PUBLIC SCHOOL RETIREMENT SYSTEM
OF THE CITY OF ST. LOUIS

MINUTES OF THE BOARD OF TRUSTEES REGULAR MEETING

June 22, 2015

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 4:35 p.m., Monday, June 22, 2015. 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, Joseph Clark, Tracie Goffe, Mary Houlihan, Charles Shelton and Janusz Wolynski were in attendance. A quorum of Trustees was present. Trustee Sheila Goodwin joined the meeting in progress. Trustees Angela Banks, Yvette Levy, Rick Sullivan and Eural Thomas were absent.

Executive Director, Andrew Clark, Accounting Specialist, Terry Mayes, PSRSSTL Attorney Representative, Jamie Jones, PSRSSTL Actuary, Steve Siepman, and several interested parties were also present.

II. APPROVAL OF MINUTES FROM LAST MEETING

Charles Shelton made a motion, seconded by Mary Houlihan, to approve the minutes of the Board of Trustees Regular Meeting of April 20, 2015.

A roll call vote was taken.

Christina Bennett	Yes	Joseph Clark	Yes	Tracie Goffe	Yes
Mary Houlihan	Yes	Charles Shelton	Yes	Janusz Wolynski	Yes

With six yes votes, motion carried.

III. READING OF COMMUNICATIONS TO THE BOARD OF TRUSTEES

None

IV. PRESENTATIONS BY INTERESTED PARTIES

Retiree, Erma Nevels McNeil, expressed concerns over the lack of a COLA.

V. CONSENT AGENDA

Christina Bennett made a motion, seconded by Tracie Goffe, to approve the Retirements and Benefits of May and June 2015.

A roll call vote was taken.

Christina Bennett	Yes	Joseph Clark	Yes	Tracie Goffe	Yes
Mary Houlihan	Yes	Charles Shelton	Yes	Janusz Wolynski	Yes

With six yes votes, motion carried.

Christina Bennett made a motion, seconded by Tracie Goffe, to approve the Refunds and Bills of April and May 2015.

A roll call vote was taken.

Christina Bennett	Yes	Joseph Clark	Yes	Tracie Goffe	Yes
Mary Houlihan	Yes	Charles Shelton	Yes	Janusz Wolynski	Yes

With six yes votes, motion carried.

VI. UNFINISHED BUSINESS

None

VII. REPORT OF THE CHAIRPERSON

None

VIII. REPORT OF THE EXECUTIVE DIRECTOR

The Executive Director mentioned that a Trustee Travel report would be made at the next meeting.

IX. REPORT OF THE INVESTMENT CONSULTANT

None

X. REPORT OF THE ACTUARY

The Actuary presented the results of the 2015 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 discussion on the GASB statements until the Actuary addressed all questions to the satisfaction of the Trustees.

Christina Bennett made a motion, seconded by Charles Shelton, to adopt the 2015 Actuarial Valuation Report as presented by the Actuary.

A roll call vote was taken.

Christina Bennett	Yes	Joseph Clark	Yes	Tracie Goffe	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Charles Shelton	Yes
Janusz Wolynski	Yes				

With seven 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 Committee, mentioned the upcoming 2016 health insurance renewals.

Trustee Business Committee

None

Investment Committee

Joe Clark, Chair of the Committee, reported on the meeting of June 18, 2015, by asking for a motion to approve a recommendation being brought forward by the Committee.

Charles Shelton made a motion, seconded by Sheila Goodwin to hire Monroe Capital LLC as a private debt money manager and commit $10 million to Monroe Capital Private Credit Fund II as recommended by the Investment Committee.

A roll call vote was taken.

Christina Bennett	Yes	Joseph Clark	Yes	Tracie Goffe	Yes
Sheila Goodwin	Yes	Mary Houlihan	Yes	Charles Shelton	Yes
Janusz Wolynski	Yes				

With seven yes votes, motion carried.

Legislative, Rules & Regulations Committee

None

Professional Contracts Committee

None

XII. NEW BUSINESS

None

XIII. REPORT OF THE ATTORNEY

None

XIV. ADJOURNMENT

Sheila Goodwin made a motion, seconded by Mary Houlihan, to adjourn the meeting.

By voice vote, motion carried and the meeting adjourned at 5:15 p.m.

Attachments:
- Retirements Paid: May and June 2015
- Refunds & Bills Paid: April and May 2015
- 2015 Actuarial Valuation Report and Results

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
Albert Bell Teacher	April 1, 2015	Normal	27.8666	$65,974.62	$3,064.15
William Brotemarkle Teacher	April 1, 2015	Early	13.3888	$48,102.45	$1,037.61
Shelia Dunn-Moss Parent Educator	April 1, 2015	Early	14.7611	$36,154.13	$602.83
Patricia Pendleton Teacher	April 1, 2015	Normal	28.6111	$85,163.38	$4,061.03
Linda Prewitt Teacher	April 1, 2015	Disability	10.0222	$58,895.39	$1,170.61

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
Orlo MacMurray Teacher	May 1, 2015	Disability	13.3056	$59,423.23	$1,317.77
Marco Romero Teacher	May 1, 2015	Normal	16.4597	$34,448.25	$463.05
Anthony Smith Custodian	May 1, 2015	Disability	9.3976	$33,454.93	$696.98

