PUBLIC SCHOOL RETIREMENT SYSTEM
OF THE CITY OF ST. LOUIS

MINUTES OF THE BOARD OF TRUSTEES REGULAR MEETING

June 20, 2016

I. ROLL CALL AND ANNOUNCEMENT OF A QUORUM

The June meeting of the Board of Trustees of the Public School Retirement System of the City of St. Louis (PSRSSTL) was called to order at 4:30 p.m., Monday, June 20, 2016. The meeting was held in the 2nd floor boardroom of the PSRSSTL office building located at 3641 Olive Street, St. Louis, Missouri. Joseph Clark, Chairman of the Board of Trustees, was the presiding officer.

Roll Call was taken and Trustees Christina Bennett, Paula Bentley, Joseph Clark, Yvette Levy, Charles Shelton, Eural Thomas and Janusz Wolynski were present. The Board of Trustees had a quorum at the meeting. Trustee Sheila Goodwin, Mary Houlihan and John Moten joined the meeting in progress. Trustee Rick Sullivan was absent.

Executive Director, Andrew Clark, Accounting Specialist, Terry Mayes, PSRSSTL Attorney Representative, Matt Gierse, PSRSSTL Actuary, Steve Siepman, and several interested parties were also in attendance.

II. APPROVAL OF MINUTES FROM LAST MEETING

Charles Shelton made a motion, seconded by Yvette Levy, to approve the minutes of the Board of Trustees Regular Meeting of April 18, 2016.

By voice vote, motion carried.

III. READING OF COMMUNICATIONS TO THE BOARD OF TRUSTEES

None

IV. PRESENTATIONS BY INTERESTED PARTIES

Retiree, Harvey Cloyd, expressed his opinion on the lack of a COLA and concerns over the mailing of payroll checks. Retiree, Erma Nevels, submitted a question on whether SLPS or the retirement system is responsible for approving a COLA.

V. CONSENT AGENDA

Christina Bennett made a motion, seconded by Mary Houlihan, to approve the Retirements and Benefits of May and June 2016.

By voice vote, motion carried

Christina Bennett made a motion, seconded by Paula Bentley, to approve the Refunds and Bills of April and May 2016.

By voice vote, motion carried.

VI. UNFINISHED BUSINESS

None

VII. REPORT OF THE CHAIRPERSON

None

VIII. REPORT OF THE EXECUTIVE DIRECTOR

The Executive Director reported on the status of the Annual Report Summary mailing to the membership and Trustee Travel.

IX. REPORT OF THE INVESTMENT CONSULTANT

None

X. REPORT OF THE ACTUARY

The Actuary presented the results of the 2016 Actuarial Valuation Report by reviewing a discussion document. The Actuary presented findings on the system's member census information and demographics; the system's assets, liabilities and funding ratios; and the annual required contributions (ARC) for the St. Louis Public Schools Board of Education, PSRSSTL and the Charter Schools. The Actuary reported on the impacts to fund reporting from recently adopted Governmental Accounting Standard Board (GASB) Statements No. 67 and No. 68. There was extended discussion on the system's actuarial assumptions, particularly the 8% discount rate. The Actuary assured the Trustees that the Five-Year Experience Study to be presented later in the year would include an analysis of the actuarial assumptions and possibly change recommendations. The Actuary addressed all questions to the satisfaction of the Trustees.

Christina Bennett made a motion, seconded by John Moten, to adopt the 2016 Actuarial Valuation Report as presented by the Actuary.

A roll call vote was taken.

Christina Bennett	Yes	Paula Bentley	Yes	Joseph Clark	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Yvette Levy	Yes
John Moten	Yes	Charles Shelton	Yes	Eural Thomas	Yes
Janusz Wolynski	Yes				

With ten yes votes, motion carried.

XI. REPORTS OF COMMITTEES OF THE BOARD OF TRUSTEES

The Chairman asked for reports from the Committees.

Benefits Committee

Charles Shelton, Chair of the Benefits Committee, mentioned the upcoming presentation by the Health Insurance Consultant on the 2017 health insurance renewals and made comments on the Five-Year Actuarial Experience Study.

Trustee Business Committee

None

Investment Committee

Joe Clark, Chair of the Investment Committee, reported on the meetings of April 21, 2016, and May 19, 2016, by reviewing the meeting minutes and asking for motions on several recommendations being brought forward by the Committee.

Christina Bennett made a motion, seconded by Charles Shelton, to hire Denham Capital Management LP and commit $17 million to the Denham Oil and Gas Fund as recommended by the Investment Committee.

A roll call vote was taken.

Christina Bennett	Yes	Paula Bentley	Yes	Joseph Clark	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Yvette Levy	Yes
John Moten	Yes	Charles Shelton	Yes	Eural Thomas	Abstain
Janusz Wolynski	Yes				

With nine yes votes and one abstention, motion carried.

Christina Bennett made a motion, seconded by Sheila Goodwin, to terminate Permal Asset Management and liquidate all assets as recommended by the Investment Committee.

A roll call vote was taken.

Christina Bennett	Yes	Paula Bentley	Yes	Joseph Clark	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Yvette Levy	Yes
John Moten	Yes	Charles Shelton	Yes	Eural Thomas	Yes
Janusz Wolynski	Yes				

With ten yes votes, motion carried.

John Moten made a motion, seconded by Sheila Goodwin, to hire Grosvenor Capital Management as a multi-strategy hedge fund money manager as recommended by the Investment Committee.

A roll call vote was taken.

Christina Bennett	Abstain	Paula Bentley	Yes	Joseph Clark	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Yvette Levy	Yes
John Moten	Yes	Charles Shelton	Yes	Eural Thomas	Yes
Janusz Wolynski	Yes				

With nine yes votes and one abstention, motion carried.

The Chair reminded the Trustees that all are welcome to attend the upcoming Investment Committee meeting on Thursday, June 23, 2016.

Legislative, Rules & Regulations Committee

None

Professional Contracts Committee

Eural Thomas, Chair of the Professional Contracts Committee, reminded the Trustees of the upcoming scheduled RFP's.

XII. NEW BUSINESS

There was brief discussion to clarify the process for mailing pension payroll checks and how retirees are encouraged to change to the direct deposit payment method.

XIII. REPORT OF THE ATTORNEY

None

XIV. ADJOURNMENT

Christina Bennett made a motion, seconded by Charles Shelton, to adjourn the meeting.

By voice vote, motion carried and the meeting adjourned at 5:55 p.m.

Attachments:

- Retirements Paid: May and June 2016
- Refunds & Bills Paid: April and May 2016
- Letter from Erma Nevels to the SAB of the SLPS, dated May 19, 2016, with response
- 2016 Actuarial Valuation Report and Results
- 2016 GASB Statement Nos. 67 & 68 from Actuary
- 2016 Trustee Travel Report

To be Authorized and Approved
by the Board of Trustees

APPLICATIONS FOR RETIREMENT

NAME \ POSITION	RETIREMENT DATE	RETIREMENT TYPE	CREDITED SERVICE	FINAL AVG SALARY	MONTHLY BENEFIT
Yeva Golynskaya Teacher	4/1/2016	Normal	19.0722	$67,983.89	$2,161.00
Evelyn Hines Teacher	4/1/2016	Normal	19.5833	$72,415.36	$2,363.55
Darrel Kirkman Custodian	4/1/2016	Disability	19.0885	$39,384.43	$1,252.98
Joyce Lewis Administrative Assistant	4/1/2016	Normal	8.6974	$31,498.61	$456.59
Deborah Minges Teacher	4/1/2016	Normal	7.9389	$43,312.63	$573.09
Elizabeth Okpaleke Social Worker	4/1/2016	Disability	21.9344	$64,457.41	$1,847.41
Donna Presnell Teacher	4/1/2016	Disability	11.6722	$53,568.62	$1,116.01
Peggy Starks Principal	4/1/2016	Early	14.4482	$89,766.67	$1,307.73
LeJuana Young-Valiant In-School Suspension Monitor	4/1/2016	Early	16.5611	$55,704.29	$1,230.01

To be Authorized and Approved
by the Board of Trustees

APPLICATIONS FOR RETIREMENT

NAME \ POSITION	RETIREMENT DATE	RETIREMENT TYPE	CREDITED SERVICE	FINAL AVG SALARY	MONTHLY BENEFIT
William Cash Teacher	5/1/2016	Normal	24.6696	$74,552.66	$2,617.77
Joyce Cooks Teacher	5/1/2016	Early	17.5778	$69,966.03	$1,992.81
Steven Davis Clerk Typist II	5/1/2016	Normal	26.0290	$35,733.18	$1,550.17
Vanessa Harris Teacher	5/1/2016	Early	18.8056	$65,282.42	$1,841.49
Sheryl Hayes Child Care Specialist	5/1/2016	Disability	13.1833	$35,303.14	$775.69
Brad Owens Ironworker	5/1/2016	Normal	19.8704	$64,246.93	$2,127.69

Distributions - April 2016

CHECK NUMBER	CHECK DATE	LAST NAME	FIRST NAME/MI	GROSS PAY	FEDERAL TAXES W/H	NET PAY	A(ctive) R(etired)	D(eath) S(eparation)	NOTES
071500	04/01/16	BORGMEYER	ROBIN	2,886.97		2,886.97	A	S	CA
071501	04/01/16	STIFF	DEEDRICK	6,729.26	1,345.85	5,383.41	A	S	CA
071502	04/01/16	WISHAM	WHITNEY	3,245.97	649.19	2,596.78	A	S	CA
071503	04/01/16	LAMKINS	BROCK	1,216.52	243.30	973.22	A	S	EAGLE
071504	04/01/16	BOSSLET	LISA	8,614.19		8,614.19	A	S	GA-STL
071505	04/01/16	TUCKER	DOUGLAS	6,268.02	1,253.60	5,014.42	A	S	AQS-CLA
071506	04/01/16	NISSEN COWEN	MICHAEL	9,535.15	1,907.03	7,628.12	A	S	SLPS/IACM
071507	04/01/16	SNOW	AMY	11,338.42	2,267.68	9,070.74	A	S	SLPS/IESM
071508	04/01/16	KENNER	ELIZABETH	46,526.31		46,526.31	A	S	SLPS
071509	04/01/16	LANSING	JUNE	6,188.84	1,237.77	4,951.07	A	S	SLPS
071510	04/01/16	LEE	EDUARDO	8,580.53	1,716.11	6,864.42	A	S	SLPS
071511	04/01/16	PEARSON	IRENE	3,502.28	700.46	2,801.82	A	S	SLPS
071512	04/01/16	SCHNEIDER	SUMMER	6,066.27		6,066.27	A	S	SLPS
071513	04/01/16	SHEARD	JACQUELINE	5,165.69	1,033.14	4,132.55	A	S	SLPS
071514	04/01/16	ELLIS	HOWARD	1,032.63	206.53	826.10	A	S	SLPS
071515	04/01/16	BARRY	GINA	1,153.80		1,153.80	A	S	SLPS
071546	04/08/16	BISHOP	CHARLES	5,085.36	1,017.07	4,068.29	A	S	LFL
071548	04/08/16	NASH	GENE	13,478.23		13,478.23	A	S	ICP
071549	04/08/16	O'CALLAGHAN	LEANNE	3,427.11	685.42	2,741.69	A	S	EAGLE
071550	04/08/16	SINGH	JAS	2,482.36		2,482.36	A	S	LFL
071551	04/08/16	ESPENSCHIED	ABIGAIL	2,334.44	466.89	1,867.55	A	S	NSCS
071552	04/08/16	GLENN	RANDY	100.73	20.15	80.58	A	S	SLPS
071553	04/08/16	MARKS	PAMELA	20,319.15		20,319.15	A	S	SLPS
071554	04/08/16	MUSCHINSKE	KATHERINE	2,370.94		2,370.94	A	S	SLPS
071555	04/08/16	PERKINS	AARON	1,507.95	301.59	1,206.36	A	S	SLPS
071556	04/08/16	SALMON	STACEY	18,882.51	3,776.50	15,106.01	A	S	SLPS
071557	04/08/16	WEBB	ANNE	24,628.62		24,628.62	A	S	SLPS
071558	04/08/16	BROWN	VALERIE	809.48	161.90	647.58	A	S	CGMS
071559	04/15/16	GOLIDAY	MELBA	1,393.48	278.70	1,114.78	A	S	CA
071561	04/15/16	HARDIN	TERRY	2,808.59	561.72	2,246.87	A	S	CA
071562	04/15/16	JONES	LEAH	4,436.66	887.33	3,549.33	A	S	GSA
071563	04/15/16	KREMER	KATI	8,168.05	1,633.61	6,534.44	A	S	JAMAA- 2,651.54 SLPS 5,516.34
071564	04/15/16	MITCHELL	MONICA	455.77	91.15	364.62	A	S	JAMAA
071565	04/15/16	STARKS	MICHAEL	512.21	102.44	409.77	A	S	CA
071566	04/15/16	ANDREWS	SHALONDA	321.24	64.25	256.99	A	S	SLPS
071567	04/15/16	STEEN	DAVID	1,483.71	296.74	1,186.97	A	S	SLPS
071568	04/15/16	JOHNSON	PATRICK	522.20	104.44	417.76	A	S	JAMAA
			TOTAL	**$ 243,579.64**	**$ 23,010.56**	**$ 220,569.08**			

Distributions - May 2016

CHECK NUMBER	CHECK DATE	LAST NAME	FIRST NAME/MI	GROSS PAY	FEDERAL TAXES W/H	NET PAY	A(ctive) R(etired)	D(eath) S(eparation)	NOTES
071604	05/02/16	FINNEY	LUCAS	6,613.01		6,613.01	A	S	CCC
071605	05/02/16	KENZIE	SARA	1,134.34		1,134.34	A	S	CA
071606	05/02/16	MORGAN	AMBER	9,079.67	1,815.93	7,263.74	A	S	LFL
071607	05/02/16	CRUTCHER	DONNETTA	11,339.01	1,133.90	10,205.11	A	D	DEC: EVELYN CRUTCHER
071608	05/02/16	JENKINS	MARTIN	26,582.80	5,316.56	21,266.24	A	S	
071609	05/02/16	KROLL	RHONDA	742.58	148.52	594.06	A	S	
071610	05/02/16	WALLACE	CONNOR	434.65	86.93	347.72	A	S	
071611	05/02/16	WILSON	STORMYE	27,921.13		27,921.13	A	S	
071613	05/02/16	BURTON-SMITH	ENIOLA	883.76	176.75	707.01	A	S	JAMAA
071649	05/13/16	WATSON	ANGELA BAILEY	6,110.76	1,222.15	4,888.61	A	S	LF
071650	05/13/16	TURNOCK	LEE	2,108.29	421.65	1,686.64	A	S	ICP
071651	05/13/16	NOLLE	ALLYSON	5,016.51		5,016.51	A	S	SLLIS
071652	05/13/16	GARRY	ERICA	12,407.37	2,481.47	9,925.90	A	S	CA
071653	05/13/16	ATHY	NANCY	6,266.53		6266.53	A	S	
071654	05/13/16	HOPPER	SHANE	20,241.81	4,048.36	16,193.45	A	S	
071655	05/13/16	MAYBERRY	MICHAEL	22,793.12	4,558.62	18,234.50	A	S	
071656	05/13/16	PRITCHETT	TRACEY	6,586.79	1,317.36	5,269.43	A	S	
071657	05/13/16	CRUTCHER	ESSEX	11,339.01		11,339.01	A	D	DEC: EVELYN CRUTCHER
071658	05/13/16	CURTIS-BARNEY	SUE ROBIN	6,403.33	1,280.67	5,122.66	A	S	
071683	05/24/16	MORROW	KATINA	521.13	104.23	416.90	A	S	LFL
071684	05/24/16	WASHINGTON	CRYSTAL	995.68	199.14	796.54	A	S	LFL
071685	05/24/16	GILL	DUANE	6,748.45	1,349.69	5,398.76	A	S	
071686	05/24/16	HAMPTON	CHRISTINA	233.92	46.78	187.14	A	S	
071687	05/24/16	JOHNSON	LEJUAN	5,856.19	1,171.24	4,684.95	A	S	
071688	05/24/16	LANFERSIECK	KAY	1,475.00	295.00	1,180.00	A	S	
071689	05/24/16	MENSEY	LUCRETIA	282.48	56.50	225.98	A	S	
071690	05/24/16	MUNIR	KHALEEL	5,608.03	1,121.61	4,486.42	A	S	
071691	05/24/16	SCHNEIDERMAN	LIEBA	7,893.89		7,893.89	A	S	
071692	05/24/16	THOMAS	MARY K	27,236.86	5,447.37	21,789.49	A	S	
071693	05/24/16	WATTS	PAULINE	10,688.06	2,137.61	8,550.45	A	S	
071694	05/24/16	HUNTER	LEDORA R	10,502.00		10,502.00	A	D	DEC: LEAMON HUNTER
			TOTAL	**$ 262,046.16**	**$ 35,938.04**	**$ 226,108.12**			

Public School Retirement System of the City of St. Louis
Checks Written During the Month of April, 2016

