted December 10, 2015 is the collective NPL used for purposes of GASB 68. Please refer to that report for the derivation of the collective NPL.

Pension Expense includes amounts for service cost (the normal cost under the Entry Age Normal actuarial cost method for the year), interest on the Total Pension Liability (TPL), changes in benefit structure, amortization of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and amortization of investment gains/losses. The actuarial experience and assumption change impacts are amortized over the average expected remaining service life of the Plan membership as of the Measurement Date, and investment gains/losses are amortized over five years. The development of the collective PE is shown in Section V.

The unrecognized portions of each year's experience, assumption changes and investment gains/losses are used to develop deferred inflows and outflows, which also must be included in the employer's financial statements. The development of the collective deferred inflows and outflows is shown in Section III.

The sections that follow provide the results of all the required aggregate calculations, present in the order laid out in GASB 68 for note disclosure and Required Supplementary Information (RSI). The System will prepare the calculation of the proportional share of the NPL, Pension Expense, and Deferred Infows and Outflows for each participating employer or non-employer contributing entity.

Section I of this report is a summary of the principal results of the collective amounts under GASB 68. Section III and Section IV provides the results of all the necessary calculations, presented in the order laid out in GASB 68 for note disclosure and Required Supplementary Information (RSI).

SECTION III – FINANCIAL STATEMENT NOTES

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference. Amounts are shown in aggregate.

Paragraph 74: The information required to be prepared by the System and/or the individual employer.

Paragraph 75: The information required to be prepared by the individual employer.

Paragraphs 76(a) - (b): The information required is to be supplied by the System.

Paragraph 77: This paragraph requires information regarding the actuarial assumptions used to measure the TPL. The actuarial assumptions utilized in developing the TPL are outlined in Schedule B. The total pension liability was determined by an actuarial valuation as of June 30, 2015, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.25 percent
Salary increases	4.00 - 22.00% percent, including inflation
Investment rate of return	7.75 percent, net of pension plan investment expense, including inflation

Mortality rates were based on the 1994 Group Annuity Mortality Table set back one year for both men and women. Special tables are used for the period after disability retirement. This assumption measures the probabilities of each benefit payment being made after retirement. There is sufficient margin in the current mortality tables for possible future improvement in mortality rates and that margin will be reviewed again when the next experience investigation is conducted.

The actuarial assumptions used were based on the results of an actuarial experience study for the period ending July 1, 2005 to June 30, 2010

Paragraph 78:

(a) Discount rate: The discount rate used to measure the total pension liability was 7.75%.

(b) Projected cash flows: The projection of cash flows used to determine the discount rate assumed that local employers would contribute the actuarially determined contribution rate of projected compensation over the remaining 27-year amortization period of the unfunded actuarial accrued liability. If the funded ratio is less than 70%, the entire 14% employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 70% but less than 80%, at least 13.50% of the employers' contribution shall be allocated to SERS' basic benefits. If the funded ratio is 80% but less than 90%, at least 13.25% of the employers' contribution shall be allocated to SERS' basic benefits.

(c) **Long-term rate of return:** The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared every five years for the System. The most recent analysis, performed for the period covering fiscal years 2005 through 2010, is outlined in a report dated April 14, 2011. Several factors are considered in evaluating the long-term rate of return assumption including long-term historical data, estimates inherent in current market data, and a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected return, net of investment expense and inflation) were developed by the investment consultant for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The capital market assumptions developed by the investment consultant are intended for use over a 10-year horizon and may not be useful in setting the long-term rate of return for funding pension plans which covers a longer timeframe. The assumption is intended to be a long-term assumption and is not expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years.

(d) **Municipal bond rate:** the discount rate determination does not use a municipal bond rate.

(e) **Periods of projected benefit payments:** projected future benefit payments for all current plan members were projected through 2117.

(f) **Assumed Asset Allocation:** The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Cash	1.0%	0.00%
US Stocks	22.5	5.00
Non-US Stocks	22.5	5.50
Fixed Income	19.0	1.50
Private Equity	10.0	10.00
Real Estate	10.0	5.00
Hedge Funds	15.0	7.50
Total	100%	

(g) **Sensitivity Analysis:** This paragraph requires disclosure of the sensitivity of the collective net pension liability to changes in the discount rate. The following presents the net pension liability of the System, calculated using the discount rate of percent, as well as what the System's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75 percent) or 1-percentage-point higher (8.75 percent) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
System's net pension liability	$7,912,305,932	$5,706,096,931	$3,848,287,246

Paragraph 80(a): This paragraph requires the disclosure of the employer's proportionate share of the Collective NPL and if an employer has as special funding situation, the portion of the non-employer contributing entities proportionate share of the collective NPL that is associated with the employer. This will be determined by the System.