Distributions - April 2015

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
069693	09/12/14	BROWN	JARROLD C	(22,000.00)		(22,000.00)	A	S	VOID AND REISSUE
070131	01/21/15	GERKE	BRITTANY J	(1,154.76)	0.00	(1,154.76)	A	S	VOID AND REISSUE
070307	04/02/15	DAILEY	ERIC	1,781.27	356.25	1,425.02	A	S	KIPP
070308	04/02/15	PHILLIPS-GRIPPO	ASHLEY	769.97		769.97	A	S	ICP
070309	04/02/15	RIGGLE	KIRSTOFFER	4,971.33	994.27	3,977.06	A	S	IACA
070310	04/02/15	MORRISON	ALESHA	4,174.96	834.99	3,339.97	A	S	CA
070311	04/02/15	BOWIE	RACHEL	2,511.96	502.39	2,009.57	A	S	
070312	04/02/15	FRIERSON	ANDREA	4,801.59	960.32	3,841.27	A	S	
070313	04/02/15	HENDRICK	MARGARET A	12,361.05		12,361.05	A	S	
070314	04/02/15	HUNTER	KATIE	14,962.50		14,962.50	A	S	
070315	04/02/15	JONES	JUDY E	26,499.14		26,499.14	A	S	
070316	04/02/15	LARIMER	KATHYRN	3,005.85	601.17	2,404.68	A	S	
070317	04/02/15	MILLA	GLORIA L	1,614.84	322.97	1,291.87	A	S	
070318	04/02/15	MOREAU	SARAH E	2,951.52	590.30	2,361.22	A	S	
070319	04/02/15	ROSS	KAREN	17,086.77	3,417.35	13,669.42	A	S	
070320	04/02/15	RIKLI	JOY E	25,650.28	5,130.06	20,520.22	A	S	
070321	04/02/15	RODGERS	MARVA	5,006.77	1,001.35	4,005.42	A	S	
070322	04/02/15	SITTMAN	CLAUDIA	1,179.55	235.91	943.64	A	S	
070323	04/02/15	WILLIAMS	FLORECE	11,877.36	2,375.47	9,501.89	A	S	
070324	04/02/15	WILLIAMS	MONDA V	3,362.26	672.45	2,689.81	A	S	
070325	04/02/15	BROWN	JARROLD C	22,000.00		22,000.00	A	S	VOID AND REISSUE
070345	04/17/15	ARMSTRONG	TONIA	6,074.01	1,214.80	4,859.21	A	S	CA
070346	04/17/15	DESMET	ALLISON	6,805.05	1,361.10	5,443.95	A	S	CA
070347	04/17/15	TAYLOR	REDRICK	6,429.37	1,285.87	5,143.50	A	S	EAGLE 250.32, SCPA 6179.05
070348	04/17/15	O HERON	MICHAEL	1,146.79	229.36	917.43	A	S	
070349	04/17/15	JENSEN	ANGELA	5,726.45	1,145.29	4,581.16	A	S	
070350	04/17/15	MOORE	ALISHA	1,792.07	358.41	1,433.66	A	S	
070351	04/17/15	SAVAGE	WILLIAM	7,497.55	1,499.51	5,998.04	A	S	
070352	04/17/15	SMITH	JERMAIN	3,724.49	744.90	2,979.59	A	S	
070353	04/17/15	THOMPSON	KELLI	24,287.92	4,857.58	19,430.34	A	S	
070354	04/17/15	WOODLAND	DANIELLE	9,875.79	1,975.16	7,900.63	A	S	
070355	04/17/15	GERKE	BRITTANY J	1,154.76		1,154.76	A	S	VOID AND REISSUE
			TOTAL	**$ 217,928.46**	**$ 32,667.23**	**$ 185,261.23**			

Distributions - May 2015

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
070371	05/01/15	ABRAHAMS	AMANDA	7,142.17		7,142.17	A	S	STL
070372	05/01/15	JACOBS	EMALIE	3,495.61		3,495.61	A	S	CA
070373	05/01/15	BLUE	LAGENA	1,834.38	366.88	1,467.50	A	S	
070374	05/01/15	BRIGGS	RUSSELL L	25,418.70	5,083.74	20,334.96	A	S	
070375	05/01/15	FRENCHIE-WESTBROOK	KIJUANA	63,096.13	11,810.48	51,285.65	A	S	
070376	05/01/15	GODEFROID	JENNIFER	3,374.05	674.81	2,699.24	A	S	
070377	05/01/15	MOSLEY	MARY L	3,000.00		3,000.00	A	S	
070378	05/01/15	MOSLEY	MARY L	862.38	172.48	689.90	A	S	
070379	05/01/15	WHITE	MARY	27,596.90	5,519.38	22,077.52	A	S	
070380	05/01/15	WILLIS	NOAH	1,725.30	345.06	1,380.24	A	S	
070415	05/14/15	BORUM	TERRELL	559.59	111.92	447.67	A	S	JAMAA
070416	05/14/15	COLEMAN	CAROLYN	1,503.67		1,503.67	A	S	SLIIS
070417	05/14/15	HICKS	MIRANDA	3,557.68	711.54	2,846.14	A	S	LFL
070418	05/14/15	KAMP	VALERIE	402.35		402.35	A	S	EAGLE
070419	05/14/15	HICKS	MARQUITA	3,668.44	733.69	2,934.75	A	S	
070420	05/14/15	HILL	MEAGHAN	1,444.44	288.89	1,155.55	A	S	
070421	05/14/15	LUELLEN	DONNA	1,050.15	210.03	840.12	A	S	
070422	05/14/15	MILLER	JOHNNY D	86,880.75	17,049.09	69,831.66	A	S	
070423	05/14/15	MUNOZ	RACHEL E	3,068.93	613.79	2,455.14	A	S	
070424	05/14/15	OBANNON	AUDREA	17,000.00		17,000.00	A	S	
070425	05/14/15	OBANNON	AUDREA	10,588.57	2,117.71	8,470.86	A	S	
070426	05/14/15	REID-BANNISTER	MOLLIE	2,354.83	470.97	1,883.86	A	S	
070427	05/14/15	SMITH	SHARON	2,884.90	576.98	2,307.92	A	S	
070428	05/14/15	WILLIAMS	DEVON	7,927.17	1,585.43	6,341.74	A	S	
070429	05/14/15	WINSLOW	ERIKA L	23,989.54	4,797.91	19,191.63	A	S	
070458	05/21/15	BUFORD-MORGAN	LAVONDER	1,737.12	347.42	1,389.70	A	S	LFL
070459	05/21/15	DUNN	JUNNIA	11,116.44		11,116.44	A	S	SLCS
070460	05/21/15	GOFF	NICOLE A	1,192.14	238.43	953.71	A	S	CA
070461	05/21/15	MCAFEE	SHELDON	25,796.54	5,159.31	20,637.23	A	S	CA
070462	05/21/15	ROBERTS	MELISSA	1,953.11		1,953.11	A	S	CA
070463	05/21/15	ROWE	ERIC A	2,499.55	499.91	1,999.64	A	S	SCPA
070464	05/21/15	BOTTOMS	SHALAH R	1,648.15		1,648.15	A	S	
070465	05/21/15	DUKES	JASMINE	3,516.07	703.21	2,812.86	A	S	
070466	05/21/15	HALL	SARAH B	6,503.74	1,300.75	5,202.99	A	S	
070467	05/21/15	ISHMON	JESSICA	17,106.68	3,421.34	13,685.34	A	S	