Payee	Ck. Number	Description	Amount
Date Paid April 1, 2016			
Office Payroll	ACH	Office Payroll	10,253.21
AXA Equitable	ACH	457 Contributions	1,823.00
Tiffany Jones	71499	Reimbursement of Other Deductions	206.25
Date Paid April 5, 2016			
Ameren Missouri	71516	Electric Service	1,809.95
AT&T	71517	U-Verse Internet	50.00
Blade Technologies, Inc.	71518	Server Replacement	2,911.95
Blade Technologies, Inc.	71519	Professional Services	2,841.51
Windstream Communications	71520	Telephone Data	540.92
Digital Intersection	71521	Monthly Data Center Hosting	150.00
MSD	71522	Sewer Service	30.27
Purchase Power	71523	Postage	500.00
BuildingStars STL Operations, Inc.	71524	Janitorial Service	1,386.00
Parking Management Services, LLC	71525	April 2016 Parking - 1 Employee	65.00
Eazy Business Mailers, Inc.	71526	Postage - Daily Pickup	230.00
Office Essentials	71527	Office Supplies	153.05
BarnesCare	71528	Sheryl E. Hayes	100.00
Carbonite, Inc.	71529	Disaster Recovery Site	967.10
Charter Communications	71530	Charter Internet	161.24
Hartnett Gladney Hetterman, LLC	71531	Legal Fees	1,674.30
Anders CPAs & Advisors	71532	Audit of 2015 Financial Statements	11,200.00
Jupiter Consulting Services, LLC	71533	Programming Consulting	8,064.00
Gregory F.X. Daly, Collector of Revenue	71534	Water-City	134.06
Gregory F.X. Daly, Collector of Revenue	71535	City Earnings Tax - First Quarter 2016	828.63
Charles L. Shelton, Jr.	71536	Advance - NEPC Conference	1,921.00
NCTR	71537	2016 Membership - Annual Renewal	1,625.00
OffsiteDataSync	71538	Online Backups	208.12
Republic Services #346	71539	Trash Pick-Up	134.00
CBRE - 608844	71540	Engineer Services	454.01
Full Care	71541	Snow and Ice Management	895.00
Blue Chip Pest Services	71542	Pest Control	44.00
Board of Education St. Louis Benefits Trust	71543	Office Employees Insurance - Dental	269.93
Board of Education St. Louis Benefits Trust	71544	Office Employees Insurance - Vision	18.37
Board of Education St. Louis Benefits Trust	71545	Office Employees Insurance - Life	126.00
Date Paid April 15, 2016			
Office Payroll	ACH	Office Payroll	10,456.46
AXA Equitable	ACH	457 Contributions	1,823.00
Date Paid April 20, 2016			
Absopure Water Company	71569	Water Cooler Service	25.90
Buck Consultants, LLC	71570	Actuarial Consulting Services - March & April	9,477.00
AT&T	71571	Monthly Service Charge	154.97
Access	71572	Scanning Services	395.30
Gallagher Benefit Services, Inc.	71573	Group Ins. Consulting Services Monthly Fee	3,320.25
Blade Technologies, Inc.	71574	Professional Services	1,207.84
Charter Communications	71575	Spectrum Internet and Voice	179.96
Anders CPAs & Advisors	71576	Audit of 2015 Financial Statements	20,000.00
Jupiter Consulting Services, LLC	71577	Programming Consulting	3,591.00
BuildingStars STL Operations, Inc.	71578	Janitorial Supplies	358.86
Parking Management Services, LLC	71579	May 2016 Parking - 1 Employee	65.00
Parking Management Services, LLC	71580	Parking Ticket Validations - March 2016	34.50
Yvette A. Levy	71581	Advance - NEPC Investment Conference	1,475.00
CBRE - 608844	71582	Building Management - March 2016	1,100.00
CBRE - 608844	71583	Engineer Services	312.13
St. Louis Mat & Linen Company	71584	Floor Mats	177.50
EARNEST Partners, LLC	71585	1st Quarter 2016 Management Fee	8,649.94
Holland Capital Management LLC	71586	1st Quarter 2016 Management Fee	45,122.12
Loomis, Sayles & Company, L.P.	71587	1st Quarter 2016 Management Fee	50,968.97
Systematic Financial Management, LP	71588	1st Quarter 2016 Management Fee	59,231.50
Date Paid April 29, 2016			
Office Payroll	ACH	Office Payroll	10,456.46
AXA Equitable	ACH	457 Contributions	1,823.00
		TOTAL	**$282,182.53**

Public School Retirement System of the City of St. Louis
Checks Written During the Month of May, 2016

Payee	Ck. Number	Description	Amount
Date Paid May 5, 2016			
Ameren Missouri	71614	Electric Service	1,470.02
AT&T	71615	U-Verse Internet	50.00
Blade Technologies, Inc.	71616	Professional Services	276.25
Windstream Communications	71617	Telephone Data	517.46
Digital Intersection	71618	Monthly Data Center Hosting	150.00
MSD	71619	Sewer Service	33.48
Purchase Power	71620	Postage	552.36
Office Essentials	71621	Office Supplies	1,188.43
BarnesCare	71622	William C. Murphy	100.00
Hartnett Gladney Hetterman, LLC	71623	Legal Fees	5,980.75
Anders CPAs & Advisors	71624	Audit of 2015 Financial Statements	11,486.00
OffsiteDataSync	71625	Online Backups	208.12
Crossroads Courier, Inc.	71626	Courier Service	5.84
Minuteman Press	71627	#10 Envelopes With Return Address	182.03
Andrew Clark	71628	Trustee Meeting Expenses, Printing & Supplies	51.13
Shred-It	71629	Document Shredding	186.38
CBRE - 608844	71630	Engineer Services	283.75
Blue Chip Pest Services	71631	Pest Control	44.00
Causeway Capital Management LLC	71632	1st Quarter 2016 Management Fee	64,831.00
The Edgar Lomax Company	71633	1st Quarter 2016 Management Fee	40,454.88
Fidelity Institutional Asset Mgmt Trust Company	71634	1st Quarter 2016 Management Fee	61,247.61
INTECH Investment Management LLC	71635	1st Quarter 2016 Management Fee	30,424.04
Manulife Asset Management U.S. LLC	71636	1st Quarter 2016 Management Fee	33,189.13
Mondrian Investment Partners Limited	71637	1st Quarter 2016 Management Fee	43,139.83
NCM Capital Advisers, Inc.	71638	1st Quarter 2016 Management Fee	7,488.52
New Amsterdam Partners, LLC	71639	1st Quarter 2016 Management Fee	21,995.64
Westfield Capital Management Company, LP	71640	1st Quarter 2016 Management Fee	50,698.55
US Bank	71641	1st Quarter 2016 Custodial Fees	35,680.62
Board of Education St. Louis Benefits Trust	71642	Office Employees Insurance - Dental	269.93
Board of Education St. Louis Benefits Trust	71643	Office Employees Insurance - Vision	18.37
Board of Education St. Louis Benefits Trust	71644	Office Employees Insurance - Life	126.00
Date Paid May 13, 2016			
Office Payroll	ACH	Office Payroll	10,456.46
AXA Equitable	ACH	457 Contributions	1,823.00
Arthur J Gallagher Risk Mgmt. Services, Inc.	71645	Fiduciary Liability & Crime Insurance Premiums	74,059.00
Paula R. Bentley	71646	Advance - 2016 NASP Conference	1,770.00
Dawn R. Waters	71647	Refund of Payroll Deductions	499.20
Date Paid May 19, 2016			
Eazy Business Mailers, Inc.	71659	Postage - Spring Newsletter	2,200.00
Date Paid May 20, 2016			
Absopure Water Company	71660	Water Cooler Service	25.90
Buck Consultants, LLC	71661	Actuarial Consulting Services - April and May	14,221.00
AT&T	71662	Monthly Service Charge	154.98
Access	71663	Scanning Services	395.30
Gallagher Benefit Services, Inc.	71664	Group Ins. Consulting Services Monthly Fee	3,320.25
Blade Technologies, Inc.	71665	Professional Services	8,260.34
Charter Communications	71666	Spectrum Internet and Voice	179.96
BuildingStars STL Operations, Inc.	71667	Janitorial Service	1,386.00
Parking Management Services, LLC	71668	June 2016 Parking - 1 Employee	65.00
Parking Management Services, LLC	71669	Parking Ticket Validations - April 2016	36.00
Yvette A. Levy	71670	Reimbursement - NEPC Investment Conference	6.33
Eazy Business Mailers, Inc.	71671	Postage - Daily Pickup	210.00
MSD	71672	Sewer Service	52.74
Crossroads Courier, Inc.	71673	Courier Service	7.02
Carbonite, Inc.	71674	Disaster Recovery Site	967.10
Republic Services #346	71675	Trash Pick-Up	133.00
CBRE - 608844	71676	Building Management-May 2016	1,100.00

Public School Retirement System of the City of St. Louis
Checks Written During the Month of May, 2016

Payee	Ck. Number	Description	Amount
CBRE - 608844	71677	Engineer Services	340.50
St. Louis Mat & Linen Company	71678	Floor Mats	124.00
Blue Chip Pest Services	71679	Pest Control	44.00
Tech Electronics, Inc.	71680	Technical Support, Permit Fee	570.00
TCW Asset Management Company	71681	1st Quarter 2016 Management Fee	48,504.95
Progress Investment Management Co., LLC	71682	1st Quarter 2016 Management Fee	63,588.31
Date Paid May 27, 2016			
Office Payroll	ACH	Office Payroll	9,943.66
AXA Equitable	ACH	457 Contributions	2,423.00
		TOTAL	**$659,197.12**

May 19, 2016
1136 Teson Rd.
Hazelwood, MO 63042

St. Louis Public School System, SAB

Dear SAB Board Members,

Please let me know if the PSRSSTL or the STL Public School System is responsible for approving a Cost of Living Adjustment for STL Public School System retired employees receiving a /annual Cost of Living Adjustment. I have been investigating this very answer for 10 plus years. Each organization holds the other accountable, when St. Louis Public School Employees never receive a COLA.

Sincerely,

Erma Nevels McNeil

PUBLIC SCHOOL RETIREMENT SYSTEM
OF THE CITY OF ST. LOUIS
3641 OLIVE STREET, SUITE 300 ⬥ ST. LOUIS, MO 63108-3601

OFFICE OF THE
EXECUTIVE DIRECTOR

PHONE: (314) 534-7444
FAX: (314) 533-0531

June 21, 2016

Ms. Erma Nevels
1136 Teson Rd.
Hazelwood, MO 63042

Re: Response to Letter Addressed to SLPS, Special Administrative Board (SAB)

Dear Ms. Nevels:

I am responding to the letter addressed to the SAB that you presented to the Board of Trustees at the last regular board meeting on June 20, 2016. In the letter, you ask whether the retirement system or the SAB is responsible for approving a COLA for retirees.

The answer to your question involves two-steps. First, the retirement board must approve any proposed increase to benefits, including a COLA. Second, the SAB must approve all COLA's and agree to cover the cost of the added benefits through an increase to the annual required employer contributions.

I hope this helps you.

Sincerely,

FILE COPY

Andrew Clark
Executive Director

Cc: Board of Trustees

Public School Retirement System of the City of St. Louis, Missouri

Public School Retirement System of the City of St. Louis Retirement Plan

Actuarial Valuation Report

Plan Year January 1, 2016 – December 31, 2016

June 2016

Stephen B. Siepman
Principal, Retirement

Buck Consultants, LLC
231 S. Bemiston, Suite 400
St. Louis, MO 63105

stephen.siepman@xerox.com
tel 314.719.2529
fax 314.725.2724

June 2016

Mr. Andrew Clark
Executive Director
PSRS of the City of St. Louis
3641 Olive Street, Suite 300
St. Louis, MO 63108-3601

Dear Members of The Public School Retirement System of the City of St. Louis Board:

Actuarial Certification

The annual actuarial valuation required for the Public School Retirement System of the City of St. Louis has been prepared as of January 1, 2016 by Buck Consultants. The purposes of the report are to:

(1) determine the required annual contributions from the board of education, the retirement system, and the charter schools; and

(2) present the valuation results of the System as of January 1, 2016.

This report is submitted in accordance with Section 169.450-16 Revised Statutes of Missouri (R.S. Mo.). The required contribution to the System from the board of education, the retirement system, and the charter schools is computed in accordance with Section 169.490 R.S. Mo. The amount of the required contribution is stated in Section 1.3 of this report. Information with respect to financial disclosures under GASB 67 and 68 may be found in a separate report.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data and financial information provided to us by the System, to determine a sound value for the System liability. The employee data has not been audited, but it has been reviewed and found to be consistent, both internally and with prior years' data. The validity of the valuation results is dependent upon the accuracy of the data and financial information provided.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the System and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the System. The actuary performs an analysis of System experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The Experience Study for the period January 1, 2006 to December 31, 2010 was prepared by Buck Consultants and approved by the Board for use beginning with the January 1, 2012 actuarial valuation and will remain in effect for valuation purposes until such time as the Board adopts revised assumptions. The next Experience Study will be based on the period from January 1, 2011 to December 31, 2015 and upon approval by the Board will be the basis of valuations performed from January 1, 2017 through January 1, 2021. A summary of all assumptions and methods is presented in Section 3.8 of this report.

Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Future contribution requirements may differ from those determined in the valuation because of:

(1) differences between actual experience and anticipated experience based on the assumptions;

(2) changes in actuarial assumptions or methods;

(3) changes in statutory provisions;

(4) differences between actuarially required contributions and actual contributions.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein, and are available to answer questions regarding this report.

We believe that the assumptions and methods used for funding purposes are individually and in aggregate, reasonable and in combination represent a best estimate of anticipated experience under the plan. We believe that this report conforms with the requirements of the Missouri statutes, and where applicable, other federal and accounting laws, regulations and rules, as well as generally accepted actuarial principles and practices.

Sincerely,

Stephen B Siepman

Stephen B. Siepman, FSA, EA, MAAA
Principal, Retirement

Troy Jaros

Troy Jaros, FSA, EA, MAAA
Senior Consultant, Retirement

SBS/TJ/em

Table of Contents

Report Highlights

This report has been prepared by Buck Consultants to:

- Present the results of a valuation of the Public School Retirement System of the City of St. Louis as of January 1, 2016; and
- Determine the required contribution rate for 2017.

This report is divided into three sections. Section 1 contains the results of the valuation. It includes the experience of the System during the 2015 plan year, the actuarially required costs, and funded levels.

Section 2 contains asset information. It includes market value of assets, the calculation of actuarial value of assets, the contingency reserve, and asset returns.

Section 3 describes the basis of the valuation. It summarizes the System provisions, provides information relating to the System members, and describes the funding methods and actuarial assumptions used in determining liabilities and costs. Also included is historical information about the System.

Experience Gains and Losses

Under the actuarial funding method used to determine the contribution, actuarial gains (or losses) result in a decrease (or increase) in the normal cost rate. Actuarial gains (or losses) result from differences between the actual experience of the System and the expected experience based upon the actuarial assumptions. Annual gains (or losses) should be expected because short-term deviations from expected long-term average experience are common.

For the 2015 Plan Year, total actuarial losses due to plan experience were $22.4 million. Roughly $19.1 million of this amount is a loss attributable to the System's actuarial rate of return on assets which was 5.7%, or 2.3% lower than the assumed rate of return of 8.0%. By comparison, the rate of return on the market value of assets during 2015 was -0.6%. The difference in these returns is primarily due to less-than-assumed investment performance during 2015. At January 1, 2016, the actuarial value of assets of $915.4 million is above market value of assets (excluding the expense and contingency reserve) by approximately $76.2 million.

Roughly $3.3 million of the total actuarial loss is a loss attributable to demographic experience. A review of the experience gains and losses over recent years indicates that the current actuarial assumptions continue to match well with the emerging demographic experience and they continue to be reasonable for use in advance of the next anticipated experience study.

Assumption Changes

For the 2016 valuation, the mortality assumption was changed. A detailed description of the changes appears in section 3.8. In total, the assumption changes increased actuarial liability by approximately $1.6 million.

Normal cost rate

The normal cost is determined annually and equals the product of the normal cost rate times covered payroll. For 2016, the annual normal cost due December 31, 2016 is $23,127,132, as compared to $20,569,969 for 2015, an increase primarily due to the aforementioned actuarial loss, along with an increase from the impact due to the change of assumptions. The annual normal cost rate increased from 8.05% to 8.82% due to the experience losses. Covered payroll increased slightly from $245.7 million to $252.1 million.

Accrued liability amortization

The actuarial accrued liability contribution is determined as the amount necessary to amortize the remaining Unfunded Frozen Actuarial Accrued Liability (UFAAL) over a period of 30 years from January 1, 2006, when the Board of Trustees acted to redetermine the UFAAL. This portion of the contribution only changes to reflect changes in benefits, changes in actuarial assumptions and methods, and variations in the remaining UFAAL due to deviations between actual and expected contributions. Employer contributions for 2015 were $2.1 million more than the annual required contribution, which reduced the UFAAL more than expected. However, the changes in actuarial assumptions from the previous valuation increased the UFAAL by $1.6 million. As a result, the net amortization payment decreased from $16,640,783 to $16,530,824. The amortization payment component of the contribution rate decreased from 6.8% to 6.6% of covered payroll due to the increase in payroll..