Paragraph 80(b): This paragraph requires disclosure of the employer's proportion of the collective NPL and the change in the proportion since the prior measurement date. This will be determined by the System.

Paragraph 80(c): June 30, 2015 is the actuarial valuation date upon which the TPL is based. No update procedures were used to determine the TPL.

Paragraphs 80(d)-(e): There were no changes in assumptions or benefit terms since the prior measurement period.

Paragraph 80(f): There were no changes between the measurement date of the collective net pension liability and the employer's reporting date.

Paragraph 80(g): Please see Section V of the report for the development of the collective Pension expense. PE for each employer will be determined by the System.

Paragraph 80(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce pension expense they are labeled deferred inflows. If they will increase pension expense they are labeled deferred outflows. As noted in the previous section, the amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.

The table below provide a summary of the deferred inflows and outflows as of the Measurement Date. The allocation of deferred inflows and outflows will be determined by the System.

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$91,878,659	$0
Changes of assumptions	0	0
Net difference between projected and actual earnings on plan investments	0	$189,061,531
Employer contributions subsequent to the Measurement Date	0	0
Total	$91,878,659	$189,061,531

Paragraph 80(i): The collective amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Deferred Amounts to be recognized in Fiscal Years Following the Reporting Date	**Deferred Outflows of Resources**	**Deferred Inflows of Resources**
Year 1	$29,944,982	$(98,603,215)
Year 2	29,944,982	(98,603,215)
Year 3	29,509,892	(98,603,214)
Year 4	109,226,916	0
Year 5	0	0
Thereafter	0	0

Paragraph 80(j): The amount of revenue recognized for the support provided by non-employer contributing entities for the participating employers. The System will provide this information.

SECTION IV – REQUIRED SUPPLEMENTARY INFORMATION

There are several tables of Required Supplementary Information (RSI) that need to be included in the System's financial statements:

Paragraphs 81(a) and (b): This information will be provided by the System.

Paragraph 82: Information about factors that significantly affect trends in the amounts reported in the schedules required by paragraph 81 should be presented as notes to the schedule. At this point only one year is being reported, but comments on additional years will be added as they occur.

Changes of benefit terms: None.

Changes of assumption: None.

Method and assumptions used in calculations of actuarially determined contributions. The actuarially determined contribution rates are determined on an annual basis for the fiscal year beginning July 1, 2015, determined as of June 30, 2015. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	27 years
Asset valuation method	4-year smoothed market
Inflation	3.25 percent
Salary increase	4.00 – 22.00% percent, including inflation
Investment rate of return	7.75 percent, net of pension plan investment expense, including inflation

SECTION V – PENSION EXPENSE

As noted earlier, the Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal actuarial funding method. To this is added interest on the TPL at the rate of return in effect as of the prior measurement date.

The next three items refer to any changes that occurred in the TPL (i.e., actuarial accrued liability (AAL) under EAN) due to:

1. Benefit changes,
2. Actual versus expected experience or
3. Changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit improvement for existing Plan members, or negative if there is a benefit reduction. For the year ended June 30, 2015 there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership. The remaining service life of active members is the average number of years the active members are expected to remain active. For the year ended this number is 10.26. The remaining service life of the inactive members is, of course, zero. The figure to use for the amortization is the weighted average of these two amounts, or 4.13. The development of the average remaining service life is shown in the table below.

Calculation of Weighted Average Years of Working Lifetime

Category	Number (1)	Average Years of Working Lifetime (2)
a. Active Members	121,251	10.26
b. Inactive Members	179,775	0.00
c. Total	301,026	
Weighted Average Years of Working Lifetime [(a1 * a2) + (b1 * b2)]/c1		4.13

The last items under changes in TPL are changes in actuarial assumptions. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership, similar to the way experience gains and losses are recognized.

Member contributions for the year and projected earnings on the FNP at the discount rate serve to reduce the expense. One-fifth of current-period difference between actual and projected earning on the FNP are recognized in the pension expense.