Distributions - May 2015

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
070468	05/21/15	JORDAN	JODI	12,057.09	2,411.42	9,645.67	A	S	
070469	05/21/15	KAHNTROFF	JEFFREY A	3,454.79		3,454.79	A	S	
070470	05/21/15	WILSON	LISA	3,883.88	776.78	3,107.10	A	S	
			TOTAL	**$ 396,891.93**	**$ 68,099.35**	**$ 328,792.58**			

Public School Retirement System of the City of St. Louis
Checks Written During the Month of April, 2015

Payee	Ck. Number	Description	Amount
Date Paid April 3, 2015			
Office Payroll	ACH	Office Payroll	10,800.91
AXA Equitable	ACH	457 Contributions	2,053.08
Date Paid April 8, 2015			
Ameren Missouri	70326	Electric Service	2,485.36
Digital Intersection	70327	Monthly Data Center Hosting	150.00
Purchase Power	70328	Postage	1,000.00
AT&T	70329	Acct #314 371-0114 632 9	338.13
AT&T	70330	U-Verse Internet	50.00
Windstream Communications	70331	Telephone, Data	490.92
BuildingStars STL Operations, Inc.	70332	Janitorial Service	1,326.00
Gallagher Benefit Services, Inc.	70333	Group Ins. Consulting Services Monthly Fee	3,320.25
Anders CPA's & Advisors	70334	Audit of Financial Statements	40,000.00
Hartnett Gladney Hetterman, L.L.C.	70335	Legal Fees	2,993.90
Office Essentials	70336	Office Supplies	680.24
Parking Management Services, LLC	70337	Parking Ticket Validations - March 2015	49.50
Gregory F.X. Daly, Collector of Revenue	70338	City Earnings Tax - First Quarter 2015	874.52
BarnesCare	70339	Linda M. Prewitt	100.00
LABORLAWCENTER, INC.	70340	Missouri Labor Law Posters	37.90
Andrew Clark	70341	Software - WinZip 19	14.97
Board of Education St. Louis Benefits Trust	70342	Office Employees Insurance - Dental	200.17
Board of Education St. Louis Benefits Trust	70343	Office Employees Insurance - Vision	12.36
Board of Education St. Louis Benefits Trust	70344	Office Employees Insurance - Life	79.75
Date Paid April 17, 2015			
Office Payroll	ACH	Office Payroll	10,800.91
AXA Equitable	ACH	457 Contributions	2,053.08
Date Paid April 20, 2015			
Absopure Water Company	70356	Water Cooler Service	96.80
Buck Consultants, LLC	70357	Actuarial Consulting Services - March & April	18,410.00
AT&T	70358	Monthly Service Charge #314 652-1704 033 4	76.99
Access	70359	Scanning Services	385.34
Parking Management Services, LLC	70360	May 2015 Parking - 2 Employees	130.00
Andrew Clark	70361	Miscellaneous Trustee Meeting Expenses	18.94
The Berwyn Group	70362	Death Check Verification Services	395.00
Republic Services #346	70363	Trash Pick-Up	134.01
CBRE - 608844	70364	Management Fee - April 2015	1,092.00
CBRE - 608844	70365	Engineer Services	247.50
St. Louis Mat & Linen Company	70366	Floor Mats	132.50
Jarrell Mechanical Contractors	70367	HVAC Equipment Inspection	784.00
EARNEST Partners, LLC	70368	1st Quarter 2015 Management Fee	11,026.33
Loomis, Sayles & Company, L.P.	70369	1st Quarter 2015 Management Fee	58,143.95
Sysematic Financial Management, LP	70370	1st Quarter 2015 Management Fee	65,844.26
		TOTAL	**$236,829.57**

Public School Retirement System of the City of St. Louis
Checks Written During the Month of May, 2015