Required contribution and timing

In 2001, the Board of Education agreed to institute a one-year lag for future years. Therefore, this actuarial valuation is used to determine the actual contribution rate for 2017. The dollar amount of the actual contribution increased to $39,657,956 for 2017 from $37,210,752 for 2016. As a percentage of covered payroll, the contribution rate for 2017 increased to 15.73% from 15.14% for 2016.

Summary and Comparison of Principal Valuation Results

Annual Required Contribution

	Board of Education	Retirement System	Charter Schools	Total
2016				
Normal cost contribution	$ 17,762,876	$ 43,530	$ 5,320,726	$ 23,127,132
Actuarial accrued liability contribution	12,696,558	31,114	3,803,152	$ 16,530,824
Annual required contribution (ARC)	30,459,434	74,644	9,123,878	$ 39,657,956
Covered payroll	193,647,262	474,551	58,005,475	$ 252,127,288
ARC as % of covered payroll	15.73%	15.73%	15.73%	15.73%
2015				
Normal cost contribution	$ 16,035,241	$ 43,946	$ 4,490,782	$ 20,569,969
Actuarial accrued liability contribution	12,972,260	35,551	3,632,972	$ 16,640,783
Annual required contribution	29,007,501	79,497	8,123,754	$ 37,210,752
Covered payroll	191,534,175	524,915	53,640,493	$ 245,699,583
ARC as % of covered payroll	15.14%	15.14%	15.14%	15.14%

	January 1, 2016	January 1, 2015
System Assets		
Expense and contingency reserve	$ 29,537,454	$ 29,868,370
Market value, excluding expense & contingency reserve	839,141,595	907,062,130
Actuarial value	915,391,079	926,905,797
System liabilities		
Unfunded actuarial accrued liability	$ 162,302,064	$ 166,687,451
Projected Unit Credit Actuarial Accrued Liability	$1,165,766,472	$1,166,064,968
PUC Funding Ratio		
Actuarial value funding ratio	78.5%	79.5%
Market value funding ratio	72.0%	77.8%

Analysis of the Valuation

(1) Investment Experience

Our actuarial calculations were based upon the assumption that the System's assets earn 8.00%. The approximate market value rate of return during 2015 was -0.64%. The approximate actuarial value rate of return was 5.69%.

(2) Demographic Experience

The number of active members increased from 5,011 to 5,034 for the period. The average age of active members remained unchanged, the average service decreased by 0.01 years, and the average annual salary increased $1,053. There were small changes in the inactive statistics. The membership statistics are found in Sections 3.3 through 3.7 of this report.

(3) Salary Increases

The average annual salary increased 2.1% between January 1, 2015 and January 1, 2016. Total annual covered payroll increased 2.6% between January 1, 2015 and January 1, 2016.

(4) Changes in Methods from the Prior Valuation

There have been no changes in methods since the prior valuation.

(5) Changes in Assumptions from the Prior Valuation

The healthy mortality assumption was updated for another year of improvement. Details of this assumption change can be found in Section 3.8. The net effect of changes was to increase the actuarially required employer contribution by 0.01% of covered payroll.

(6) Changes in Benefit Provisions from the Prior Valuation

There have been no changes in benefit provisions since the prior valuation.

(7) Other Changes

There have been no other changes since the prior valuation.

(8) Summary

The overall effect of experience during the period, along with the changes in assumptions, resulted in a decrease in the funding ratio utilizing the actuarial value of assets from 79.5% to 78.5%. The total contribution rate increased from 15.14% to 15.73% of covered payroll.

Section 1 - Valuation Results

This section sets forth the results of the actuarial valuation.

Section 1.1	Develops the actuarial accrued liability contribution
Section 1.2	Develops the normal cost contribution
Section 1.3	Develops the required annual contribution
Section 1.4	Actuarial balance sheet as of January 1, 2016
Section 1.5	Projected Unit Credit funding ratios
Section 1.6	Projected Unit Credit funded status
Section 1.7	Prioritized solvency test

Section 1 (continued)

1.1 Determination of the Unfunded Frozen Actuarial Accrued Liability

1.	Unfunded frozen actuarial accrued liability as of January 1, 2015	$ 166,687,451
2.	Normal cost due January 1, 2015	19,778,816
3.	Interest on (1) and (2) at 8.00% to December 31, 2015	14,917,301
4.	Employer contributions for 2015	40,708,503
5.	Interest on (4) at 8.00% to December 31, 2015	0
6.	Supplement for changes in actuarial assumptions or benefits	1,626,999
7.	Unfunded frozen actuarial accrued liability as of January 1, 2016, (1) + (2) + (3) – (4) – (5) + (6)	162,302,064
8.	Actuarial accrued liability contribution for 2016 End of year amortization payment of (7) over 20 years	16,530,824

Section 1 (continued)

1.2 Determination of Normal Cost Contribution

1. Actuarial present value of future benefits		
a. Active participants		
i. Retirement benefits	$ 381,380,877	
ii. Vested withdrawal benefits	45,118,642	
iii. Refund of contributions	5,192,013	
iv. Survivor benefits	5,474,470	
v. Disability benefits	10,727,948	
Total		$ 447,893,950
b. Retired participants and beneficiaries		860,534,740
c. Inactive participants		
i. Vested participants	20,893,626	
ii. Nonvested participants	6,329,561	
Total		27,223,187
d. Total actuarial present value of future benefits		$ 1,335,651,877
2. Unfunded frozen actuarial accrued liability as of January 1, 2016		162,302,064
3. Actuarial value of assets as of December 31, 2015		915,391,079
4. Actuarial present value of future participant contributions		93,310,821
5. Actuarial present value of future employer normal costs, (1)(d) – (2) – (3) – (4), not less than $0		164,647,913
6. Actuarial present value of future covered payroll of current participants		1,866,216,426
7. Employer normal cost rate, (5) / (6)		8.82%
8. Total covered payroll		252,127,288
9. Normal cost for 2016, (7) x (8)		22,237,627
10. Normal cost contribution due by December 31, 2016, (9) x [1 + (0.08 x 0.5)]		23,127,132

Section 1 (continued)

1.3 Required Annual Contribution

	Board of Education	Retirement System	Charter Schools	Total
Normal cost contribution	$ 17,762,876	$ 43,530	$ 5,320,726	$ 23,127,132
Actuarial accrued liability contribution	12,696,558	31,114	3,803,152	$ 16,530,824
Annual required contribution (ARC)	30,459,434	74,644	9,123,878	$ 39,657,956
Covered payroll	193,647,262	474,551	58,005,475	$ 252,127,288
ARC as % of covered payroll	15.73%	15.73%	15.73%	15.73%

Section 1 (continued)

1.4 Actuarial Balance Sheet as of January 1, 2016

Actuarial assets		
Actuarial value of present assets		$ 915,391,079
Actuarial present value of future participant contributions		93,310,821
Actuarial present value of future employer contributions for:		
Normal costs		164,647,913
Unfunded actuarial accrued liability		162,302,064
Total present and future assets		$ 1,335,651,877
Actuarial liabilities		
Actuarial present value of benefits now payable		$ 860,534,740
Actuarial present value of benefits payable in the future:		
Active participants	$ 447,893,950	
Terminated vested participants	20,893,626	
Terminated non-vested participants	6,329,561	
Total payable in the future		475,117,137
Total liabilities for benefits		$ 1,335,651,877
Surplus / (deficit)		0

Section 1 (continued)

1.5 Projected Unit Credit Funding Ratios

The funding objective of the System is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percentage of covered payroll.

Funding ratios provide a measure of how much progress has been made towards achieving this objective. For this purpose, the System's liabilities are determined using the projected unit credit cost method. Under this method, liabilities are determined for each participant using only service already performed, but anticipating the impact of future salary growth on the benefits attributable to current active participants.

Section 1.6 provides a comparison of this liability measure to the value of assets to produce a snapshot measure of the System's funding ratio.

Another way to check the funding progress of the System is through a prioritized solvency test. Section 1.7 illustrates the history of the System's funding progress under this test.

In a prioritized solvency test, the plan's present assets (cash and investments) are sequentially allocated and compared three priorities of liabilities as follows:

- Liability 1: Active participant contributions, accumulated with interest;
- Liability 2: The liabilities for future benefits to current inactive participants and beneficiaries; and
- Liability 3: The liabilities for future benefits to current active participants for prior service.

Ideally, progress in funding of these liability groups will normally be exhibited with Liability 1 attaining 100% coverage first, then Liability 2, and finally Liability 3. Note that 100% funding of Liability 3 does not mean that the System has completed its funding of benefits since additional benefits typically are expected to be earned in the future.

Section 1 (continued)

1.6 Projected Unit Credit Funded Status

As of January 1, 2016 the Projected Unit Credit Actuarial Accrued Liability was:

1.	Retired members and beneficiaries currently receiving benefits and terminated members not yet receiving benefits	$ 887,757,927
	a. Current active participants	
	i. Accumulated member contributions, including interest	120,507,482
	ii. Employer-financed benefits	157,501,063
	Total Projected Unit Credit Actuarial Accrued Liability	$ 1,165,766,472

As of January 1, 2016 the Projected Unit Credit AAL was funded as follows:

2.	Net assets available for benefits at actuarial value	$ 915,391,079
3.	Unfunded Projected Unit Credit AAL	250,375,393
4.	Actuarial value funding ratio, (2) / (1)	78.5%
5.	Net assets available for benefits at market value	$ 839,141,595
6.	Unfunded Projected Unit Credit AAL	326,624,877
7.	Market value funding ratio, (5) / (1)	72.0%

Section 1 (continued)

1.7 Prioritized Solvency Test

Valuation date January 1	Active participants' accumulated contributions	Retirees, beneficiaries and inactive participants	Active participants (employer-financed)	Valuation assets	Percent covered by valuation assets		
	(1)	(2)	(3)		(1)	(2)	(3)
1999	130,705,014	276,290,128	303,953,494	694,250,672	100%	100%	95%
2000	129,398,364	353,852,977	288,213,016	770,090,498	100%	100%	100%
2001	127,086,325	414,052,293	269,590,438	828,097,298	100%	100%	100%
2002	116,506,785	476,104,516	372,221,726	861,128,076	100%	100%	72%
2003	115,570,837	492,633,382	361,818,972	873,260,102	100%	100%	73%
2004	106,021,476	528,287,121	364,459,284	901,996,455	100%	100%	73%
2005	89,710,662	518,880,414	368,306,240	935,328,638	100%	100%	89%
2006	90,001,111	661,353,685	319,920,373	983,828,243	100%	100%	73%
2007	96,223,413	712,467,372	305,409,824	1,003,428,983	100%	100%	64%
2008	98,112,123	781,006,957	249,244,208	1,014,923,381	100%	100%	54%
2009	104,576,264	801,995,237	187,035,147	963,851,408	100%	100%	31%
2010	110,054,510	805,831,292	195,185,151	950,709,944	100%	100%	18%
2011	103,178,297	842,643,351	169,510,764	944,356,735	100%	100%	0%
2012	116,268,566	850,498,527	189,084,439	925,389,359	100%	95%	0%
2013	120,355,959	849,412,565	190,553,739	914,494,335	100%	93%	0%
2014	114,092,991	896,477,122	164,014,835	922,922,386	100%	90%	0%
2015	116,755,946	892,626,625	156,682,397	926,905,797	100%	91%	0%
2016	120,507,482	887,757,927	157,501,063	915,391,079	100%	90%	0%

Section 2 - Valuation of the System's Assets

This section of the report shows the development of the actuarial value of the assets of the System and provides information regarding the expense and contingency reserve, investment results and the various assets of the System.

The amount of assets used in the actuarial valuation is known as the "actuarial value of assets." The method is discussed in the summary of methods and assumptions, section 3.8. The development of the actuarial value of assets is shown in section 2.1. An important element in the development of the actuarial value of assets is the expense and contingency reserve. The amount of the reserve is determined pursuant to a policy adopted by the Board of Trustees. The history of the reserve is presented in section 2.2.

As shown in section 2.3, the fund had a rate of return of 5.69% on an actuarial value basis, which is 2.31% below the assumed rate of return of 8.00%. In accordance with Rule X, an amount would typically be released from the investment contingency portion of the reserve, because the actuarial rate of return was more than 1.00% below the assumed rate of return. However, the contingency reserve was exhausted at January 1, 2009, so no additional amounts are available..

The rate of return on an actuarial value basis is intended to be a more stable rate of return and fluctuate less than rates of return on a market value basis. Thus, the rate of return on an actuarial basis is not always a fair measure of the annual investment performance of the fund. Another indicator of actual performance during the year is the rate of return on a market value basis which was a loss of 0.64%, also presented in section 2.3.

Section 2 (continued)

2.1 Development of the Actuarial Value of Assets

1.	Actuarial value of assets as of January 1, 2015	$ 926,905,79
2.	Participant contributions	11,664,711
3.	Employer contributions	40,708,503
4.	Benefit payments and expenses	114,850,590
5.	Investment increment at 8.00%, 8% x {(1) + .5 x [(2) – (4)]}	70,025,029
6.	Expected actuarial value on January 1, 2016, (1) + (2) + (3) – (4) + (5)	934,453,450
7.	Market value of assets on January 1, 2016	868,679,049
8.	Expense and contingency reserve on January 1, 2016, prior to adjustment	29,537,454
9.	Adjustment to the investment contingency reserve	0
10.	Excess of market value over expected actuarial value, (7) – (6) – (8) – (9)	(95,311,855)
11.	Market value adjustment, 20% x (10)	(19,062,371)
12.	Actuarial value of assets as of January 1, 2016, (6) + (11)	915,391,079

2.2 The Expense and Contingency Reserve

Effective January 1, 1996, the Board of Trustees revised Rule X, which governs the determination of the amount of the expense and contingency reserve. The expense portion of the reserve is the sum of:

1. The estimated annual operating expenses for the ensuing year:
2. An amount equal to the liability for non-insurance supplements;
3. An amount equal to the liability for insurance supplements for those participants participating in the program on January 1; and
4. The estimated amount of insurance supplements to be paid for participants expected to retire and participate in the program during the ensuing year.

The investment contingency portion of the reserve is intended to help cover significant shortfalls in the actuarial rate of return. When a shortfall of more than 1% occurs, a portion of the reserve is released equal to one half of the amount of the shortfall up to 2% plus any remaining shortfall. When the rate of return exceeds the assumed rate of return by more than 1%, the reserve is increased subject to a maximum reserve of 5% of the market value of the Retirement Fund. The addition equals one half of the amount of the excess up to 2% plus any remaining excess.

The actuarial return on assets was not within 1% of 8% during 2015, however the entire contingency reserve was released in 2009, therefore no adjustment can be made to the actuarial value of assets.

Below is a history of the expense and contingency reserve:

January 1	Expense reserve	Investment contingency reserve	Total expense and contingency reserve
1997	$25,403,190	$ 5,220,821	$30,624,011
1998	30,891,555	24,100,041	54,991,596
1999	22,142,759	45,972,067	68,114,826
2000	27,992,032	50,003,862	77,995,894
2001	29,837,776	50,003,743	79,841,519
2002	23,527,529	50,003,743	73,531,272
2003	24,952,255	37,759,976	62,712,231
2004	26,028,780	37,759,976	63,788,756
2005	27,170,188	45,115,876	72,286,064
2006	32,534,770	45,115,876	77,650,646
2007	29,864,946	50,732,410	80,597,356
2008	31,987,370	57,234,574	89,221,944
2009	30,555,388	0	30,555,388
2010	29,903,107	0	29,903,107
2011	29,480,465	0	29,480,465
2012	29,564,563	0	29,564,563
2013	29,181,897	0	29,181,897
2014	30,439,781	0	30,439,781
2015	29,868,370	0	29,868,370
2016	29,537,454	0	29,537,454

Section 2 (continued)

2.3 Investment Performance

There are several different methods of approximating the rates of return on investments of the trust fund. Following is a brief comparison of the actuarial assumed rate of return as compared with rates of return on market and actuarial value bases:

a. Market Value Basis

The rate of return on a market value basis is the ratio of the appreciation (or depreciation) of assets less contributions plus disbursements to the market value at the beginning of the year plus the average of the receipts and disbursements made during the year. This may be approximated as follows:

i.	A = Market value of assets as of January 1, 2015	$ 936,930,500
ii.	B = Market value of assets as of January 1, 2016	868,679,049
iii.	C = Contributions during the period	52,373,214
iv.	D = Disbursements during the period	114,850,590
v.	Rate of return: $\dfrac{B - A + D - C}{A + \frac{1}{2}(C - D)}$	-0.64%
vi.	Actuarial assumed rate of return for 2015	8.00%
vii.	Difference between actual and assumed rates of return, (v) – (vi)	-8.64%

b. Actuarial Value Basis

The rate of return on an actuarial value basis is approximated using the same method:

i.	A = Actuarial value of assets as of January 1, 2015	$ 926,905,797
ii.	B = Actuarial value of assets as of January 1, 2016	915,391,079
iii.	C = Contributions during the period	52,373,214
iv.	D = Disbursements during the period	114,850,590
v.	Rate of return: $\dfrac{B - A + D - C}{A + \frac{1}{2}(C - D)}$	5.69%
vi.	Actuarial assumed rate of return for 2015	8.00%
vii.	Difference between actual and assumed rates of return, (v) – (vi)	-2.31%

Section 3 - Basis of the Valuation

In this section, the basis of the valuation is presented and described. This information – the provisions of the System and the census of members – is the foundation of the valuation, since these are the present facts upon which benefit payments will depend.