	Investment Earnings (Gain)/Loss as of June 30, 2015	
a	Expected asset return rate	7.75%
b	Beginning of year market value assets (BOY)	$ 12,820,884,107
c	Adjustment to BOY market value of assets	(10,261,296)
d	BOY market value assets	12,810,622,811
e	End of year market value assets (EOY)	12,797,184,030
f	Expected return on BOY for plan year (a x d)	992,823,268
	External Cash Flow	
	Contributions - employer	395,804,105
	Contributions - member	303,866,076
	Refunds of contributions	(60,635,651)
	Benefits paid	(1,076,498,383)
	Admin expenses	(19,305,477)
	Other changes	1,874,997
g	Total net external cash flow	(454,894,333)
h	Expected return on net cash flow (a x 0.5 x g)	(17,627,155)
i	Projected earnings for plan year (f + h)	975,196,113
j	Net investment income (c - b - e)	441,455,552
	Investment earnings (gain)/loss (i - j)	**533,740,561**

The current year portions of previously determined experience, assumption, and earnings amounts, recognized as deferred inflows and outflows are included. Deferred outflows are added to the PE and deferred inflows are subtracted from the PE. Finally administrative expenses and other miscellaneous items are included.

The calculation of the collective Pension Expense for the year ended June 30, 2015 for the System is shown in the following table.

Collective Pension Expense Determined as of the Measurement Date	
Service Cost	$338,060,547
Interest on the TPL and Cash Flow	$1,341,777,662
Current-period benefit changes	$0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	$19,067,703
Expensed portion of current-period changes of assumptions	$0
Member contributions	($303,866,076)
Projected earnings on plan investments	($975,196,113)
Expensed portion of current-period differences between actual and projected earnings on plan investments	$106,748,112
Administrative expense	$19,305,477
Other *	$8,386,299
Recognition of beginning deferred outflows of resources as pension expense	$10,877,279
Recognition of beginning deferred inflows of resources as pension expense	($205,351,327)
Pension Expense	$359,809,563

* Includes a market value adjustment of $10,261,296 and an employer contribution adjustment of $1,874,997.

SCHEDULE A

SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS

This schedule summarizes the major retirement benefit provisions of School Employees Retirement System of Ohio included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Contributions for Basic Benefits Members contribute 10% of pay and employers contribute 14% of pay. Employer contributions not required to finance basic benefits are allocated to the health care program.

Final Average Salary Average annual salary over the member's three highest years of service.

Normal Retirement

Condition for Retirement

Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017 Attainment of age 65 with at least five years of creditable service, or completion of 30 years of creditable service, regardless of age.

Members attaining 25 years of service after August 1, 2017 Attainment of age 67 with at least 10 years of creditable service, or attainment of age 57 with at least 30 years of creditable service. Buy-up option available.

Amount of Allowance	The annual retirement allowance payable shall not be greater than 100% of final average salary, and is the greater of:

1. Money Purchase - the greater of:
   The sum of:
   a. An annuity based on the value of the member's accumulated contributions at retirement
   b. A pension equal to the annuity
   c. For members who have 10 or more years of service credit prior to 10/1/1956, an annual benefit of $180.

2. Defined Benefit - the greater of:
   The sum of:
   a. 2.2% of final average salary multiplied by the member's years of service up to 30,
   b. 2.5% of final average salary multiplied by the member's years of service in excess of 30,

   or:
   c. $86 multiplied by the years of service.

Early Retirement

Condition for Early Retirement

Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017	Not eligible for unreduced service retirement but has attained age 55 with at least 25 years of service, or age 60 with five years of service.
Members attaining 25 years of service after August 1, 2017	Attainment of age 62 with at least 10 years of creditable service, or attainment of age 60 with at least 25 years of creditable service.

Amount of Allowance

Retire before August 1, 2017 or have 25 years of service or more on or before August 1, 2017

Normal retirement allowance accrued to the date of early retirement. The Defined Benefit amount determined above is adjusted by the following percentages based on attained age or years of service:

Attained Age	**Years of Ohio Service Credit**	**Percentage**
58	25	75%
59	26	80
60	27	85
61		88
	28	90
62		91
63		94
	29	95
64		97

Members attaining 25 years of service after August 1, 2017

Actuarial equivalent of the normal retirement allowance accrued to the date of early retirement. The Defined Benefit amount determined above is actuarially adjusted for the years before age 65 (age 67 if after August 1, 2017) or 30 years of service, whichever is shorter, but in no event is the adjusted benefit less than the following percentages of the Defined Benefit amount based on years of service:

Years of Ohio Service Credit	**Percentage**
25	75%
26	80
27	85
28	90
29	95

Disability Retirement

Condition for Retirement

An allowance is paid upon becoming permanently disabled after completion of at least 5 years of total service credit.