Payee	Ck. Number	Description	Amount
Date Paid May 1, 2015			
Office Payroll	ACH	Office Payroll	10,687.66
AXA Equitable	ACH	457 Contributions	2,220.00
Date Paid May 5, 2015			
Ameren Missouri	70381	Electric Service	1,659.10
Digital Intersection	70382	Monthly Data Center Hosting	150.00
Purchase Power	70383	Postage	563.51
AT&T	70384	Acct #314 371-0114 632 9	157.99
AT&T	70385	U-Verse Internet	50.00
BuildingStars STL Operations, Inc.	70386	Janitorial Supplies	579.84
Anders CPA's & Advisors	70387	Audit of Financial Statements, CAFR, GASB	7,495.00
Office Essentials	70388	Office Supplies	581.75
Minuteman Press	70389	Booklet Envelopes	188.12
Charter Communications	70390	Charter Internet	135.00
Blade Technologies	70391	Professional Services	1,075.83
MSD	70392	Sewer Service	45.23
CGI Security, Inc.	70393	Security Guard 04/20/2015	144.00
CBRE-608844	70394	Engineer Services	536.25
BSR Services, Inc.	70395	Snow and Ice Management	260.00
Blue Chip Pest Services	70396	Pest Control	44.00
Tech Electronics, Inc.	70397	Techical Support	277.91
QS Batterymarch Financial Management, Inc.	70398	1st Quarter 2015 Management Fee	30,589.26
Causeway Capital Management LLC	70399	1st Quarter 2015 Management Fee	70,589.16
Chicago Equity Partners, LLC	70400	1st Quarter 2015 Management Fee	46,259.22
The Edgar Lomax Company	70401	1st Quarter 2015 Management Fee	48,017.29
Holland Capital Management LLC	70402	1st Quarter 2015 Management Fee	53,782.32
INTECH Investment Management LLC	70403	1st Quarter 2015 Management Fee	37,287.02
Mondrian Investment Partners Limited	70404	1st Quarter 2015 Management Fee	40,980.43
New Amsterdam Partners, LLC	70405	1st Quarter 2015 Management Fee	26,334.82
Westfield Capital Management Company, LP	70406	1st Quarter 2015 Management Fee	67,851.83
NCM Capital Advisers, Inc.	70407	1st Quarter 2015 Management Fee	5,754.89
Board of Education St. Louis Benefits Trust	70408	Office Employees Insurance - Dental	200.17
Board of Education St. Louis Benefits Trust	70409	Office Employees Insurance - Vision	12.36
Board of Education St. Louis Benefits Trust	70410	Office Employees Insurance - Life	79.75
US Bank	70411	1st Quarter 2015 Custodial Fees	38,383.63
Date Paid May 8, 2015			
Arthur J. Gallagher Risk Mgmt. Services, Inc.	70412	Fiduciary Liability & Crime Insurance Premiums	73,767.00
Windstream Communications	70413	Telephone, Data	497.16
BuildingStarsSTL Operations, Inc.	70414	Janitorial Service	1,326.00
Date Paid May 15, 2015			
Office Payroll	ACH	Office Payroll	10,687.66
AXA Equitable	ACH	457 Contributions	2,220.00
Date Paid May 20, 2015			
Absopure Water Company	70430	Water Cooler Service	96.80
Buck Consultants, LLC	70431	Actuarial Consulting Services - April & May	9,807.00
AT&T	70432	Monthly Service Charge #314 652-1704 033 4	152.04
Access	70433	Scanning Services	385.26
Parking Management Services, LLC	70434	June 2015 Parking - 2 Employees	130.00
Parking Management Services, LLC	70435	Parking Ticket Validations - April 2015	76.50
Hartnett Gladney Hetterman, L.L.C.	70436	Legal Fees	3,166.10
Charter Communications	70437	Charter Internet	293.52
Gallagher Benefit Services, Inc.	70438	Group Ins. Consulting Services Monthly Fee	3,320.25
Crossroads Courier, Inc.	70439	Courier Service	17.94
Office Essentials	70440	Office Supplies	350.93
Evault Inc.	70441	Disaster Recovery Site	1,934.20
Eazy Business Mailers, Inc.	70442	Postage - 2015 Spring Newsletter	2,158.83
Shred-It	70443	Document Shredding	185.00

Public School Retirement System of the City of St. Louis
Checks Written During the Month of May, 2015

Payee	Ck. Number	Description	Amount
UPS	70444	UPS Delivery	44.39
AT&T Teleconference Services	70445	Teleconference Services	18.39
CPM Solutions, Inc.	70446	General Ledger Closing and Rollover	67.50
John Henderson	70447	Reimbursement - Express Scripts Conference	464.01
Charles L. Shelton, Jr.	70448	Advance - NASP Annual Conference	2,161.83
Republic Services #346	70449	Trash Pick-Up	134.01
CBRE - 608844	70450	Management Fee - May 2015	1,092.00
CBRE - 608844	70451	Engineer Services	85.57
Tech Electronics, Inc.	70452	Central Monitoring of Fire Alarm System	87.00
Pyramis Global Advisors Trust Company	70453	1st Quarter 2015 Management Fee	68,895.78
Manulife Asset Management U.S. LLC	70454	1st Quarter 2015 Management Fee	35,720.91
TCW Asset Management Company	70455	1st Quarter 2015 Management Fee	55,265.19
Mellon Capital Management Corporation	70456	1st Quarter 2015 Management Fee	85,403.07
Mellon Capital Management Corporation	70457	1st Quarter 2015 Management Fee	986.67
Date Paid May 29, 2015			
Office Payroll	ACH	Office Payroll	10,687.66
AXA Equitable	ACH	457 Contributions	2,220.00
		TOTAL	**$866,879.51**

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, 2015 – December 31, 2015

June 2015

Stephen B. Siepman
Principal, Retirement

Buck Consultants, LLC
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St. Louis, MO 63105

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tel 314.719.2529
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June 2015

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, 2015 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, 2015.

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.