A summary of the System's provisions is provided in Section 3.1, the legislative history of the System is provided in Section 3.2, and member census information is shown in Section 3.3 to Section 3.7.

The valuation is based upon the premise that the System will continue in existence, so that future events must also be considered. These future events are assumed to occur in accordance with the actuarial assumptions and concern such events as the earnings of the fund; the number of members who will retire, die or terminate their services; their ages at such termination and their expected benefits.

The actuarial assumptions and the actuarial cost method, or funding method, which have been adopted to guide the sponsor in funding the System in a reasonable and acceptable manner, are described in Section 3.8.

A guide to actuarial terminology used in this report is included as Section 3.9.

Section 3 (continued)

3.1 Summary of Plan Provisions

Participants

All persons regularly employed by the board of education, charter schools, and employees of the board of trustees are in the System.

Retirement age

Normal

Age 65 or any age if age plus the years of credited service equals or exceeds 85 (Rule of 85)

Early

Age 60 with 5 years of service

Service retirement allowance

a. 2% (1-1/4% if terminated prior to July 1, 1999) times years of credited service, subject to a maximum of 60%
b. Times average final compensation (AFC)
c. Subject to a maximum of 60% of AFC.
   i. AFC is the highest average compensation for any three consecutive years of the last 10 years of service.
   ii. Compensation is the regular wages plus what your employer pays towards your health and welfare benefits.
   iii. Minimum monthly benefit is $10.00 for each year of credited service, up to 15 years, retirement age 65 and over.
   iv. Unused sick leave is added to a participant's credited service and age.

Early retirement benefit

Service retirement allowance reduced five-ninths of one percent for each month of commencement prior to age 65 or the age at which the Rule of 85 would have been satisfied had the employee continued working until that age, if earlier.

Disability benefit

Service retirement allowance using actual service, or 25% of AFC if larger, provided that in no case will the benefit exceed that payable if service had continued to age 65.

a. Disability must be incurred while an employee as determined by the medical board and approved by the board of trustees.
b. The participant must have a minimum of five years of credited service and not be eligible for normal retirement.

Continued disability is subject to routine verification.

Withdrawal benefit

Accumulated contributions of participant with interest credited to the participant's account.

Section 3 (continued)

3.1 Summary of Plan Provisions

Vested benefit

Full vesting on termination of employment after at least five years of service is provided if contributions are left with the System. The full accrued benefit is payable at age 65 or a reduced early retirement benefit prior to age 65.

Retirement options

In lieu of the benefit paid only over the lifetime of the participant, a reduced benefit payable for life of participant with:

Option 1 Same retirement allowance continued after death to the beneficiary.

Option 2 One-half of the retirement allowance continued after death to the beneficiary.

Option 3 Same retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.

Option 4 One-half of retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.

Option 5 Increased retirement allowance is provided up to age 62, such that benefit provided prior to age 62 is approximately equal to the sum of the reduced retirement allowance paid after age 62 and Social Security.

Option 6 Options 1 and 5 combined.

Option 7 Options 2 and 5 combined.

Survivor benefits

If an active participant dies after completing 18 months of service, leaving a surviving spouse or other dependent beneficiaries, survivor benefits are payable. The widow or dependent beneficiary may elect to receive either a refund of accumulated contributions, or:

a. A survivor who is the widow at least age 62 and married to a participant for at least one year receives $60 a month.

b. A widow with dependent, unmarried children under age 22 receives $60 a month plus $60 per dependent child, not to exceed $180 per month. The benefit ceases when youngest child is age 22 and resumes again under (a) at age 62.

c. If no benefits are payable under (a) or (b), minor children may receive a benefit of $60 per child or $180 divided among them if more than three children.

d. If no benefits are payable under (a), (b) or (c), a dependent parent or parents may receive or share $60 per month upon attaining age 62.

If an active participant dies after completing 5 years of service, the widow or dependent beneficiary may elect to receive either a refund of accumulated contributions or:

a. If the survivor is the widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1, plus $60 per dependent child not to exceed $180 per month.

b. If there is no widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1.

Section 3 (continued)

3.1 Summary of Plan Provisions

Return of contributions upon death

If after the death of a participant, no further monthly are payable to a beneficiary under an optional form of payment, or under the survivor benefit provisions, the participant's beneficiary shall be paid the excess, if any, of the participant's accumulated contributions over all payments made to or on behalf of the deceased participant.

DROP

Effective July 1, 2001, active participants may elect to enter the deferred retirement option plan (DROP) for up to four years. Upon entering the DROP, the participant's retirement benefit is frozen and credited to the participant's DROP account. At the end of the DROP, or upon earlier termination of employment, the DROP account is paid in a lump sum or installments, at the participant's option. During the DROP, the participant continues as an active participant, but does not pay contributions. To enter the DROP the participant must be age 65 or meet the Rule of 85. The DROP program is no longer available, ending June 30, 2008.

Contributions by participants

Participants contribute 5% of compensation. Accumulated contributions are credited at the rate of interest established by the board of trustees. The current crediting rate is 5%.

Contributions by employers

As needed to keep the System actuarially sound.

Expenses

Administrative expenses paid out of investment income.

Section 3 (continued)

3.2 Legislative History of the Retirement System

On and after January 1, 1944, all persons employed by the board of education on a full-time permanent basis are participants of the System as a condition of employment. In 1961, provisions regarding benefits and employee contribution levels were revised for all future employees of the board of education. Participants of the System at that time were granted the right to remain under the "old plan" and have their membership governed by the provisions of the law in effect prior to 1961. These old plan participants have both benefits and contributions based on a $3,000 maximum annual compensation. Old plan participants have been given the option to transfer into the revised plan at various times since 1961.

Effective October 13, 1969, legislation permitted the reinstatement of credited service lost during the years 1944 to 1947 inclusive when the married women teachers rule was in effect.

Effective August 31, 1972, legislation resulted in the following changes:

- Purchase of past service credit by paying contributions for service claimed plus interest.
- Service as extended substitute teacher.
- Service of re-employed participants lost on prior terminations.
- Service out-state Missouri and outside the state of Missouri.
- Service lost by those who elected to stay out of the retirement plan either temporarily or to date.
- Old plan participants who wished to become new plan participants could do so by paying the differential in participant contributions under the new and old plans, plus interest.
- Dependent beneficiary on death of participant before retirement but after age 60 or age 55 with 30 years service may receive option 1 benefit as if participant had retired under such option.
- A participant with five or more years of service and prior to age 65 may be retired with a disability benefit if the medical board certifies that such participant is mentally or physically totally incapacitated for further performance of duty.
- Minimum retirement benefit at age 65 or after 10 years service is $50.00 per month.

On February 10, 1975, the Missouri Supreme Court handed down a decision supporting HB 613 (Section 169.585 of state statutes), which granted increased benefits to retired teachers. The increases apply to those teachers who retired after June 30, 1957, and prior to January 1, 1971. Technically, those retirees are retained as "advisors and supervisor" and receive a "salary" of $5 per month for each year of service, with a maximum of $75. This salary plus the regular retirement benefit cannot exceed $150 per month. To the extent that assets are depleted because of this law, future district contributions will increase. Because these benefits are paid as "salaries," coming out of investment income along with other expenses of operation, there will be less money available for crediting of interest to the various funds at the end of the year.

Section 3 (continued)

3.2 Legislative History of the Retirement System

Effective August 13, 1978 legislation resulted in the following changes:

- The service retirement allowance and projected service retirement allowance was changed to 1-1/4% of average final compensation per year of credited service. The participant's allowance plus his Social Security primary insurance amount could not exceed 80% of his average final compensation. Participants born before 1917 receive the larger of the allowances calculated under the new formula and the formula in effect immediately before it.
- Credited service no longer limited to a maximum of 35 years.
- Two new joint and survivor optional forms of payment were added which provide for the participant's pension to be adjusted back to his unreduced pension in the event his spouse predeceases him.
- Contributions from participants shall be 3% of compensation.
- End of period for purchasing prior service or outside service extended from December 31, 1973 to December 31, 1980. Deleted requirement of electing to purchase out-state or outside the state of Missouri service within one year of completing five years of credited service.
- Gives board of trustees the power to establish regulations, methods and factors that may be needed to calculate primary Social Security benefits.
- Dependent beneficiary on death of participant before retirement with five or more years of credited service may receive option 1 benefit as if the participant had retired under that option as of the date of his death.
- Allow retired educational secretaries to serve as part-time or temporary substitute educational secretary up to a maximum of 360 hours per school year without a reduction in the retired employee's retirement allowance or requiring the retired employees to contribute to the retirement system.

Effective September 28, 1979, legislation resulted in the following changes:

- Accumulated and unused days of sick leave shall be included in computing a participant's age and credited service at retirement.
- Participants who have attained age 62 and who have 30 or more years of credited service may retire and receive a service retirement allowance without reduction for early retirement. The early retirement reduction for participants who retire with 30 or more years of credited service but who have not attained age 62 on their retirement date shall be determined on the basis of the number of months by which their age at retirement is less than age 62.
- Benefits to survivors of a participant who dies while an employee and after having at least 18 months of credited service are as follows:
  - (a) Surviving spouse age 62 or over: $60 per month.
  - (b) Surviving spouse with unmarried dependent children under age 22: $60 per month, plus $30 per month for each eligible child, with a maximum of $150 per month.
  - (c) Unmarried dependent children under age 22: $60 per month for each eligible child, with a maximum of $120 per month. This benefit is payable if the benefit in (b) is not payable.
  - (d) Dependent parent(s): $60 per month, provided no benefits are payable under (a), (b) or (c) above.

Section 3 (continued)

3.2 Legislative History of the Retirement System

Effective September 28, 1981, legislation resulted in the following changes:

- The provision limiting service retirement and projected service retirement allowances to 80% of average final compensation less Social Security was removed for future retirees.
- The minimum monthly benefit payable to participants retiring on or after age 65 with 10 or more years of service was increased to $75.
- Old plan participants were extended the option to transfer into the current System by paying the difference in participant contributions plus interest. Such election to be made on or before December 31, 1984. Retired participants who retired prior to January 1, 1955, may be consultants" at a "salary" equal to $4 for each year of retirement prior to January 1, 1982. Total "salaries" as a "school consultant" and "special school advisor and supervisor" are limited to $250 per month.
- The retirement system may contribute as part of its administrative expenses toward health, life and similar insurance for retirees.
- The actuarial cost method was changed from the "entry age cost method" to the "frozen entry age cost method." The period for amortizing "supplements" to the unfunded actuarial accrued liability was set at 50 years from the time the "supplement" is created.
- Several changes were made dealing with the administration and operation of the System.
- Investment powers were broadened.

Effective September 28, 1984, legislation resulted in the following changes:

- Dependent beneficiary on death of employed, active participant before retirement with five or more years of service may receive option 1 benefit as if the participant had attained age 55 (if less than 55 at his death) and had retired under option 1 as of the date of his death.
- In addition to the option 1 death benefit, a surviving spouse may receive $30 per month for each unmarried dependent child, provided that the total benefit does not exceed the greater of $150 or the option 1 benefit.
- Surviving spouse benefits do not cease on remarriage.
- Dependent children's benefits do not require that the child remain a full-time student.
- Participants retired on disability may elect to receive an actuarial equivalent benefit under options 1 through 4.
- Retired participants who retired on or after January 1, 1976, may be employed as school consultants and receive a salary and insurance benefits provided other retirants.

3.2 Legislative History of the Retirement System

Effective August 13, 1986, legislation resulted in the following changes:

- A participant with 30 years of credited service who is between the ages of 55 and 62, upon certification by the board of education, is eligible for a supplemental early retirement benefit payable to age 62. This provision remains in effect until December 31, 1991.
- Benefits to a surviving spouse for dependent children are increased from $30 to $60 per month, with a maximum of $240 per month, including the $60 for the surviving spouse.
- Supplemental pay to retired participants employed as "school consultants" is increased by $2 per month for each year between the participant's date of retirement and December 31, 1986

Effective June 19, 1987, legislation resulted in the following changes:

- Reinstated the option for "old plan" participants to elect "new plan" membership by paying the difference in contributions accumulated with interest.
- Increased the minimum benefit for participants retiring on or after age 65 to $10 per month for each year of credited service, up to a maximum of 15 years.
- Several changes were made dealing with the accounting, administration, and operation of the System.

Effective August 13, 1988, legislation resulted in the following changes:

- Made provisions for children's benefits uniform, providing $60 per month per child, up to a maximum of $180 per month, under both subsections 169.460(13) and (15) survivor benefits.
- Supplemental pay to retired participants of $2 per month for each year of retirement up to December 31, 1988.

Effective June 14, 1989, legislation resulted in the following changes:

- The maximum on compensation was removed.
- Average final compensation is based on the highest three consecutive years, rather than the highest five consecutive years.
- Participants may retire with unreduced benefits at any age, if their age plus credited service equals or exceeds 85 (the "Rule of 85").

Effective May 31, 1990, legislation resulted in the following change:

- Supplemental pay of $2 per month for each year of retirement up to December 31, 1990.

Effective August 28, 1993, legislation resulted in the following change:

- Supplemental pay of $3 per month for each year of retirement up to December 31, 1993.

Section 3 (continued)

3.2 Legislative History of the Retirement System

Effective August 28, 1996, legislation resulted in the following changes:

- Provision was added for the purchase of service for certain periods of layoff.
- The investment trustee position was eliminated and the position of school administrator trustee was added.
- Cost-of-living increases for participants who retired prior to August 28, 1996, with at least 15 years of credited service. The cost-of-living increases are up to 3% in one year, with a cumulative maximum of 10%.
- The board of education is authorized to increase retirement benefits and the participant contribution rate, subject to several conditions.

Effective August 28, 1997, legislation resulted in the following change:

- Cost-of-living increases extended to participants who retired prior to August 28, 1997, with at least 15 years of credited service. The cost-of-living increases are up to 3% in one year, with a cumulative maximum of 10%.

In accordance with the statutory authority granted the board of education in 1996, the board of education made the following changes:

- Participant contributions were increased to 4.5%, effective July 1, 1998; to 5.0%, effective July 1, 1999; and, if necessary to 5.5%, effective July 1, 2000.
- The service retirement allowance was changed to 2.00% of average final compensation per year of credited service, subject to a maximum of 60% of average final compensation, effective for participants who retired after June 29, 1999.
- A “catch-up” cost-of-living adjustment (COLA) is provided for participants who retired prior to June 30, 1999, and survivors of participants who retired or died prior to June 30, 1999. The amount of the “catch-up” COLA is equal to 65% of the amount by which the participant’s original benefit would have increased due to increases in the CPI, in excess of any supplements or COLA increases being received by the participant. The “catch-up” COLA is effective July 1, 2000.
- The board of education agreed to contribute 8.03% of covered payroll for 1998, 1999, and 2000, in order to fund the benefit increase and the “catch-up” COLA.

In accordance with the statutory authority granted the board of education in 1996, the board of education made the following changes:

- Effective January 1, 2001, all participants who retired prior to January 1, 2000, received a 3% cost-of-living increase.
- Effective July 1, 2001, a DROP was made available until June 30, 2005, at which time the program will be evaluated to determine whether or not it should be extended. Eligible participants may elect to enter the DROP for up to four years.
- In conjunction with the DROP, employers will contribute at 8.00% of covered payroll for 2001. The contribution rate for subsequent years will be based on the rate determined by the actuarial valuation for the January 1 of the year preceding the year the contribution is due.

Section 3 (continued)

3.2 Legislative History of the Retirement System

Effective August 28, 2002, legislation resulted in the following changes:

- Purchase of service rules were updated.
- The System may accept qualified transfers of funds for the purchase of service.
- Clarified provisions relating to charter school participation in the System.
- Option 5, the level income option is added.
- Replaced the specific actuarial cost method in the statutes with a provision that the method adopted by the board of trustees may be any method in accordance with generally accepted actuarial standards. The amortization period for the UAAL may not exceed 30 years.

Note: There have been no changes to the System's plan provisions since 2002.