Amount of Allowance

1. For those who were active members prior to July 29, 1992 and did not elect the benefit structure outlined below, an allowance based on service to date of disablement, plus, if the age at disablement is less than 60, continuous service to age 60. The allowance is computed in the same manner as the defined benefit service retirement allowance, subject to a minimum of 30% of FAS and a maximum of 75% of FAS. It is payable for life, unless terminated.

2. For those who became active members after July 28, 1992, and for those who were active members prior to July 29, 1992 who so elected, an allowance equal to the greater of (i) 45% of FAS, or (ii) the lesser of 60% of FAS, or the allowance computed in the same manner as the defined benefit service retirement allowance. The allowance will continue until:

   a. The date the member is granted a service retirement benefit, or
   b. The date the allowance is terminated, or
   c. The later of the date the member attains age 65 or the date the disability allowance has been paid for the minimum duration in accordance with the following schedule:

Age at Disability	Minimum Duration In Months
60 and earlier	60
61	60
62	48
63	48
64	36
65	36
66	24
67	24
68	24
69 and older	12

Death Benefits Prior to Retirement

Death While Eligible to Retire

If a member dies in service after becoming eligible to retire with a service allowance and leaves a surviving spouse or other sole dependent beneficiary, the survivor may elect to receive the same amount that would have been paid had the member retired the last day of the month of death and elected the 100% joint and survivor form of payment.

Survivor (Death-in-Service) Allowances

Condition for Benefit

Upon the death of a member with at least 1½ years of Ohio service credit and with at least ¼ year of Ohio contributing service credit within 2½ years prior to the date of death, the survivor allowances are payable as follows:

1. Qualified Spouse: A monthly allowance commencing at age 62, except that the benefit is payable immediately if: (1) the qualified deceased member had 10 or more years of Ohio service credit; or (2) is caring for a surviving child, or (3) is incompetent.
2. Qualified Child: For allowances that commenced before January 7, 2013, an allowance is payable to the qualified child of a deceased member who has never been married and is under age 18, under age 22 and in school, or adjudged incompetent prior to the member's death and the child attaining age 18 or age 22 if attending school. For allowances that commence on or after January 7, 2013 an allowance is payable to the qualified child of a deceased member who has never been married and is under age 19, or adjudged incompetent prior to the member's death and prior to the child attaining age 19.
3. Qualified Parent's Allowance: A monthly allowance is payable to a dependent parent age 65 or more.

Amount of Allowances

Except when survived by a qualified child(ren), upon the death of a member prior to retirement, the accumulated contributions of the member without interest is payable. Alternatively, the beneficiary may elect the following amounts, payable monthly while eligible:

Number of Qualified Survivors	Annual Benefit as Percent of Member's FAS	Minimum Monthly Allowance
1	25%	$96
2	40	186
3	50	236
4	55	236
5 or more	60	236

If the deceased member had attained at least 20 years of service, the total benefits payable to all qualified survivors are not less than:

Years of Service	Annual Benefit as Percent of Member's FAS
20	29%
21	33
22	37
23	41
24	45
25	48
26	51
27	54
28	57
29 or more	60

Termination Benefits

Refund of Members' Accumulated Contributions

In the event a member leaves service before any monthly benefits are payable on his/her behalf, his/her accumulated contributions, without interest, may be refunded.

Deferred Benefits

Members who retire prior to August 1, 2017 must have at least 5 years of service credit and those members who retire on and after August 1, 2017 must have at least 10 years of service credit and are eligible to draw the benefit the first of the month following their 62nd birthday.

Normal Form of Benefit	Single Life Annuity
Optional Forms of Benefit	A member upon retirement may elect to receive his/her allowance in one of the following forms that are computed to be actuarially equivalent to the applicable retirement allowance: Upon the death of a retiree, 50%, 100%, or some other percentage of his/her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary. A reduced retirement allowance shall be continued throughout the life of the pensioner, but with the further guarantee of payment to the pensioner, his/her beneficiary or his/her estate for a specified number of years certain. A member can select a partial lump-sum option at retirement. Under this option, the partial lump- sum shall not be less than 6 times and not more than 36 times the unreduced monthly benefit, and the monthly benefit will be actuarially reduced. In addition, the monthly benefit payable cannot be less than 50% of the unreduced amount.
Post-Retirement Death Benefit	Regardless of the form of benefit selected, a lump sum benefit of $1,000 is paid at the death of the retiree.
Post-Retirement Increases	On each anniversary of the initial date of retirement, the allowances of all retirees and survivors are increased by 3% of the base benefit.
Medicare Part B	Each recipient of a service retirement benefit, a disability benefit or a survivor benefit who was credited with at least 10 years of service and is covered under Medicare Part B and has chosen the health care option, is reimbursed $45.50 per month for premiums for that coverage.