This actuarial valuation is based on the same actuarial assumptions and methods as those used in the prior actuarial valuation, except for those noted in Section 3.8 under Changes from the Prior Valuation. A summary of all assumptions and methods is presented in Section 3.8 of this report. All assumptions used in this valuation are as adopted by the Board. The assumptions fairly represent past and anticipated future experience of the System. The assumptions used are individually reasonable and reasonable in the aggregate. In selecting economic assumptions, the interest rate of 8% is based upon a review of the existing portfolio structure and a review of recent experience. The salary increase assumption is based upon actual experience and future expectations of inflation, merit, and productivity components.

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

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Senior Consultant, Retirement

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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, 2015; and
- Determine the required contribution rate for 2016.

This report is divided into three sections. Section 1 contains the results of the valuation. It includes the experience of the System during the 2014 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 2015, total actuarial gains due to plan experience were $7.0 million. Roughly $6.7 million of this amount is a loss attributable to the System's actuarial rate of return on assets which was 7.3%, or 0.7% lower than the assumed rate of return of 8.0%. By comparison, the rate of return on the market value of assets during 2014 was 3.8%. The difference in these returns is primarily due to less-than-assumed investment performance during 2014. At January 1, 2015, the actuarial value of assets of $926.9 million is above market value of assets (excluding the expense and contingency reserve) by approximately $19.8 million.

Roughly $13.7 million of the total actuarial gain is a gain attributable to demographic experience.

Assumption Changes

For the 2015 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 2015, the annual normal cost due December 31, 2015 is $20,569,969, as compared to $21,885,470 for 2014, a decrease primarily due to the aforementioned actuarial gain, partially offset by the impact due to the change of assumptions. The annual normal cost rate decreased from 8.65% to 8.05% due to the experience gains. Covered payroll increased slightly from $243.3 million to $245.7 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 2014 were $4.5 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 $16,711,760 to $16,640,783. The amortization payment component of the contribution rate decreased from 6.9% to 6.8% of covered payroll due to the increase in payroll resulting from the net increase in active population by more than 100.

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 2016. The dollar amount of the actual contribution decreased to $37,210,752 for 2016 from $38,597,230 for 2015. As a percentage of covered payroll, the contribution rate for 2016 decreased to 15.14% from 15.87% for 2015.

Summary and Comparison of Principal Valuation Results

Annual Required Contribution

	Board of Education		Retirement System		Charter Schools		Total	
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 (ARC)		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%
2014								
Normal cost contribution	$	17,618,983	$	47,607	$	4,218,880	$	21,885,470
Actuarial accrued liability contribution		13,453,867		36,353		3,221,540	$	16,711,760
Annual required contribution		31,072,850		83,960		7,440,420	$	38,597,230
Covered payroll		195,853,519		529,203		46,897,293	$	243,280,015
ARC as % of covered payroll		15.87%		15.87%		15.87%		15.87%

	January 1, 2015	January 1, 2014
System Assets		
Expense and contingency reserve	$ 29,868,370	$ 30,439,781
Market value, excluding expense & contingency reserve	907,062,130	932,277,584
Actuarial value	926,905,797	922,922,386
System liabilities		
Unfunded actuarial accrued liability	$ 166,687,451	$ 170,472,382
Projected benefit obligation	$1,166,064,968	$1,174,584,948
PBO Funding Ratio		
Actuarial value funding ratio	79.5%	78.6%
Market value funding ratio	77.8%	79.4%

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 2014 was 3.75%. The approximate actuarial value rate of return was 7.26%.

(2) Demographic Experience

The number of active members increased from 4,880 to 5,011 for the period. The average age of active members increased by 0.12 years, the average service decreased by 0.14 years, and the average annual salary decreased $820. 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 decreased 1.6% between January 1, 2014 and January 1, 2015. Total annual covered payroll increased 1.0% between January 1, 2014 and January 1, 2015.

(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 an increase in the funding ratio utilizing the actuarial value of assets from 78.6% to 79.5%. The total contribution rate decreased from 15.87% to 15.14% 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, 2015
Section 1.5	Projected benefit obligation funding ratios
Section 1.6	Projected benefit obligation 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, 2014	$ 170,472,382
2.	Normal cost due January 1, 2014	21,043,721
3.	Interest on (1) and (2) at 8.00% to December 31, 2014	15,321,288
4.	Employer contributions for 2014	41,757,458
5.	Interest on (4) at 8.00% to December 31, 2014	0
6.	Supplement for changes in actuarial assumptions or benefits	1,607,518
7.	Unfunded frozen actuarial accrued liability as of January 1, 2015, (1) + (2) + (3) – (4) – (5) + (6)	166,687,451
8.	Actuarial accrued liability contribution for 2015 End of year amortization payment of (7) over 21 years	16,640,783

Section 1 (continued)

1.2 Determination of Normal Cost Contribution

1.	Actuarial present value of future benefits		
	a. Active participants		
	i. Retirement benefits	$ 372,851,888	
	ii. Vested withdrawal benefits	43,536,709	
	iii. Refund of contributions	5,302,087	
	iv. Survivor benefits	5,384,998	
	v. Disability benefits	10,486,198	
	Total		$ 437,561,880
	b. Retired participants and beneficiaries		867,305,309
	c. Inactive participants		
	i. Vested participants	19,958,161	
	ii. Nonvested participants	5,363,155	
	Total		25,321,316
	d. Total actuarial present value of future benefits		$ 1,330,188,505
2.	Unfunded frozen actuarial accrued liability as of January 1, 2015		166,687,451
3.	Actuarial value of assets as of December 31, 2014		926,905,797
4.	Actuarial present value of future participant contributions		90,660,962
5.	Actuarial present value of future employer normal costs, (1)(d) – (2) – (3) – (4), not less than $0		145,934,295
6.	Actuarial present value of future covered payroll of current participants		1,813,219,235
7.	Employer normal cost rate, (5) / (6)		8.05%
8.	Total covered payroll		245,699,583
9.	Normal cost for 2015, (7) x (8)		19,778,816
10.	Normal cost contribution due by December 31, 2015, (9) x [1 + (0.08 x 0.5)]		20,569,969