Section 3 (continued)

3.3 Changes in System Participation

	Active	Retirees	Beneficiaries	Disabled	Total In Pay Status	Deferred Vested	Nonvested with Balance	Total Terminated Records	Total
Total as of January 1, 2015	**5,011**	4,064	300	260	**4,624**	473	1,539	**2,012**	11,647
New Entrants	**799**						26	**26**	825
Rehires/Transfers	**81**	(2)			**(2)**	(10)	(18)	**(28)**	51
Retirements	**(96)**	121			**121**	(25)		**(25)**	0
Disablements	**(7)**			7	**7**				0
Beneficiaries			23		**23**	6		**6**	29
Deaths	**(7)**	(157)	(16)	(13)	**(186)**	(8)	(2)	**(10)**	(203)
Deferred Vested	**(64)**					64		**64**	0
Nonvested Terminations - Account Balance	**(287)**						287	**287**	0
Refunds Paid in 2015	**(396)**					(17)	(91)	**(108)**	(504)
Data Adjustments						(4)	51	**47**	47
Total as of January 1, 2016	**5,034**	4,026	307	254	**4,587**	479	1,792	**2,271**	11,892

Section 3 (continued)

3.4 Member Census Information

As of January 1	2015	2016
Active Members		
Number	5,011	5,034
Average Age	43.77	43.77
Average Service	7.94	7.93
Average Annual Base Pay	$ 49,032	$ 50,085
Vested Terminated Members		
Number	473	479
Average Account Balance	$ 28,080	$ 28,905
Non-vested Terminated Members		
Number	1,539	1,792
Average Account Balance	$ 3,485	$ 3,532
Benefit Recipients		
Number	4,624	4,587
Average Age	73.35	73.66
Average Monthly Benefit	$ 1,894	$ 1,913

Section 3 (continued)

3.5 Distributions of Active Members

Years of Service By Age
Charter Schools

	Years of Service									
Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
Under 25	111	0	0	0	0	0	0	0	0	111
25 - 29	270	14	1	0	0	0	0	0	0	285
30 - 34	195	52	6	0	0	0	0	0	0	253
35 - 39	95	31	15	3	0	0	0	0	0	144
40 - 44	82	28	12	1	0	0	0	0	0	123
45 - 49	72	25	6	0	1	0	0	0	0	104
50 - 54	67	14	4	2	0	1	0	0	0	88
55 - 59	35	23	4	1	0	0	0	0	0	63
60 - 64	29	13	3	1	0	0	0	0	0	46
65 - 69	6	3	0	1	0	0	0	0	0	10
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	963	203	51	9	1	1	0	0	0	1,228

Years of Service By Age
School District

	Years of Service									
Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
Under 25	126	0	0	0	0	0	0	0	0	126
25 - 29	368	17	0	0	0	0	0	0	0	385
30 - 34	271	108	25	0	0	0	0	0	0	404
35 - 39	224	102	79	25	1	0	0	0	0	431
40 - 44	176	79	95	89	11	0	0	0	0	450
45 - 49	155	72	84	85	33	3	0	0	0	432
50 - 54	151	79	62	71	37	49	9	0	0	458
55 - 59	163	65	70	85	60	72	40	8	0	563
60 - 64	94	49	61	77	40	35	28	27	11	422
65 - 69	27	10	13	22	13	9	6	2	7	109
70 & Up	3	4	5	5	1	2	0	0	0	20
Total	1,758	585	494	459	196	170	83	37	18	3,800

Section 3 (continued)

3.5 Distributions of Active Members

Years of Service By Age
Total

	Years of Service									
Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
Under 25	237	0	0	0	0	0	0	0	0	237
25 - 29	638	31	1	0	0	0	0	0	0	670
30 - 34	466	160	31	0	0	0	0	0	0	657
35 - 39	319	133	94	28	1	0	0	0	0	575
40 - 44	258	107	107	90	11	0	0	0	0	573
45 - 49	227	97	90	85	34	3	0	0	0	536
50 - 54	218	94	67	73	37	50	9	0	0	548
55 - 59	199	88	75	86	60	72	40	8	0	628
60 - 64	123	62	66	78	40	35	28	27	11	470
65 - 69	33	13	13	23	13	9	6	2	7	119
70 & Up	4	4	5	5	1	2	0	0	0	21
Total	2,722	789	549	468	197	171	83	37	18	5,034

Section 3 (continued)

3.6 Distributions of Inactive Members

Deferred Vested and Nonvested

Account Balance	Vested	Non-Vested	Total
0-1,000	28	512	540
1,000-5,000	14	808	822
5,000-10,000	20	338	358
10,000-25,000	184	133	317
25,000-50,000	168	1	169
50,000-75,000	49	0	49
75,000-100,000	11	0	11
100,000+	5	0	5
Total	479	1,792	2,271

Retirees, Beneficiaries and Disabled

Option	Service benefit	Disability benefit	Survivor benefit	All
0	3,411	200	307	3,917
1	135	17	0	152
2	83	5	0	88
3	183	16	0	199
4	182	6	0	188
5	21	4	0	25
6	11	6	0	17
7	1	0	0	1
Total	4,026	254	307	4,587

Annual Benefit

Option	Service benefit	Disability benefit	Survivor benefit	All
0	$84,559,890	$2,794,350	$3,421,708	$ 90,287,256
1	2,555,597	237,245	0	2,792,842
2	1,917,967	124,270	0	2,042,237
3	3,739,065	216,148	0	3,955,213
4	4,709,722	131,227	0	4,840,949
5	545,404	34,567	0	579,972
6	227,130	50,744	0	277,875
7	30,849	0	0	30,849
Total	$98,285,625	$3,588,552	$3,421,708	$105,295,884

Section 3 (continued)

3.7 Schedule of Retirees and Beneficiaries Added/Removed From Rolls

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls (Last Six Years)

Plan Year	Added to Payroll No.	Added to Payroll Annual Allowances	Removed from Payroll No.	Removed from Payroll Annual Allowances	Payroll Year-End No.	Payroll Year-End Annual Allowances	% Increase in Annual Allowances	Average Annual Allowance
2009	N/A		N/A		N/A		N/A	N/A
2010	N/A		N/A		4,370		N/A	N/A
2011	373		156		4,587	$ 98,927,501	N/A	$ 21,567
2012	135	$ 2,606,505	182	$ 2,793,752	4,540	$ 98,768,933	-0.16%	$ 21,755
2013	164	$ 3,544,756	188	$ 2,699,920	4,516	$ 99,629,314	0.87%	$ 22,061
2014	313	$ 7,711,256	140	$ 2,288,004	4,689	$105,061,832	5.45%	$ 22,406
2015	163	$ 3,774,578	228	$ 3,783,237	4,624	$105,066,268	0.00%	$ 22,722
2016	151	$ 3,279,162	188	$ 3,058,449	4,587	$105,295,884	0.22%	$ 22,955

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Interest

8.0% per annum.

Participant account interest crediting rate

5.0% per annum.

Expenses

The rate of interest assumed is net of expenses.

Mortality

Mortality tables mandated by the Pension Protection Act as specified in IRS Regulation 1.430(h)(3)-1, applied on a static basis, projected 7 years from the valuation date for annuitants and 15 years for non-annuitants. Rates are shown for pre-commencement in Table 1 and post-commencement in Table 2.

Disability Mortality

The RP-2000 Disability Mortality Table is used for disabled participants. Rates are shown in Table 6.

Withdrawal

Withdrawals are assumed to occur at rates based on actual experience of the retirement system. During the first five years of membership, withdrawals are assumed to occur at the following rates:

Year of Membership	Non-charter school employees	Charter school employees
1st	25.0%	30.0%
2nd	20.0%	25.0%
3rd	15.0%	20.0%
4th	12.5%	15.0%
5th	10.0%	10.0%

The rates used after the first five years of membership are shown in Table 3.

Salary scale

Salaries are assumed to increase at the rate of 4.5% per year.

Disability

Disabilities are assumed to occur at rates based on the actual experience of the retirement system. The rates used are shown in Table 5.

3.8 Summary of Methods and Assumptions

Retirement

Retirements occur at rates based on the actual experience of the retirement system. The age-related rates used are shown in Table 4. Unless the age-related rate is greater, for those eligible to retire under the Rule of 85, it is assumed that 25% will retire when first eligible for unreduced benefits with at least 30 years of credited service.

Family Structure

The probability of a participant being married and the probable number of children are based on a table constructed by the Social Security Administration, modified to reflect the experience of the retirement system. The rates used are shown in Table 7. For married participants, husbands are assumed to be 3 years older than their wives.

Usage of Cash-out Option

Participants terminating in vested status are given the option of taking a refund of their accumulated participant contributions instead of a deferred retirement benefit. Active members who terminate in the future with a vested benefit are assumed to take a deferred vested annuity, unless a refund of contributions and interest is greater than the actuarial present value of their vested deferred benefit.

Future Benefit Increases or Additional Benefits

When funding is adequate, the Board may authorize cost of living adjustments (COLAs), as noted in the summary of plan provisions. In the past, the Board has also sometimes granted an additional monthly payment to retirees (13th check.) This valuation assumes that no future COLAs and no future 13th checks will be awarded.

Actuarial Method – Frozen Entry Age

The actuarial cost method used by the System is the "frozen entry age actuarial cost method." Under this method, on the initial actuarial valuation date for which the cost method is used, the annual cost accruals (individual normal costs for each participant) are determined as a level percentage of pay for each year from entry age until retirement or termination. The UFAAL was originally determined as of January 1, 1981. Entry age is determined at the date each participant would have entered the System. The sum of these individual normal costs for all active participants whose attained ages are under the assumed retirement age is the normal cost for the initial plan year. The excess of all normal costs falling due prior to the initial actuarial valuation date, accumulated with interest, over the plan assets establishes the initial Unfunded Frozen Actuarial Accrued Liability (UFAAL).

The UFAAL is only frozen in that it is not adjusted due to experience gains and losses. Instead, gains and losses are reflected through changes in the normal cost accrual rate. The UFAAL does change, increasing due to interest and additional normal costs, and decreasing due to contributions. Any changes to plan provisions or actuarial assumptions results in a change to the UFAAL. The amount of the change is determined by computing the impact in the actuarial accrued liability as of the valuation date coincident with or next following the change.

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Normal costs are calculated as the level percentage of pay required to fund the excess of the actuarial present value of future benefits over the sum of the actuarial value of current assets and the remaining UFAAL.

Effective January 1, 2006, UFAAL was reestablished to better reflect an appropriate relationship between the normal cost and the actuarial accrued liability.

The funding requirement for each plan year is the sum of the "normal cost contribution" (equal to the normal cost for that year), plus the "actuarial accrued liability contribution." The "actuarial accrued liability contribution" is the payment required to amortize the UFAAL over 30 years, from January 1, 2006, the date that it was reestablished.

Valuation of Assets

The actuarial value of assets is determined using the assumed yield method of valuing assets. Under the assumed yield asset valuation method, the prior year's actuarial value is increased at the assumed rate of return with appropriate adjustments for contributions and disbursements to produce an expected actuarial value of assets at the end of the year. The expected actuarial value is compared to the market value of assets less the expense and contingency reserve, and 20% of the difference is added to the expected actuarial value. The actuarial value of assets was "fresh-started" as of January 1, 2006 and set equal to the market value of assets as of that date.

Changes from the Prior Valuation

The mortality table for non-disabled members was updated to the IRS Static Mortality Table mandated for use by private pension plans for the 2016 plan year. This uses a separate table for pre-commencement and post-commencement.

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Table 1
Mortality Rates for Pre-Commencement
Annual Rates Per 1,000 Members

	Rate			Rate	
Age	Male	Female	Age	Male	Female
20	0.190	0.116	60	2.959	3.365
21	0.203	0.113	61	3.369	3.668
22	0.215	0.114	62	3.704	3.986
23	0.233	0.119	63	4.180	4.314
24	0.251	0.126	64	4.540	4.648
25	0.275	0.134	65	4.892	4.983
26	0.314	0.147	66	5.398	5.314
27	0.327	0.153	67	5.731	5.636
28	0.336	0.162	68	5.858	5.945
29	0.353	0.171	69	6.143	6.240
30	0.380	0.193	70	6.210	6.517
31	0.427	0.239	71	7.026	7.108
32	0.481	0.273	72	8.658	8.290
33	0.540	0.298	73	11.106	10.064
34	0.601	0.319	74	14.369	12.429
35	0.662	0.337	75	18.448	15.385
36	0.720	0.354	76	23.343	18.932
37	0.774	0.369	77	29.054	23.071
38	0.800	0.386	78	35.581	27.801
39	0.821	0.406	79	42.924	33.122
40	0.841	0.442	80	51.083	39.034
41	0.863	0.484	81	58.516	43.204
42	0.890	0.533	82	66.910	47.896
43	0.922	0.586	83	74.584	53.181
44	0.961	0.644	84	84.893	59.146
45	1.005	0.682	85	94.233	67.435
46	1.044	0.719	86	104.477	76.970
47	1.085	0.755	87	118.458	87.853
48	1.128	0.817	88	134.192	97.854
49	1.172	0.883	89	148.298	111.198
50	1.217	0.985	90	167.257	122.890
51	1.262	1.100	91	182.177	134.949
52	1.309	1.271	92	202.142	147.094
53	1.401	1.468	93	218.060	162.763
54	1.503	1.700	94	233.954	174.573
55	1.671	1.969	95	255.453	185.756
56	1.883	2.287	96	271.129	196.137
57	2.132	2.577	97	286.358	210.344
58	2.424	2.817	98	308.123	218.852
59	2.677	3.081	99	322.695	226.123

3.8 Summary of Methods and Assumptions

Table 2
Mortality Rates for Post-Commencement
Annual Rates Per 1,000 Members

	Rate			Rate	
Age	Male	Female	Age	Male	Female
20	0.190	0.116	60	5.656	5.525
21	0.203	0.113	61	6.358	6.166
22	0.215	0.114	62	7.004	6.852
23	0.233	0.119	63	7.918	7.582
24	0.251	0.126	64	8.761	8.372
25	0.275	0.134	65	9.703	9.235
26	0.314	0.147	66	11.004	10.170
27	0.327	0.153	67	12.182	11.175
28	0.336	0.162	68	13.160	12.271
29	0.353	0.171	69	14.537	13.503
30	0.380	0.193	70	15.686	14.919
31	0.427	0.239	71	17.356	16.177
32	0.481	0.273	72	19.271	17.994
33	0.540	0.298	73	21.465	19.543
34	0.601	0.319	74	23.946	21.660
35	0.662	0.337	75	27.356	23.365
36	0.720	0.354	76	30.490	25.743
37	0.774	0.369	77	34.715	29.017
38	0.800	0.386	78	39.486	31.986
39	0.821	0.406	79	44.915	35.314
40	0.841	0.442	80	51.083	39.034
41	0.890	0.484	81	58.516	43.204
42	0.987	0.533	82	66.910	47.896
43	1.133	0.586	83	74.584	53.181
44	1.328	0.644	84	84.893	59.146
45	1.572	0.689	85	94.233	67.435
46	1.864	0.778	86	104.477	76.970
47	2.205	0.912	87	118.458	87.853
48	2.595	1.090	88	134.192	97.854
49	3.034	1.313	89	148.298	111.198
50	3.521	1.580	90	167.257	122.890
51	3.556	1.697	91	182.177	134.949
52	3.546	1.914	92	202.142	147.094
53	3.595	2.193	93	218.060	162.763
54	3.643	2.532	94	233.954	174.573
55	3.798	2.935	95	255.453	185.756
56	4.033	3.418	96	271.129	196.137
57	4.344	3.908	97	286.358	210.344
58	4.758	4.385	98	308.123	218.852
59	5.165	4.929	99	322.695	226.123

3.8 Summary of Methods and Assumptions

Table 3
Withdrawal Rates
Annual Rates Per 1,000 Members

Age	Rate	Age	Rate
20	185.0	45	40.0
21	179.0	46	37.0
22	173.0	47	34.0
23	167.0	48	31.0
24	161.0	49	28.0
25	155.0	50	25.0
26	146.0	51	24.0
27	137.0	52	23.0
28	128.0	53	22.0
29	119.0	54	21.0
30	110.0	55	20.0
31	106.0	56	19.0
32	102.0	57	18.0
33	98.0	58	17.0
34	94.0	59	16.0
35	90.0	60	15.0
36	87.0	61	0.0
37	84.0	62	0.0
38	81.0	63	0.0
39	78.0	64	0.0
40	75.0		
41	68.0		
42	61.0		
43	54.0		
44	47.0		

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Table 4
Retirement Rates
Annual Rates Per 1,000 Members

Age	Rule of 85 Rate	Not Rule of 85 Rate
< 60	200.0	N/A
60	200.0	100.0
61	200.0	150.0
62	250.0	200.0
63	250.0	175.0
64	250.0	200.0
65	350.0	350.0
66	200.0	200.0
67	200.0	200.0
68	200.0	200.0
69	200.0	200.0
70 - 71	300.0	300.0
72	1,000.0	1,000.0

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Table 5
Disability Rates
Annual Rates Per 1,000 Members