Reemployed Retirants

Eligibility Effective	July 1, 1991, service retirees of SERS, or service or disability retirees of one of the other four Ohio retirement systems who are employed in a SERS covered position are required to contribute to a money purchase annuity, a type of defined contribution plan.
Amount of Allowance	Upon termination of employment, a reemployed retirant who has attained age 65 is eligible to receive an annuity based on the amount of his/her accumulated contributions, and an equal amount of employer contributions, plus interest to the effective date of retirement. Effective July 1, 2006 the amount of employer contributions will be determined by the Board. Interest is granted on the reemployed retirant's prior fiscal year account balance, calculated using a rate determined by the SERS Board, compounded annually. The benefit is payable as a lump sum or as an annuity if the amount of such annuity is at least $25. Upon termination of employment, a re-employed retirant who has not attained age 65 may request a lump sum refund of his/her own contributions; there is no payment of employer contributions or interest.
Benefits Payable Upon Death	If a reemployed retirant dies while employed, a lump sum payment of the monthly annuity, discounted to the present value using the current actuarial assumption rate of interest, will be paid to his/her beneficiary. If a reemployed retirant dies while receiving a monthly annuity, a lump sum payment will be made to a beneficiary in an amount equal to the excess, if any, of the lump sum payment the reemployed retirant would have received at the effective date of retirement over the sum of the annuity payments received by the reemployed retirant to the date of death.
Member Contributions	Each reemployed retirant is required to contribute 10% of his/her pay by payroll deductions.
Employer Contributions	Employer contributions are expressed as percents of member covered payroll. Employers are required to contribute 14% of payroll.

Other Benefits	Reemployed retirants of SERS are not eligible to receive any of the other benefits provided to SERS members.
Member Contributions	10% of salary.

SCHEDULE B

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The actuarial assumptions used in the valuation were adopted by the Board in April, 2011.

INTEREST RATE: 7.75% per annum, compounded annually (net after all System expenses).

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

Service	Annual Rates of Withdrawal
0	45.00%
1	31.00
2	23.00
3	17.00
4	13.00
5	9.00
10	4.00
15	2.00
20	2.00
25	1.50

	Annual Rates of			
	Death		Disability	
Age	Male	Female	Male	Female
20	.013%	.007%	.020%	.020%
25	.017	.007	.038	.020
30	.020	.009	.068	.026
35	.021	.012	.122	.054
40	.027	.018	.210	.100
45	.040	.024	.310	.168
50	.065	.036	.410	.260
55	.111	.057	.510	.360
60	.199	.111	.550	.400
65	.363	.216	.550	.400
70	.593	.343	.550	.400
74	.851	.510	.550	.400

Annual Rates of Normal Retirements		
Age	Male	Female
50	28.0%	25.0%
55	20.0	21.0
60	18.0	17.0
62	20.0	20.0
65	25.0	25.0
70	14.0	14.0
75	100.0	100.0

For members who are not eligible to retire prior to August 1, 2017, the assumed rates of retirement in the first year of eligibility for a normal retirement and upon completing 30 years of service are 28%. The assumed rates of early retirement for members who retire prior to August 1, 2017 are 14% for males and 13% for females aged 55 to 59, and 8.5% for males and 9.5% for females aged 60 to 64.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

		Annual Rates of	
Service	Merit & Seniority	Base (Economy)	Increase Next Year
0	18.00%	4.00%	22.00%
1	8.00	4.00	12.00
2	5.50	4.00	9.50
3	4.00	4.00	8.00
4	3.00	4.00	7.00
5	2.00	4.00	6.00
6	1.25	4.00	5.25
7	1.00	4.00	5.00
8	0.50	4.00	4.50
9	0.25	4.00	4.25
10-14	0.00	4.00	4.00
15 & over	0.00	4.00	4.00

PAYROLL GROWTH: 4.00% per annum, compounded annually.

PRICE INFLATION: 3.25% per annum, compounded annually.