Section 1 (continued)

1.3 Required Annual Contribution

	Board of Education	Retirement System	Charter Schools	Total
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 (ARC)	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%

Section 1 (continued)

1.4 Actuarial Balance Sheet as of January 1, 2015

Actuarial assets		
Actuarial value of present assets		$ 926,905,797
Actuarial present value of future participant contributions		90,660,962
Actuarial present value of future employer contributions for:		
Normal costs		145,934,295
Unfunded actuarial accrued liability		166,687,451
Total present and future assets		$ 1,330,188,505
Actuarial liabilities		
Actuarial present value of benefits now payable		$ 867,305,309
Actuarial present value of benefits payable in the future:		
Active participants	$ 437,561,880	
Terminated vested participants	19,958,161	
Terminated non-vested participants	5,363,155	
Total payable in the future		462,883,196
Total liabilities for benefits		$ 1,330,188,505
Surplus / (deficit)		0

Section 1 (continued)

1.5 Projected Benefit Obligation 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 benefit obligation 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 Benefit Obligation Funded Status

As of January 1, 2015 the projected benefit obligation was:

1.	Retired members and beneficiaries currently receiving benefits and terminated members not yet receiving benefits	$ 892,626,625
	a. Current active participants	
	i. Accumulated member contributions, including interest	116,755,946
	ii. Employer-financed benefits	156,682,397
	Total projected benefit obligation	$ 1,166,064,968

As of January 1, 2015 the projected benefit obligation was funded as follows:

2.	Net assets available for benefits at actuarial value	$ 926,905,797
3.	Unfunded projected benefit obligation	239,159,171
4.	Actuarial value funding ratio, (2) / (1)	79.5%
5.	Net assets available for benefits at market value	$ 907,062,130
6.	Unfunded projected benefit obligation	259,002,838
7.	Market value funding ratio, (5) / (1)	77.8%

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)
1998	122,227,173	296,455,647	252,445,749	644,429,672	100%	100%	89%
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%

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 7.26% on an actuarial value basis, which is 0.74% below the assumed rate of return of 8.00%. In accordance with Rule X, no amounts would have been transferred from the investment contingency portion of the reserve, because the preliminary actuarial rate of return was within 1% of the assumed rate of return. Further, 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 of 3.75%, 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, 2014	$ 922,922,386
2.	Participant contributions	11,887,933
3.	Employer contributions	41,757,458
4.	Benefit payments and expenses	114,433,049
5.	Investment increment at 8.00%, 8% x {(1) + .5 x [(2) – (4)]}	69,731,986
6.	Expected actuarial value on January 1, 2015, (1) + (2) + (3) – (4) + (5)	931,866,714
7.	Market value of assets on January 1, 2015	936,930,500
8.	Expense and contingency reserve on January 1, 2015, prior to adjustment	29,868,370
9.	Adjustment to the investment contingency reserve	0
10.	Excess of market value over expected actuarial value, (7) – (6) – (8) – (9)	(24,804,584)
11.	Market value adjustment, 20% x (10)	(4,960,917)
12.	Actuarial value of assets as of January 1, 2015, (6) + (11)	926,905,797

Section 2 (continued)

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.

Since the actuarial return on assets was within 1% of 8% during 2014, the reserve would not be adjusted,even if the entire contingency reserve had not been released in 2009.

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

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, 2014	$ 962,717,365
ii.	B = Market value of assets as of January 1, 2015	936,930,500
iii.	C = Contributions during the period	53,645,391
iv.	D = Disbursements during the period	114,433,049
v.	Rate of return: $\frac{B - A + D - C}{A + \frac{1}{2}(C - D)}$	3.75%
vi.	Actuarial assumed rate of return for 2014	8.00%
vii.	Difference between actual and assumed rates of return, (v) – (vi)	-4.25%

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, 2014	$ 922,922,386
ii.	B = Actuarial value of assets as of January 1, 2015	926,905,797
iii.	C = Contributions during the period	53,645,391
iv.	D = Disbursements during the period	114,433,049
v.	Rate of return: $\frac{B - A + D - C}{A + \frac{1}{2}(C - D)}$	7.26%
vi.	Actuarial assumed rate of return for 2014	8.00%
vii.	Difference between actual and assumed rates of return, (v) – (vi)	-0.74%

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.

Section 3 (continued)

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, 2014	**4,880**	4,116	303	270	**4,689**	462	1,336	**1,798**	11,367
New Entrants	**790**						39	**39**	829
Rehires/Transfers	**85**	(3)			**(3)**	(12)	(29)	**(41)**	41
Retirements	**(95)**	129			**129**	(34)		**(34)**	0
Disablements	**(12)**			12	**12**				0
Beneficiaries			19		**19**	10		**10**	29
Deaths	**(7)**	(179)	(22)	(18)	**(219)**	(1)	(3)	**(4)**	(230)
Deferred Vested	**(64)**					64		**64**	0
Nonvested Terminations - Account Balance	**(228)**						228	**228**	0
Refunds Paid in 2014	**(336)**					(17)	(76)	**(93)**	(429)
Data Adjustments	**(2)**	1		(4)	**(3)**	1	44	**45**	40
Total as of January 1, 2015	**5,011**	4,064	300	260	**4,624**	473	1,539	**2,012**	11,647