	Rate			Rate	
Age	Males	Females	Age	Males	Females
20	0.00	0.00	45	1.50	1.00
21	0.00	0.00	46	1.60	1.10
22	0.00	0.00	47	1.70	1.20
23	0.00	0.00	48	1.80	1.30
24	0.00	0.00	49	1.90	1.40
25	0.00	0.00	50	2.00	1.50
26	0.00	0.00	51	2.50	1.70
27	0.00	0.00	52	3.00	1.90
28	0.00	0.00	53	3.50	2.10
29	0.00	0.00	54	4.00	2.30
30	0.40	0.40	55	4.50	2.50
31	0.40	0.40	56	4.70	2.60
32	0.40	0.40	57	4.90	2.75
33	0.40	0.40	58	5.10	2.85
34	0.40	0.40	59	5.30	3.00
35	0.40	0.40	60	5.50	3.25
36	0.45	0.45	61	6.00	3.50
37	0.50	0.50	62	6.50	3.50
38	0.60	0.60	63	7.00	3.50
39	0.70	0.70	64	7.50	3.50
40	0.80	0.75	65	0.00	0.00
41	0.95	0.80			
42	1.10	0.85			
43	1.25	0.90			
44	1.40	0.95			

Section 3 (continued)

3.8 Summary of Methods and Assumptions

Table 6
Post-Disability Mortality Rates
Annual Rates Per 1,000 Members

	Rate			Rate	
Age	Male	Female	Age	Male	Female
20	0.000	0.000	60	42.042	21.839
21	22.571	7.450	61	43.474	22.936
22	22.571	7.450	62	44.981	24.080
23	22.571	7.450	63	46.584	25.293
24	22.571	7.450	64	48.307	26.600
25	22.571	7.450	65	50.174	28.026
26	22.571	7.450	66	52.213	29.594
27	22.571	7.450	67	54.450	31.325
28	22.571	7.450	68	56.909	33.234
29	22.571	7.450	69	59.613	35.335
30	22.571	7.450	70	62.583	37.635
31	22.571	7.450	71	65.841	40.140
32	22.571	7.450	72	69.405	42.851
33	22.571	7.450	73	73.292	45.769
34	22.571	7.450	74	77.512	48.895
35	22.571	7.450	75	82.067	52.230
36	22.571	7.450	76	86.951	55.777
37	22.571	7.450	77	92.149	59.545
38	22.571	7.450	78	97.640	63.545
39	22.571	7.450	79	103.392	67.793
40	22.571	7.450	80	109.372	72.312
41	22.571	7.450	81	115.544	77.135
42	22.571	7.450	82	121.877	82.298
43	22.571	7.450	83	128.343	87.838
44	22.571	7.450	84	134.923	93.794
45	22.571	7.450	85	141.603	100.203
46	23.847	8.184	86	148.374	107.099
47	25.124	8.959	87	155.235	114.512
48	26.404	9.775	88	162.186	122.464
49	27.687	10.634	89	169.233	130.972
50	28.975	11.535	90	183.408	140.049
51	30.268	12.477	91	199.769	149.698
52	31.563	13.456	92	216.605	159.924
53	32.859	14.465	93	233.662	170.433
54	34.152	15.497	94	250.693	182.799
55	35.442	16.544	95	267.491	194.509
56	36.732	17.598	96	283.905	205.379
57	38.026	18.654	97	299.852	215.240
58	39.334	19.710	98	315.296	223.941
59	40.668	20.768	99	330.207	231.387

3.8 Summary of Methods and Assumptions

Table 7
Family Structure

Age		Age of youngest child	Average number of children	Probability of being married	Probability of children if married
Male	Female				
20	17	2	.90	.30	.50
21	18	2	.90	.35	.50
22	19	2	.98	.40	.50
23	20	2	.98	.46	.53
24	21	3	1.05	.53	.56
25	22	3	1.13	.60	.59
26	23	4	1.20	.67	.62
27	24	4	1.28	.74	.65
28	25	4	1.35	.76	.67
29	26	5	1.43	.78	.69
30	27	5	1.50	.80	.71
31	28	6	1.58	.82	.73
32	29	6	1.65	.84	.75
33	30	7	1.80	.85	.76
34	31	7	1.95	.86	.77
35	32	8	2.10	.87	.78
36	33	8	2.10	.87	.79
37	34	9	2.10	.87	.80
38	35	9	2.30	.87	.79
39	36	10	1.95	.87	.78
40	37	10	1.88	.87	.77
41	38	11	1.80	.87	.76
42	39	11	1.73	.87	.75
43	40	11	1.73	.87	.72
44	41	12	1.65	.87	.69
45	42	12	1.65	.86	.66
46	43	12	1.58	.86	.63
47	44	12	1.58	.86	.60
48	45	12	1.50	.85	.56
49	46	12	1.43	.85	.52
50	47	13	1.43	.85	.48
51	48	13	1.35	.85	.44
52	49	13	1.35	.85	.40
53	50	13	1.35	.85	.37
54	51	13	1.35	.84	.34

3.8 Summary of Methods and Assumptions

Table 7
Family Structure
(continued)

Age		Age of youngest child	Average number of children	Probability of being married	Probability of children if married
Male	Female				
55	52	13	1.28	.84	.31
56	53	13	1.28	.83	.28
57	54	13	1.28	.83	.25
58	55	13	1.28	.83	.23
59	56	13	1.20	.82	.21
60	57	13	1.20	.81	.19
61	58	13	1.20	.80	.17
62	59	13	1.20	.79	.15
63	60	13	1.20	.78	.13
64	61	13	1.20	.77	.11
65	62	13	1.13	.76	.09
66	63	13	1.13	.75	.07
67	64	13	1.13	.74	.05
68	65	13	1.13	.73	.04
69	66	13	1.05	.72	.03
70	67	13	1.05	.71	.02
71	68	13	1.05	.70	.01

Section 3 (continued)

3.9 Definition of Actuarial Terms

Accrued benefit

The benefit earned by a participant as of the date at which the determination is made payable in the form of an annual benefit commencing at normal retirement age. The accrued benefit is payable for the member’s lifetime only, however if the total monthly payments at the member’s death are less than contributions accumulated with interest, the remaining employee contribution balance will be paid to the member’s beneficiary.

Accumulated plan benefits

The accrued benefits and any other benefits, whether vested or not, that have been earned by the participants covered by the plan as of the date at which the determination is made. These other benefits include any death, early retirement or disability benefits provided under the plan.

Actuarial accrued liability

Equal to the actuarial present value of future benefits less the present value of future annual normal costs.

Actuarial cost method

The method for allocating the actuarial present value of a pension plan's benefits and expenses to various time periods. An actuarial cost method is also referred to as a funding method.

Actuarial gain/(loss)

The difference between the plan's actual experience and that expected based upon a set of actuarial assumptions. A gain occurs when the experience of the plan is more favorable (in terms of cost) than the assumptions projected; a loss occurs when experience is less favorable. May also be referred to as experience gains/(losses).

Actuarial present value

See present value.

Actuarial valuation

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

Actuarial value of assets

The value of cash, investments and other property belonging to a pension plan determined by the actuary for the purpose of an actuarial valuation. Actuarial asset methods are generally designed to reduce fluctuations in asset value due to large variations in returns from year to year. Actuarial values are generally a smoothed market value that recognize gains and losses over time.

Amortization

The spreading of a present value or a cost over a period of years. A plan's unfunded actuarial accrued liability is amortized over a period of years.

Section 3 (continued)

3.9 Definition of Actuarial Terms

Fiscal year

The year on which the plan sponsor maintains its financial records.

Funded

Provided by plan assets. A liability is fully funded when assets exceed or equal the liability.

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.

Normal retirement age

An age defined in the plan for purposes of establishing when a terminated participant is entitled to an accrued benefit.

Normal retirement benefit

The benefit payable when it commences at the normal retirement age.

Participant

A person covered by a pension plan in accordance with its terms including active participants, retired participants and beneficiaries, vested terminations and vested transfers.

Plan year

The year on which the plan maintains its financial records.

Present value

The value of an amount or series of amounts payable at various times, determined as of a given date by the application based on a particular set of actuarial assumptions. It is a single sum which reflects the time value of money and the probabilities of payment.

Rate of return

The actual or expected investment income as a percentage of a plan's average assets.

System

Public School Retirement System of the City of St. Louis, Missouri.

Unfunded actuarial accrued liability

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

Vested benefit

A benefit that is not forfeited if the participant terminates employment.

Public School Retirement System of the City of St. Louis, Missouri

2016 Valuation Results

June 20, 2016

buckconsultants

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Data – Population as of 1/1/2016

	2016	2015	Change
Retirees and Beneficiaries	4,587	4,624	-37
Inactives	2,271	2,012	259
Actives			
School District	3,800	3,826	-26
Charter Schools	1,228	1,178	50
Retirement System	6	7	-1
Total Actives	5,034	5,011	23
Total	11,892	11,647	245

Data – Member Census Information

	As of January 1	
	2016	**2015**
Active Members		
Number	5,034	5,011
Average Age	43.77	43.77
Average Service	7.93	7.94
Average Annual Base Pay	$50,085	$49,032
Vested Terminated Members		
Number	479	473
Average Account Balance	$28,905	$28,080
Non-vested Terminated Members		
Number	1,792	1,539
Average Account Balance	$ 3,532	$ 3,485
Benefit Recipients		
Number	4,587	4,624
Average Age	73.66	73.35
Average Monthly Benefit	$ 1,913	$ 1,894

Valuation Results – Summary

	January 1, 2016	January 1, 2015
System Assets		
Expense and contingency reserve	$ 29,537,454	$ 29,868,370
Market value, excluding expense & contingency reserve	839,141,595	907,062,130
Actuarial value	915,391,079	926,905,797
System liabilities		
Unfunded actuarial accrued liability	$ 162,302,064	$ 166,687,451
Projected unit credit liability	$ 1,165,766,472	$ 1,166,064,968
Funding Ratio (PUC)		
Actuarial value funding ratio	78.5%	79.5%
Market value funding ratio	72.0%	77.8%
Employer Cost (% of active payroll)	15.73%	15.14%

Valuation Results – Annual Required Contribution

	2016 Valuation	2015 Valuation	Increase / (Decrease)
Normal cost contribution	23,127,132	20,569,969	2,557,163
Actuarial accrued liability contribution	16,530,824	16,640,783	(109,959)
Annual required contribution (ARC)	39,657,956	37,210,752	2,447,204
Covered compensation	252,127,288	245,699,583	6,427,705
ARC as % of covered compensation	15.73%	15.14%	0.59%

Valuation Results – Reconciliation of ARC

	ARC as a % of payroll
2015 valuation cost	15.14%
Demographic experience	(0.54)%
Asset experience	1.06%
Assumption changes	0.07%
2016 valuation cost	15.73%

Increases positive
(Decreases negative)

Valuation Results – ARC By Employer Group

	Board of Education	Retirement System	Charter Schools	Total
Normal cost contribution	17,762,876	43,530	5,320,726	23,127,132
Actuarial accrued liability contribution	12,696,558	31,114	3,803,152	16,530,824
Annual required contribution (ARC)	30,459,434	74,644	9,123,878	39,657,956
Covered compensation	193,647,262	474,551	58,005,475	252,127,288
ARC as % of covered compensation	15.73%	15.73%	15.73%	15.73%

Gain/Loss – Liability

	Dollar amounts in millions
A. 2015 Entry Age Normal Liability	$1,192.7
B. Expected 2016 Entry Age Normal Liability	$1,193.5
C. Actual 2016 Entry Age Normal Liability	$1,196.8
Gain / (Loss): B – C	$(3.3)
Gain / (Loss) as a Percent of Expected	(0.3)%

Gain/Loss – Assets

	Actuarial Value of Assets ($ in millions)	Market Value of Assets ($ in millions)
A. 2015 Assets	$926.9	$936.9
B. Expected 2016 Assets	$934.5	$945.3
C. Actual 2016 Assets	$915.4	$868.7
D. Gain/(Loss): C – B	$(19.1)	$(76.6)
E. Expected Return	8.0%	8.0%
F. Actual Return	5.7%	(0.6)%
G. Gain/(Loss): F - E	(2.3)%	(8.6)%

Actual return calculation assumes mid-year cash flows

GASB Highlights

GASB Board approved final statements amending pension accounting and financial reporting requirements on June 25, 2012

- GASB Statement No. 25: Financial Reporting for Pension Plans amended by GASB Statement No. 67
- GASB Statement No. 27: Accounting for Pensions by Employers amended by GASB Statement No. 68

Highlights of GASB Changes:

- Separates Funding Policy from Accounting Expense
- Balance sheet of employer will reflect the funded status of plan
  - On Market Value basis
  - Entry Age Normal Cost Method must be used
  - Discount rate may be different than funding discount rate
- Additional financial statement notes and supplementary information

Any Final Questions on the Valuation?

Request Board Approval of Report Results

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Ready For Real Business

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June 6, 2016

Mr. Andrew Clark
Executive Director
PSRS of the City of St. Louis
3641 Olive Street, Suite 300
St. Louis, MO 63108-3601

Re: Public School Retirement System of the City of St. Louis, Missouri
GASB 67 & GASB 68 Disclosures for Fiscal Year Ending December 31, 2015

Dear Members of the Board:

We have prepared certain required liability and asset accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 and GASB Statement No. 68 for The Public School Retirement System of the City of St. Louis, Missouri (PSRS) for fiscal year ending December 31, 2015.

Please note that GASB Statement No. 25 (*Financial Reporting for Defined Benefit Pension Plans*) is applicable for fiscal years ending prior to 2014 and has been replaced by GASB Statement No. 67 (*Financial Reporting for Pension Plans)* for fiscal years ending 2014 and later. Similarly, GASB Statement No. 27 (*Accounting for Pensions by State and Local Governmental Employers*) is applicable for fiscal years ending prior to 2015 and has been replaced by GASB Statement No. 68 (*Accounting and Financial Reporting for Pensions*) for fiscal years ending 2015 and later.

GASB Statement No. 67

GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan.

1. Following is the schedule of Net Pension Liability.

Net Pension Liability (Asset)

Total Pension Liability	$ 1,190,927,335
Plan Fiduciary Net Position	868,679,049
Net Pension Liability (Asset)	$ 322,248,286
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	72.94%

2. Following is the sensitivity of the net pension liability to changes in the discount rate.

Sensitivity of the Net Pension Liability
To Changes in the Discount Rate

	1% Decrease	Current	1% Increase
Discount Rate	7.00%	8.00%	9.00%
Net Pension Liability (Asset)	431,230,360	322,248,286	228,509,903

3. The discount rate used to measure the total pension liability was 8.00%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be sufficient to make all projected future benefit payments of current plan members. Please see Appendix A for additional detail.

4. A schedule of changes in the net pension liability for the year ending December 31, 2015 is provided in Appendix B.

5. Under GASB Statement No. 68, employers participating in the plan would recognize a total pension expense of $50,953,378 for their fiscal year beginning after June 15, 2015. Details of this calculation are included in Appendix C.

5. Summary of Significant Accounting Policies.

   - **Method used to value investments**. Investments are reported at fair value.

   - **Actuarial cost method**. Entry Age Normal – Level Percent of Pay Method.

The plan sponsor selected the assumptions used for the accounting results in this letter. We believe that these assumptions are reasonable and comply with the requirements of GASB Statement No. 67 and GASB Statement No. 68, as applicable. We prepared this letter in accordance with the requirements of this standard. Full summaries of all other assumptions, methods and plan provisions used in the preparation of this required accounting information are provided in Appendix D.

Buck performed the valuation using participant data and financial data supplied by the Retirement Systems staffs. Buck reviewed the data for reasonableness and consistency with data for the prior valuation, but performed no audit of the data. The results of the valuation are dependent on the accuracy of the data.

The primary purpose of this letter is to provide information for the PSRS of St. Louis. Use of this report for any other purposes or by anyone other than the PSRS of St. Louis and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask us to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without our prior review.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Buck performed no analysis of the potential range of such future differences other than the sensitivity to changes in the discount rate required by GASB Statement No. 67.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Please let us know if you require additional information.