DEATH AFTER RETIREMENT: The mortality table, for post-retirement mortality, used in evaluating allowances to be paid is the 1994 Group Annuity Mortality Table, set back one year for both men and women. Special tables are used for the period after disability retirement. This assumption is used to measure the probabilities of each benefit payment being made after retirement. There is sufficient margin in the current mortality tables for possible future improvement in mortality rates and that margin will be reviewed again when the next experience investigation is conducted.

MARRIAGE ASSUMPTION: 80% married with the husband three years older than his wife.

VALUATION METHOD: Entry age normal cost method. Entry age is established on an individual basis.

ASSET VALUATION METHOD: The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 25% of the difference between market value and expected market value. The actuarial value of assets cannot be less than 80% or more than 120% of market value.

SCHEDULE C

SCHEDULE OF DIFFERENCES BETWEEN EXPECTED AND ACTUAL EXPERIENCE

Year	Difference Between Expected and Actual Experience	Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences Between Expected and Actual Experience					
			2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Thereafter
2013-2014	$53,951,305	4.96	$10,877,279	$10,877,279	$10,877,279	$10,442,189	$0	$0
2014-2015	$78,749,615	4.13	$19,067,703	$19,067,703	$19,067,703	$19,067,703	$2,478,803	$0
			$29,944,982	$29,944,982	$29,944982	29,509,892	$2,478,803	$0

DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES ARISING FROM DIFFERENCES BETWEEN EXPECTED AND ACTUAL EXPERIENCE

Year	Experience Losses (a)	Expereince Gains (b)	Amounts Recognized in Pension Expense Through June 30, 2015	Deferred Ouflows of Resources (a) – (c)	Deferred Inflows of Resources (b) – (c)
2013-2014	$53,951,305	$0	$21,754,558	$32,196,747	$0
2014-2015	$78,749,615	$0	$19,067,703	$59,681,912	$0
			$40,822,261	$91,878,659	$0

SCHEDULE OF DIFFERENCES BETWEEN PROJECTED AND ACTUAL EARNINGS ON PENSION PLAN INVESTMENTS

Year	Difference Between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Differecnes Betweeen Projected and Actual Earnings on Pension Plan Investments					
			2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Thereafter
2013-2014	($1,026,756,634)	5.0	($205,351,327)	($205,351,327)	($205,351,327)	($205,351,326)	$0	$0
2014-2015	$533,740,561	5.0	$106,748,112	$106,748,112	$106,748,112	$106,748,112	$106,748,113	$0
			($98,603,215)	($98,603,215)	($98,603,215)	($98,603,214)	$106,748,113	$0

DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES ARISING FROM DIFFERENCES BETWEEN EXPECTED AND ACTUAL INVESTMENT EARNINGS

Year	Differences Between Expected and Actual Investment Earnings (a)	Amounts Recognized in Pension Expense through June 30, 2015 (b)	Amounts of Deferred Resources (Inflows)/Outflows (a) – (b)
2013-2014	$(1,026,756,634)	($410,702,654)	($616,053,980)
2014-2015	$533,740,561	$106,748,112	$426,992,449
		($303,954,542)	($189,061,531)

SCHEDULE OF CHANGES OF ASSUMPTION

Year	Changes of Assumptions	Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions					
			2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Thereafter
2013-2014	$0	4.96	$0	$0	$0	$0	$0	$0
2014-2015	$0	4.13	$0	$0	$0	$0	$0	$0
			$0	$0	$0	$0	$0	$0

DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES ARISING FROM CHANGES OF ASSUMPTION

Year	Changes Due to Changes in Assumptions (Decreases)/Increases (a)	Amounts Recognized in Pension Expense Through June 30, 2015 (b)	Deferred Ouflows/(Inflows) of Resources (a) – (b)
2013-2014	$0	$0	$0
2014-2015	$0	$0	$0
		$0	$0

SUMMARY OF RECOGNIZED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

	Net Increase/(Decrease) in Pension Expense					
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	Thereafter
Differences between Expected and Actual Experience	$29,944,982	$29,944,982	$29,944982	29,509,892	$2,478,803	$0
Changes of Assumptions	$0	$0	$0	$0	$0	$0
Differences between Projceted and Actual Earnings on Pension Plan Investments	($98,603,215)	($98,603,215)	($98,603,215)	($98,603,214)	$106,748,113	$0
Grand Total	($68,658,233)	($68,658,233)	($68,658,233)	($69,603,214)	$109,226,916	$0