Section 3 (continued)

3.4 Member Census Information

As of January 1	2014	2015
Active Members		
Number	4,880	5,011
Average Age	43.65	43.77
Average Service	8.08	7.94
Average Annual Base Pay	$ 49,852	$ 49,032
Vested Terminated Members		
Number	462	473
Average Account Balance	$ 27,314	$ 28,080
Non-vested Terminated Members		
Number	1,336	1,539
Average Account Balance	$ 3,525	$ 3,485
Benefit Recipients		
Number	4,689	4,624
Average Age	73.15	73.35
Average Monthly Benefit	$ 1,867	$ 1,894

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	96	0	0	0	0	0	0	0	0	96
25 - 29	250	13	0	0	0	0	0	0	0	263
30 - 34	189	47	5	0	0	0	0	0	0	241
35 - 39	106	32	21	1	0	0	0	0	0	160
40 - 44	102	23	10	0	0	0	0	0	0	135
45 - 49	75	17	3	0	2	0	0	0	0	97
50 - 54	52	16	3	1	0	0	0	0	0	72
55 - 59	43	15	6	1	0	0	0	0	0	65
60 - 64	26	7	2	0	0	0	0	0	0	35
65 - 69	9	2	0	0	0	0	0	1	0	12
70 & Up	1	0	0	0	0	0	0	1	0	2
Total	949	172	50	3	2	0	0	2	0	1,178

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	146	0	0	0	0	0	0	0	0	146
25 - 29	337	29	0	0	0	0	0	0	0	366
30 - 34	279	130	12	1	0	0	0	0	0	422
35 - 39	209	108	81	19	1	0	0	0	0	418
40 - 44	175	100	95	84	8	0	0	0	0	462
45 - 49	158	74	88	72	30	7	0	0	0	429
50 - 54	149	79	78	70	45	52	6	0	0	479
55 - 59	142	71	87	89	59	85	40	8	0	581
60 - 64	84	54	56	69	43	40	21	31	8	406
65 - 69	18	11	24	14	9	9	5	2	3	95
70 & Up	5	2	9	4	1	1	0	0	0	22
Total	1,702	658	530	422	196	194	72	41	11	3,826

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	242	0	0	0	0	0	0	0	0	242
25 - 29	587	42	0	0	0	0	0	0	0	629
30 - 34	468	177	17	1	0	0	0	0	0	663
35 - 39	315	140	102	20	1	0	0	0	0	578
40 - 44	277	123	105	84	8	0	0	0	0	597
45 - 49	233	91	91	72	32	7	0	0	0	526
50 - 54	201	98	81	71	45	52	6	0	0	554
55 - 59	186	87	93	90	59	85	40	8	0	648
60 - 64	110	62	59	69	43	40	21	31	8	443
65 - 69	27	13	24	14	9	9	5	3	3	107
70 & Up	6	2	9	4	1	1	0	1	0	24
Total	2,652	835	581	425	198	194	72	43	11	5,011

Section 3 (continued)

3.6 Distributions of Inactive Members

Deferred Vested and Nonvested

Account Balance	Vested	Non-Vested	Total
0-1,000	35	452	487
1,000-5,000	16	685	701
5,000-10,000	15	302	317
10,000-25,000	188	97	285
25,000-50,000	159	2	161
50,000-75,000	48	1	49
75,000-100,000	10	0	10
100,000+	2	0	2
Total	473	1,539	2,012

Retirees, Beneficiaries and Disabled

Option	Service benefit	Disability benefit	Survivor benefit	All
0	3,435	204	300	3,939
1	145	18	0	163
2	86	5	0	91
3	187	16	0	203
4	179	7	0	186
5	21	4	0	25
6	10	6	0	16
7	1	0	0	1
Total	4,064	260	300	4,624

Annual Benefit

Option	Service benefit	Disability benefit	Survivor benefit	All
0	$84,147,431	$2,847,228	$3,292,597	$ 90,287,256
1	2,687,222	257,498	0	2,944,719
2	1,982,119	124,270	0	2,106,389
3	3,852,963	216,148	0	4,069,111
4	4,620,663	142,656	0	4,763,320
5	560,917	42,869	0	603,786
6	210,093	50,744	0	260,837
7	30,849	0	0	30,849
Total	$98,092,257	$3,681,413	$3,292,597	$105,066,268

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)

	Added to Payroll		Removed from Payroll		Payroll Year-End		% Increase in Annual Allowances	Average Annual Allowance
Plan Year	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances		
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

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.

Section 3 (continued)

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 6. 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 2015 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	0.194	0.118	60	3.007	3.382
21	0.207	0.115	61	3.420	3.687
22	0.219	0.116	62	3.761	4.006
23	0.237	0.121	63	4.240	4.335
24	0.254	0.128	64	4.604	4.671
25	0.278	0.136	65	4.961	5.008
26	0.316	0.149	66	5.469	5.340
27	0.329	0.155	67	5.806	5.664
28	0.338	0.164	68	5.941	5.975
29	0.354	0.173	69	6.230	6.271
30	0.382	0.195	70	6.305	6.550
31	0.429	0.241	71	7.129	7.146
32	0.484	0.275	72	8.776	8.337
33	0.543	0.300	73	11.247	10.124
34	0.604	0.322	74	14.541	12.506
35	0.665	0.341	75	18.659	15.484
36	0.724	0.358	76	23.600	19.058
37	0.778	0.374	77	29.365	23.227
38	0.805	0.392	78	35.953	27.992
39	0.827	0.412	79	43.365	33.353
40	0.848	0.449	80	51.599	39.309
41	0.871	0.492	81	59.047	43.509
42	0.899	0.541	82	67.449	48.233
43	0.932	0.595	83	75.186	53.556
44	0.973	0.654	84	85.491	59.563
45	1.018	0.693	85	94.897	67.842
46	1.059	0.731	86	105.213	77.357
47	1.102	0.769	87	119.173	88.206
48	1.146	0.832	88	134.866	98.247
49	1.193	0.899	89	149.044	111.533
50	1.240	1.002	90	167.928	123.259
51	1.287	1.118	91	182.908	135.355
52	1.335	1.289	92	202.751	147.536
53	1.430	1.486	93	218.717	163.089
54	1.534	1.717	94	234.658	174.923
55	1.704	1.985	95	255.965	186.128
56	1.917	2.301	96	271.672	196.530
57	2.169	2.590	97	286.932	210.554
58	2.464	2.832	98	308.432	219.072
59	2.721	3.097	99	323.018	226.350