Sincerely,

Stephen B Siepman

Stephen B. Siepman, FSA, EA, MAAA
Principal, Consulting Actuary

Troy Jaros

Troy Jaros, FSA, EA, MAAA, FCA
Senior Consultant, Retirement Actuary

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Appendix A, Table 1 – Projection of Fiduciary Net Position (000's omitted)

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2016	$ 868,679	$ 48,227	$ 107,328	$ 65,642	$ 875,220
2017	$ 875,220	$ 44,995	$ 106,929	$ 66,146	$ 879,432
2018	$ 879,432	$ 44,842	$ 106,494	$ 66,473	$ 884,253
2019	$ 884,253	$ 44,973	$ 106,059	$ 66,855	$ 890,022
2020	$ 890,022	$ 45,045	$ 105,874	$ 67,305	$ 896,498
2021	$ 896,498	$ 44,976	$ 105,880	$ 67,806	$ 903,399
2022	$ 903,399	$ 44,753	$ 105,613	$ 68,353	$ 910,892
2023	$ 910,892	$ 44,377	$ 105,257	$ 68,952	$ 918,964
2024	$ 918,964	$ 43,906	$ 104,812	$ 69,603	$ 927,661
2025	$ 927,661	$ 43,327	$ 104,317	$ 70,306	$ 936,977
2026	$ 936,977	$ 42,653	$ 103,819	$ 71,059	$ 946,869
2027	$ 946,869	$ 41,885	$ 103,313	$ 71,859	$ 957,300
2028	$ 957,300	$ 41,058	$ 102,996	$ 72,694	$ 968,056
2029	$ 968,056	$ 40,151	$ 102,706	$ 73,555	$ 979,055
2030	$ 979,055	$ 39,143	$ 102,511	$ 74,431	$ 990,119
2031	$ 990,119	$ 38,029	$ 102,351	$ 75,311	$ 1,001,108
2032	$ 1,001,108	$ 36,805	$ 102,394	$ 76,177	$ 1,011,697
2033	$ 1,011,697	$ 35,453	$ 102,649	$ 77,002	$ 1,021,503
2034	$ 1,021,503	$ 33,893	$ 102,846	$ 77,766	$ 1,030,315
2035	$ 1,030,315	$ 31,997	$ 103,185	$ 78,446	$ 1,037,573
2036	$ 1,037,573	$ 29,089	$ 103,253	$ 79,012	$ 1,042,421
2037	$ 1,042,421	$ 9,126	$ 103,291	$ 79,386	$ 1,027,642
2038	$ 1,027,642	$ 7,076	$ 103,197	$ 78,197	$ 1,009,718
2039	$ 1,009,718	$ 6,637	$ 102,921	$ 76,763	$ 990,196
2040	$ 990,196	$ 6,347	$ 102,787	$ 75,196	$ 968,952
2041	$ 968,952	$ 6,064	$ 102,500	$ 73,497	$ 946,014
2042	$ 946,014	$ 5,791	$ 102,474	$ 71,653	$ 920,984
2043	$ 920,984	$ 5,534	$ 102,151	$ 69,653	$ 894,020
2044	$ 894,020	$ 5,296	$ 101,562	$ 67,510	$ 865,264
2045	$ 865,264	$ 5,100	$ 100,743	$ 65,233	$ 834,854
2046	$ 834,854	$ 4,927	$ 99,765	$ 62,831	$ 802,848
2047	$ 802,848	$ 4,789	$ 98,337	$ 60,321	$ 769,621
2048	$ 769,621	$ 4,699	$ 96,501	$ 57,731	$ 735,549
2049	$ 735,549	$ 4,644	$ 94,562	$ 55,078	$ 700,709
2050	$ 700,709	$ 4,628	$ 92,350	$ 52,375	$ 665,362
2051	$ 665,362	$ 4,642	$ 89,802	$ 49,647	$ 629,850
2052	$ 629,850	$ 4,693	$ 86,858	$ 46,921	$ 594,606
2053	$ 594,606	$ 4,756	$ 83,638	$ 44,229	$ 559,953
2054	$ 559,953	$ 4,832	$ 80,347	$ 41,587	$ 526,024
2055	$ 526,024	$ 4,926	$ 77,000	$ 39,005	$ 492,955
2056	$ 492,955	$ 4,978	$ 73,616	$ 36,494	$ 460,810
2057	$ 460,810	$ 5,045	$ 70,214	$ 34,058	$ 429,699
2058	$ 429,699	$ 5,154	$ 66,811	$ 31,705	$ 399,747
2059	$ 399,747	$ 5,315	$ 63,407	$ 29,444	$ 371,099
2060	$ 371,099	$ 5,454	$ 60,008	$ 27,288	$ 343,833

Appendix A, Table 1 – Projection of Fiduciary Net Position (000's omitted)

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2061	$ 343,833	$ 5,606	$ 56,629	$ 25,242	$ 318,052
2062	$ 318,052	$ 5,894	$ 53,269	$ 23,314	$ 293,991
2063	$ 293,991	$ 5,936	$ 49,931	$ 21,522	$ 271,518
2064	$ 271,518	$ 5,388	$ 46,630	$ 19,856	$ 250,132
2065	$ 250,132	$ 4,943	$ 43,384	$ 18,275	$ 229,966
2066	$ 229,966	$ 2,566	$ 40,205	$ 16,789	$ 209,116
2067	$ 209,116	$ -	$ 37,101	$ 15,245	$ 187,260
2068	$ 187,260	$ -	$ 34,084	$ 13,617	$ 166,794
2069	$ 166,794	$ -	$ 31,164	$ 12,097	$ 147,727
2070	$ 147,727	$ -	$ 28,349	$ 10,684	$ 130,062
2071	$ 130,062	$ -	$ 25,647	$ 9,379	$ 113,794
2072	$ 113,794	$ -	$ 23,069	$ 8,181	$ 98,907
2073	$ 98,907	$ -	$ 20,622	$ 7,088	$ 85,373
2074	$ 85,373	$ -	$ 18,312	$ 6,097	$ 73,158
2075	$ 73,158	$ -	$ 16,144	$ 5,207	$ 62,221
2076	$ 62,221	$ -	$ 14,124	$ 4,413	$ 52,510
2077	$ 52,510	$ -	$ 12,254	$ 3,711	$ 43,967
2078	$ 43,967	$ -	$ 10,537	$ 3,096	$ 36,526
2079	$ 36,526	$ -	$ 8,976	$ 2,563	$ 30,113
2080	$ 30,113	$ -	$ 7,571	$ 2,106	$ 24,648
2081	$ 24,648	$ -	$ 6,321	$ 1,719	$ 20,046
2082	$ 20,046	$ -	$ 5,221	$ 1,395	$ 16,219
2083	$ 16,219	$ -	$ 4,265	$ 1,127	$ 13,081
2084	$ 13,081	$ -	$ 3,443	$ 909	$ 10,547
2085	$ 10,547	$ -	$ 2,746	$ 734	$ 8,535
2086	$ 8,535	$ -	$ 2,164	$ 596	$ 6,966
2087	$ 6,966	$ -	$ 1,684	$ 490	$ 5,772
2088	$ 5,772	$ -	$ 1,294	$ 410	$ 4,888
2089	$ 4,888	$ -	$ 981	$ 352	$ 4,259
2090	$ 4,259	$ -	$ 734	$ 311	$ 3,837
2091	$ 3,837	$ -	$ 541	$ 285	$ 3,581
2092	$ 3,581	$ -	$ 394	$ 271	$ 3,458
2093	$ 3,458	$ -	$ 282	$ 265	$ 3,442
2094	$ 3,442	$ -	$ 199	$ 267	$ 3,511
2095	$ 3,511	$ -	$ 138	$ 275	$ 3,648
2096	$ 3,648	$ -	$ 94	$ 288	$ 3,842
2097	$ 3,842	$ -	$ 63	$ 305	$ 4,083
2098	$ 4,083	$ -	$ 42	$ 325	$ 4,366
2099	$ 4,366	$ -	$ 27	$ 348	$ 4,687
2100	$ 4,687	$ -	$ 17	$ 374	$ 5,044
2101	$ 5,044	$ -	$ 11	$ 403	$ 5,437
2102	$ 5,437	$ -	$ 7	$ 435	$ 5,865
2103	$ 5,865	$ -	$ 4	$ 469	$ 6,329
2104	$ 6,329	$ -	$ 2	$ 506	$ 6,833
2105	$ 6,833	$ -	$ 1	$ 547	$ 7,378

Appendix A, Table 1 – Projection of Fiduciary Net Position (000's omitted)

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2106	$ 7,378	$ -	$ 1	$ 590	$ 7,968
2107	$ 7,968	$ -	$ 0	$ 637	$ 8,605
2108	$ 8,605	$ -	$ 0	$ 688	$ 9,293
2109	$ 9,293	$ -	$ 0	$ 743	$ 10,036
2110	$ 10,036	$ -	$ 0	$ 803	$ 10,839
2111	$ 10,839	$ -	$ 0	$ 867	$ 11,706
2112	$ 11,706	$ -	$ 0	$ 936	$ 12,643
2113	$ 12,643	$ -	$ 0	$ 1,011	$ 13,654
2114	$ 13,654	$ -	$ 0	$ 1,092	$ 14,746

Appendix A, Table 2 – Actuarial Present Values of Projected Benefit Payments (000’s omitted)

Fiscal Year Ending 12/31		Beginning Fiduciary Net Position		Benefit Payments	Benefit Payments: Funded Portion	Benefit Payments: Unfunded Portion	Present Value of Benefit Payments: Funded Portion at 8.00%	Present Value of Benefit Payments: Unfunded Portion at 3.20%	Present Value of Benefit Payments: Using a Single Discount Rate of 8.00%
2016	$	868,679	$	107,328	107,328	-	103,277	-	103,277
2017	$	875,220	$	106,929	106,929	-	95,271	-	95,271
2018	$	879,432	$	106,494	106,494	-	87,855	-	87,855
2019	$	884,253	$	106,059	106,059	-	81,014	-	81,014
2020	$	890,022	$	105,874	105,874	-	74,883	-	74,883
2021	$	896,498	$	105,880	105,880	-	69,340	-	69,340
2022	$	903,399	$	105,613	105,613	-	64,042	-	64,042
2023	$	910,892	$	105,257	105,257	-	59,098	-	59,098
2024	$	918,964	$	104,812	104,812	-	54,489	-	54,489
2025	$	927,661	$	104,317	104,317	-	50,215	-	50,215
2026	$	936,977	$	103,819	103,819	-	46,273	-	46,273
2027	$	946,869	$	103,313	103,313	-	42,636	-	42,636
2028	$	957,300	$	102,996	102,996	-	39,357	-	39,357
2029	$	968,056	$	102,706	102,706	-	36,339	-	36,339
2030	$	979,055	$	102,511	102,511	-	33,584	-	33,584
2031	$	990,119	$	102,351	102,351	-	31,047	-	31,047
2032	$	1,001,108	$	102,394	102,394	-	28,759	-	28,759
2033	$	1,011,697	$	102,649	102,649	-	26,696	-	26,696
2034	$	1,021,503	$	102,846	102,846	-	24,766	-	24,766
2035	$	1,030,315	$	103,185	103,185	-	23,007	-	23,007
2036	$	1,037,573	$	103,253	103,253	-	21,316	-	21,316
2037	$	1,042,421	$	103,291	103,291	-	19,745	-	19,745
2038	$	1,027,642	$	103,197	103,197	-	18,266	-	18,266
2039	$	1,009,718	$	102,921	102,921	-	16,867	-	16,867
2040	$	990,196	$	102,787	102,787	-	15,598	-	15,598
2041	$	968,952	$	102,500	102,500	-	14,402	-	14,402
2042	$	946,014	$	102,474	102,474	-	13,332	-	13,332
2043	$	920,984	$	102,151	102,151	-	12,305	-	12,305
2044	$	894,020	$	101,562	101,562	-	11,328	-	11,328
2045	$	865,264	$	100,743	100,743	-	10,404	-	10,404
2046	$	834,854	$	99,765	99,765	-	9,540	-	9,540
2047	$	802,848	$	98,337	98,337	-	8,707	-	8,707
2048	$	769,621	$	96,501	96,501	-	7,912	-	7,912
2049	$	735,549	$	94,562	94,562	-	7,178	-	7,178
2050	$	700,709	$	92,350	92,350	-	6,491	-	6,491
2051	$	665,362	$	89,802	89,802	-	5,844	-	5,844
2052	$	629,850	$	86,858	86,858	-	5,234	-	5,234
2053	$	594,606	$	83,638	83,638	-	4,667	-	4,667
2054	$	559,953	$	80,347	80,347	-	4,151	-	4,151
2055	$	526,024	$	77,000	77,000	-	3,683	-	3,683
2056	$	492,955	$	73,616	73,616	-	3,261	-	3,261
2057	$	460,810	$	70,214	70,214	-	2,880	-	2,880
2058	$	429,699	$	66,811	66,811	-	2,537	-	2,537

Appendix A, Table 2 – Actuarial Present Values of Projected Benefit Payments (000's omitted)

Fiscal Year Ending 12/31	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments: Funded Portion	Benefit Payments: Unfunded Portion	Present Value of Benefit Payments: Funded Portion at 8.00%	Present Value of Benefit Payments: Unfunded Portion at 3.20%	Present Value of Benefit Payments: Using a Single Discount Rate of 8.00%
2059	$ 399,747	$ 63,407	63,407	-	2,229	-	2,229
2060	$ 371,099	$ 60,008	60,008	-	1,954	-	1,954
2061	$ 343,833	$ 56,629	56,629	-	1,707	-	1,707
2062	$ 318,052	$ 53,269	53,269	-	1,487	-	1,487
2063	$ 293,991	$ 49,931	49,931	-	1,290	-	1,290
2064	$ 271,518	$ 46,630	46,630	-	1,116	-	1,116
2065	$ 250,132	$ 43,384	43,384	-	961	-	961
2066	$ 229,966	$ 40,205	40,205	-	825	-	825
2067	$ 209,116	$ 37,101	37,101	-	705	-	705
2068	$ 187,260	$ 34,084	34,084	-	600	-	600
2069	$ 166,794	$ 31,164	31,164	-	508	-	508
2070	$ 147,727	$ 28,349	28,349	-	428	-	428
2071	$ 130,062	$ 25,647	25,647	-	358	-	358
2072	$ 113,794	$ 23,069	23,069	-	298	-	298
2073	$ 98,907	$ 20,622	20,622	-	247	-	247
2074	$ 85,373	$ 18,312	18,312	-	203	-	203
2075	$ 73,158	$ 16,144	16,144	-	166	-	166
2076	$ 62,221	$ 14,124	14,124	-	134	-	134
2077	$ 52,510	$ 12,254	12,254	-	108	-	108
2078	$ 43,967	$ 10,537	10,537	-	86	-	86
2079	$ 36,526	$ 8,976	8,976	-	68	-	68
2080	$ 30,113	$ 7,571	7,571	-	53	-	53
2081	$ 24,648	$ 6,321	6,321	-	41	-	41
2082	$ 20,046	$ 5,221	5,221	-	31	-	31
2083	$ 16,219	$ 4,265	4,265	-	24	-	24
2084	$ 13,081	$ 3,443	3,443	-	18	-	18
2085	$ 10,547	$ 2,746	2,746	-	13	-	13
2086	$ 8,535	$ 2,164	2,164	-	10	-	10
2087	$ 6,966	$ 1,684	1,684	-	7	-	7
2088	$ 5,772	$ 1,294	1,294	-	5	-	5
2089	$ 4,888	$ 981	981	-	3	-	3
2090	$ 4,259	$ 734	734	-	2	-	2
2091	$ 3,837	$ 541	541	-	2	-	2
2092	$ 3,581	$ 394	394	-	1	-	1
2093	$ 3,458	$ 282	282	-	1	-	1
2094	$ 3,442	$ 199	199	-	-	-	-
2095	$ 3,511	$ 138	138	-	-	-	-
2096	$ 3,648	$ 94	94	-	-	-	-
2097	$ 3,842	$ 63	63	-	-	-	-
2098	$ 4,083	$ 42	42	-	-	-	-
2099	$ 4,366	$ 27	27	-	-	-	-
2100	$ 4,687	$ 17	17	-	-	-	-
2101	$ 5,044	$ 11	11	-	-	-	-

Appendix A, Table 2 – Actuarial Present Values of Projected Benefit Payments (000's omitted)

Fiscal Year Ending 12/31	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments: Funded Portion	Benefit Payments: Unfunded Portion	Present Value of Benefit Payments: Funded Portion at 8.00%	Present Value of Benefit Payments: Unfunded Portion at 3.20%	Present Value of Benefit Payments: Using a Single Discount Rate of 8.00%
2102	$ 5,437	$ 7	7	-	-	-	-
2103	$ 5,865	$ 4	4	-	-	-	-
2104	$ 6,329	$ 2	2	-	-	-	-
2105	$ 6,833	$ 1	1	-	-	-	-
2106	$ 7,378	$ 1	1	-	-	-	-
2107	$ 7,968	$ 0	0	-	-	-	-
2108	$ 8,605	$ 0	0	-	-	-	-
2109	$ 9,293	$ 0	0	-	-	-	-
2110	$ 10,036	$ 0	0	-	-	-	-
2111	$ 10,839	$ 0	0	-	-	-	-
2112	$ 11,706	$ 0	0	-	-	-	-
2113	$ 12,643	$ 0	0	-	-	-	-

Appendix B – Schedule of Changes in System's Net Pension Liability and Related Ratios

	2014	2015
Total pension liability		
Service cost	$ 18,728,870	$ 19,136,245
Interest	93,305,719	93,242,628
Changes of benefit terms	0	0
Differences between expected and actual experience	0	(10,065,347)
Changes of assumptions	0	0
Benefit payments	(113,082,656)	(113,384,329)
Net change in total pension liability	(1,048,067)	(11,070,803)
Total pension liability-beginning	1,203,046,205	1,201,998,138
Total pension liability-ending (a)	1,201,998,138	1,190,927,335
Plan fiduciary net pension		
Contributions-employer	$ 41,757,458	$ 40,708,503
Contributions-employee	11,887,933	11,664,711
Net investment income	35,000,792	(5,342,651)
Benefit payments, including refunds of employee contributions	(113,082,656)	(113,384,329)
Administrative expense	(1,350,393)	(1,466,261)
Other	0	(431,423)
Net change in plan fiduciary net position	(25,786,866)	(68,251,450)
Plan fiduciary net position-beginning	962,717,365	936,930,499
Plan fiduciary net position-ending (b)	936,930,499	868,679,049
System's net pension liability-ending (a)-(b)	265,067,639	322,248,286
Plan fiduciary net position as a percentage of the total pension liability	77.95%	72.94%
Covered-employee payroll	$ 219,799,781	$ 225,343,383
Net pension liability as a percentage of covered-employee payroll	120.60%	143.00%

Notes to Schedule:

A. Benefit changes

None.

B. Changes of assumptions

There were no changes in assumptions.

Appendix C – Pension Expense and Deferred Inflows & Outflows of Resources and Related to Pensions

Table 1: Pension Expense

Under GASB 68, employers participating in the Plan would recognize a total pension expense of $50,953,378 for the fiscal year beginning after June 15, 2015 which has been determined as of December 31, 2015. The corresponding results for the previous fiscal year determined as of December 31, 2014 are shown for comparison purposes.

Pension Expense	2014	2015
Service cost	$ 18,728,870	$ 19,136,245
Interest cost	93,305,719	93,242,628
Projected earnings on plan investments	(73,047,471)	(72,560,944)
Employee contributions	(11,887,933)	(11,664,711)
Administrative expense	1,350,393	1,466,261
Current period		
Changes of benefit terms	0	0
Changes in assumptions	0	0
Differences between expected and actual experience	0	(2,287,579)
Differences between projected and actual investment earnings	7,609,336	15,580,719
Recognition of prior years'		
Deferred inflows	0	0
Deferred outflows	0	7,609,336
Other changes in fiduciary net position	0	431,423
Total pension expense	$ 36,058,914	$ 50,953,378

The 2015, the difference between expected and actual experience is recognized over the average expected remaining service lives of active and inactive members as of January 1, 2015 (4.4 years).

The difference between projected and actual investment earnings is recognized over 5.0 years.

Details of the deferred inflows and outflows of resources are shown in Table 2 and Table 3.

The Employer allocation percentages are shown in Table 4.

Appendix C – Pension Expense and Deferred Inflows & Outflows of Resources and Related to Pensions

Table 2: Amortization of Differences between Expected and Actual Liability Experience

Measurement Year	2014	2015	2016	2017	2018
Amount Established	$ -	$ (10,065,347)			
Recognition Period		4.4			
Annual Recognition		$ (2,287,579)			

Measurement Year	Amount Recognized 2014	2015	2016	2017	2018	Outflows	Inflows	Total
2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2015	-	(2,287,579)	-	-	-	-	(2,287,579)	(2,287,579)
2016	-	(2,287,579)	-	-	-	-	(2,287,579)	(2,287,579)
2017	-	(2,287,579)	-	-	-	-	(2,287,579)	(2,287,579)
2018	-	(2,287,579)	-	-	-	-	(2,287,579)	(2,287,579)
2019	-	(915,031)	-	-	-	-	(915,031)	(915,031)
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-

Measurement Year	Deferred Balance 2014	2015	2016	2017	2018	Outflows	Inflows	Total
2014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2015	-	(7,777,768)	-	-	-	-	(7,777,768)	(7,777,768)
2016	-	(5,490,189)	-	-	-	-	(5,490,189)	(5,490,189)
2017	-	(3,202,610)	-	-	-	-	(3,202,610)	(3,202,610)
2018	-	(915,031)	-	-	-	-	(915,031)	(915,031)
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-

Appendix C – Pension Expense and Deferred Inflows & Outflows of Resources and Related to Pensions

Table 3: Amortization of Differences between Projected and Actual Earnings

Measurement Year	2014	2015	2016	2017	2018
Amount Established	$ 38,046,679	$77,903,595			
Recognition Period	5.0	5.0			
Annual Recognition	$ 7,609,336	$15,580,719			

Measurement Year	Amount Recognized 2014	2015	2016	2017	2018	Outflows	Inflows	Total
2014	$ 7,609,336	$ -	$ -	$ -	$ -	$ 7,609,336	$ -	$ 7,609,336
2015	7,609,336	15,580,719	-	-	-	23,190,055	-	23,190,055
2016	7,609,336	15,580,719	-	-	-	23,190,055	-	23,190,055
2017	7,609,336	15,580,719	-	-	-	23,190,055	-	23,190,055
2018	7,609,335	15,580,719	-	-	-	23,190,054	-	23,190,054
2019	-	15,580,719	-	-	-	15,580,719	-	15,580,719
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-

Measurement Year	Deferred Balance 2014	2015	2016	2017	2018	Outflows	Inflows	Total
2014	$ 30,437,343	$ -	$ -	$ -	$ -	$30,437,343	$ -	$ 30,437,343
2015	22,828,007	62,322,876	-	-	-	85,150,883	-	85,150,883
2016	15,218,671	46,742,157	-	-	-	61,960,828	-	61,960,828
2017	7,609,335	31,161,438	-	-	-	38,770,773	-	38,770,773
2018	-	15,580,719	-	-	-	15,580,719	-	15,580,719
2019	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-

Appendix C – Pension Expense and Deferred Inflows & Outflows of Resources and Related to Pensions

Table 4: Employer Allocation Percentages

Pension expense determined under GASB 68 is allocated to employers as a pro rata share of payroll, as follows:

EMPLOYER	Total Employer Payroll	Ratio of Employer Payroll over Total Payroll
Retirement System	$ 454,115	0.20%
Board of Education	$ 175,851,589	78.04%
Charter Schools		
Confluence Academy	$ 14,515,603	6.44%
City Garden Montessori School	$ 1,404,645	0.62%
Gateway Science Academy of St. Louis	$ 4,536,132	2.01%
JAMAA Learning Center	$ 654,925	0.29%
KIPP Inspire Academy	$ 4,705,326	2.09%
Lift for Life Academy	$ 3,387,447	1.50%
North Side Community School	$ 1,662,931	0.74%
Preclarus Mastery Academy	$ 772,640	0.34%
South City Preparatory Academy	$ 1,086,735	0.48%
St. Louis Language Immersion School	$ 3,032,220	1.35%
Premier Charter School (formerly St. Louis Charter School)	$ 5,056,784	2.24%
Better Learning Communities Academy	$ 413,648	0.18%
EAGLE College Preparatory School	$ 1,170,493	0.52%
Grand Center Arts Academy	$ 2,910,949	1.29%
Lafayette Preparatory Academy	$ 722,601	0.32%
Carondelet Leadership Academy	$ 2,115,158	0.94%
Hawthorne Leadership School for Girls	$ 497,410	0.22%
The Biome	$ 64,426	0.03%
La Salle Middle School	$ 327,603	0.15%
Total Charter Schools	$ 49,037,679	21.76%
TOTAL	$ 225,343,383*	100.00%*

* Totals may differ from summation of the individual components due to rounding

Appendix D – Assumptions and Methods

In this appendix, "2015 valuation report" refers to the actuarial valuation report issued in June 2015.

Interest

8.0% per annum.

Participant account interest crediting rate

5.0% per annum.

Expenses

The rate of interest assumed is net of expenses.

Mortality

Mortality tables mandated by the Pension Protection Act as specified in IRS Regulation 1.430(h)(3)-1, applied on a static basis, projected 7 years from the valuation date for annuitants and 15 years for non-annuitants.

Disability Mortality

The RP-2000 Disability Mortality Table is used for disabled participants.

Withdrawal

Withdrawals are assumed to occur at rates based on actual experience of the retirement system. During the first five years of membership, withdrawals are assumed to occur at the following rates:

Year of Membership	Non-charter school employees	Charter school employees
1st	25.0%	30.0%
2nd	20.0%	25.0%
3rd	15.0%	20.0%
4th	12.5%	15.0%
5th	10.0%	10.0%

The rates used after the first five years of membership are shown in Table 3 of the 2015 valuation report.

Salary scale

Salaries are assumed to increase at the rate of 4.50% per year.

Disability

Disabilities are assumed to occur at rates based on the actual experience of the retirement system. The rates are shown in Table 5 of the 2015 valuation report.

Appendix D – Assumptions and Methods (continued)

Retirement

Retirements occur at rates based on the actual experience of the retirement system. The age-related rates used are shown in Table 4 of the 2015 valuation report. Unless the age-related rate is greater, for those eligible to retire under the Rule of 85, it is assumed that 25% will retire when first eligible for unreduced benefits with at least 30 years of credited service.

Family Structure

The probability of a participant being married and the probable number of children are based on a table constructed by the Social Security Administration, modified to reflect the experience of the retirement system. The rates used are shown in Table 6 of the 2015 valuation report. For married participants, husbands are assumed to be 3 years older than their wives.

Usage of Cash-out Option

Participants terminating in vested status are given the option of taking a refund of their accumulated participant contributions instead of a deferred retirement benefit. Active members who terminate in the future with a vested benefit are assumed to take a deferred vested annuity, unless a refund of contributions and interest is greater than the actuarial present value of their vested deferred benefit.

Future Benefit Increases or Additional Benefits

When funding is adequate, the Board may authorize cost of living adjustments (COLAs), as noted in the summary of plan provisions. In the past, the Board has also sometimes granted an additional monthly payment to retirees (13th check.) This valuation assumes that no future COLAs and no future 13th checks will be awarded.

Actuarial Method – Frozen Entry Age (Funding Purposes)

The actuarial cost method used by the System is the "frozen entry age actuarial cost method." Under this method, on the initial actuarial valuation date for which the cost method is used, the annual cost accruals (individual normal costs for each participant) are determined as a level percentage of pay for each year from entry age until retirement or termination. The UFAAL was originally determined as of January 1, 1981. Entry age is determined at the date each participant would have entered the System. The sum of these individual normal costs for all active participants whose attained ages are under the assumed retirement age is the normal cost for the initial plan year. The excess of all normal costs falling due prior to the initial actuarial valuation date, accumulated with interest, over the plan assets establishes the initial Unfunded Frozen Actuarial Accrued Liability (UFAAL).

The UFAAL is only frozen in that it is not adjusted due to experience gains and losses. Instead, gains and losses are reflected through changes in the normal cost accrual rate. The UFAAL does change, increasing due to interest and additional normal costs, and decreasing due to contributions. Any changes to plan provisions or actuarial assumptions results in a change to the UFAAL. The amount of the change is determined by computing the impact in the actuarial accrued liability as of the valuation date coincident with or next following the change.

Appendix D – Assumptions and Methods (continued)

Normal costs are calculated as the level percentage of pay required to fund the excess of the actuarial present value of future benefits over the sum of the actuarial value of current assets and the remaining UFAAL.

Effective January 1, 2006, UFAAL was reestablished to better reflect an appropriate relationship between the normal cost and the actuarial accrued liability.

The funding requirement for each plan year is the sum of the "normal cost contribution" (equal to the normal cost for that year), plus the "actuarial accrued liability contribution." The "actuarial accrued liability contribution" is the payment required to amortize the UFAAL over 30 years, from January 1, 2006, the date that it was reestablished.

Valuation of Assets (Funding Purposes)

The actuarial value of assets is determined using the assumed yield method of valuing assets. Under the assumed yield asset valuation method, the prior year's actuarial value is increased at the assumed rate of return with appropriate adjustments for contributions and disbursements to produce an expected actuarial value of assets at the end of the year. The expected actuarial value is compared to the market value of assets less the expense and contingency reserve, and 20% of the difference is added to the expected actuarial value. The actuarial value of assets was "fresh-started" as of January 1, 2006 and set equal to the market value of assets as of that date.

Appendix D – Summary of Plan Provisions

Participants

All persons regularly employed by the board of education, charter schools, and employees of the board of trustees are in the System.

Retirement age

Normal

Age 65 or any age if age plus the years of credited service equals or exceeds 85 (Rule of 85)

Early

Age 60 with 5 years of service

Service retirement allowance

a. 2% (1-1/4% if terminated prior to July 1, 1999) times years of credited service, subject to a maximum of 60%
b. Times average final compensation (AFC)
c. Subject to a maximum of 60% of AFC.
    i. AFC is the highest average compensation for any three consecutive years of the last 10 years of service.
    ii. Compensation is the regular wages plus what your employer pays towards your health and welfare benefits.
    iii. Minimum monthly benefit is $10.00 for each year of credited service, up to 15 years, retirement age 65 and over.
    iv. Unused sick leave is added to a participant's credited service and age.

Early retirement benefit

Service retirement allowance reduced five-ninths of one percent for each month of commencement prior to age 65 or the age at which the Rule of 85 would have been satisfied had the employee continued working until that age, if earlier.

Disability benefit

Service retirement allowance using actual service, or 25% of AFC if larger, provided that in no case will the benefit exceed that payable if service had continued to age 65.

a. Disability must be incurred while an employee as determined by the medical board and approved by the board of trustees.
b. The participant must have a minimum of five years of credited service and not be eligible for normal retirement.

Continued disability is subject to routine verification.

Withdrawal benefit

Accumulated contributions of participant with interest credited to the participant's account.

Appendix D – Summary of Plan Provisions (continued)

Vested benefit

Full vesting on termination of employment after at least five years of service is provided if contributions are left with the System. The full accrued benefit is payable at age 65 or a reduced early retirement benefit prior to age 65.

Retirement options

In lieu of the benefit paid only over the lifetime of the participant, a reduced benefit payable for life of participant with:

Option 1 Same retirement allowance continued after death to the beneficiary.

Option 2 One-half of the retirement allowance continued after death to the beneficiary.

Option 3 Same retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.

Option 4 One-half of retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.

Option 5 Increased retirement allowance is provided up to age 62, such that benefit provided prior to age 62 is approximately equal to the sum of the reduced retirement allowance paid after age 62 and Social Security.

Option 6 Options 1 and 5 combined.

Option 7 Options 2 and 5 combined.

Survivor benefits

If an active participant dies after completing 18 months of service, leaving a surviving spouse or other dependent beneficiaries, survivor benefits are payable. The widow or dependent beneficiary may elect to receive either a refund of accumulated contributions, or:

a. A survivor who is the widow at least age 62 and married to a participant for at least one year receives $60 a month.

b. A widow with dependent, unmarried children under age 22 receives $60 a month plus $60 per dependent child, not to exceed $180 per month. The benefit ceases when youngest child is age 22 and resumes again under (a) at age 62.

c. If no benefits are payable under (a) or (b), minor children may receive a benefit of $60 per child or $180 divided among them if more than three children.

d. If no benefits are payable under (a), (b) or (c), a dependent parent or parents may receive or share $60 per month upon attaining age 62.

If an active participant dies after completing 5 years of service, the widow or dependent beneficiary may elect to receive either a refund of accumulated contributions or:

a. If the survivor is the widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1, plus $60 per dependent child not to exceed $180 per month.

b. If there is no widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1.

Appendix D – Summary of Plan Provisions (continued)

Return of contributions upon death

If after the death of a participant, no further monthly are payable to a beneficiary under an optional form of payment, or under the survivor benefit provisions, the participant's beneficiary shall be paid the excess, if any, of the participant's accumulated contributions over all payments made to or on behalf of the deceased participant.

DROP

Effective July 1, 2001, active participants may elect to enter the deferred retirement option plan (DROP) for up to four years. Upon entering the DROP, the participant's retirement benefit is frozen and credited to the participant's DROP account. At the end of the DROP, or upon earlier termination of employment, the DROP account is paid in a lump sum or installments, at the participant's option. During the DROP, the participant continues as an active participant, but does not pay contributions. To enter the DROP the participant must be age 65 or meet the Rule of 85. The DROP program is no longer available, ending June 30, 2008.

Contributions by participants

Participants contribute 5% of compensation. Accumulated contributions are credited at the rate of interest established by the board of trustees. The current crediting rate is 5%.

Contributions by employers

As needed to keep the System actuarially sound.

Expenses

Administrative expenses paid out of investment income.

Note: There have been no changes to the System's plan provisions since 2002.

Public School Retirement System of the City of St. Louis
Travel Activity and Expenses - Calendar Year 2016

NAME	SPONSOR	DATES FROM	DATES TO	LOCATION	ADVANCES TO	REIMBURSEMENTS TO	REIMBURSEMENTS FROM	TOTAL COST	EXP RPT	VOUCHER STATUS*	NOTES
Bentley, Paula	NASP	06/12/2016	06/15/2016	Atlanta, GA	$1,770.00			$1,770.00			
Goodwin, Sheila	NEPC	05/09/2016	05/11/2016	Boston, MA		$2,111.55		$2,111.55	Y	Pending	
Levy, Yvette	NASP	06/13/2016	06/15/2016	Atlanta, GA	$2,000.00			$2,000.00			
	NEPC	05/09/2016	05/11/2016	Boston, MA	$1,475.00	$6.33		$1,481.33	Y	Pending	
Moten, John	NEPC	05/09/2016	05/11/2016	Boston, MA							
Shelton, Charles	NEPC	05/09/2016	05/11/2016	Boston, MA	$1,921.00	$441.40		$2,362.40	Y	Pending	
	NASP	06/13/2016	06/15/2016	Atlanta, GA	$1,422.97			$1,422.97			
							Total Cost	$11,148.25			

NASP - National Association of Securities Professionals
NEPC - New England Pension Consultants

As of 06/09/2016