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	0.194	0.118	60	5.748	5.553
21	0.207	0.115	61	6.455	6.197
22	0.219	0.116	62	7.110	6.886
23	0.237	0.121	63	8.031	7.621
24	0.254	0.128	64	8.886	8.414
25	0.278	0.136	65	9.840	9.282
26	0.316	0.149	66	11.149	10.221
27	0.329	0.155	67	12.343	11.231
28	0.338	0.164	68	13.346	12.333
29	0.354	0.173	69	14.743	13.571
30	0.382	0.195	70	15.925	14.994
31	0.429	0.241	71	17.620	16.275
32	0.484	0.275	72	19.564	18.102
33	0.543	0.300	73	21.791	19.681
34	0.604	0.322	74	24.311	21.813
35	0.665	0.341	75	27.744	23.554
36	0.724	0.358	76	30.923	25.950
37	0.778	0.374	77	35.173	29.221
38	0.805	0.392	78	39.965	32.212
39	0.827	0.412	79	45.415	35.563
40	0.848	0.449	80	51.599	39.309
41	0.898	0.492	81	59.047	43.509
42	0.998	0.541	82	67.449	48.233
43	1.147	0.595	83	75.186	53.556
44	1.346	0.654	84	85.491	59.563
45	1.595	0.699	85	94.897	67.842
46	1.894	0.790	86	105.213	77.357
47	2.242	0.926	87	119.173	88.206
48	2.640	1.108	88	134.866	98.247
49	3.088	1.335	89	149.044	111.533
50	3.586	1.607	90	167.928	123.259
51	3.625	1.724	91	182.908	135.355
52	3.619	1.941	92	202.751	147.536
53	3.669	2.220	93	218.717	163.089
54	3.717	2.557	94	234.658	174.923
55	3.872	2.959	95	255.965	186.128
56	4.107	3.438	96	271.672	196.530
57	4.419	3.927	97	286.932	210.554
58	4.835	4.407	98	308.432	219.072
59	5.249	4.953	99	323.018	226.350

Section 3 (continued)

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

Section 3 (continued)

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

Section 3 (continued)

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.

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

2015 Valuation Results

June 22, 2015

buckconsultants

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Data – Population as of 1/1/2015

	2015	2014	Change
Retirees and Beneficiaries	4,624	4,689	-65
Inactives	2,012	1,798	214
Actives			
School District	3,826	3,806	20
Charter Schools	1,178	1,067	111
Retirement System	7	7	0
Total Actives	5,011	4,880	131
Total	11,647	11,367	280

Data – Member Census Information

	As of January 1	
	2015	**2014**
Active Members		
Number	5,011	4,880
Average Age	43.77	43.65
Average Service	7.94	8.08
Average Annual Base Pay	$49,032	$49,852
Vested Terminated Members		
Number	473	462
Average Account Balance	$28,080	$27,314
Non-vested Terminated Members		
Number	1,539	1,336
Average Account Balance	$ 3,485	$ 3,525
Benefit Recipients		
Number	4,624	4,689
Average Age	73.35	73.15
Average Monthly Benefit	$ 1,894	$ 1,867

Valuation Results – Summary

	January 1, 2015	January 1, 2014
System Assets		
Expense and contingency reserve	$ 29,868,370	$ 30,439,781
Market value, excluding expense & contingency reserve	907,062,130	932,277,584
Actuarial value	926,905,797	922,922,386
System liabilities		
Unfunded actuarial accrued liability	$ 166,687,451	$ 170,472,382
Projected unit credit liability	$ 1,166,064,968	$ 1,174,584,948
Funding Ratio (PUC)		
Actuarial value funding ratio	79.5%	78.6%
Market value funding ratio	77.8%	79.4%
Employer Cost (% of active payroll)	15.14%	15.87%

Valuation Results – Annual Required Contribution

	2015 Valuation	2014 Valuation	Increase / (Decrease)
Normal cost contribution	20,569,969	21,885,470	(1,315,501)
Actuarial accrued liability contribution	16,640,783	16,711,760	(70,977)
Annual required contribution (ARC)	37,210,752	38,597,230	(1,386,478)
Covered compensation	245,699,583	243,280,015	2,419,568
ARC as % of covered compensation	15.14%	15.87%	(0.73)%

Valuation Results – Reconciliation of ARC

	ARC as a % of payroll
2014 valuation cost	15.87%
Demographic experience	(1.08)%
Asset experience	0.28%
Assumption changes	0.07%
2015 valuation cost	15.14%

Increases positive
(Decreases negative)

Valuation Results – ARC By Employer Group

	Board of Education	Retirement System	Charter Schools	Total
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 (ARC)	29,007,501	79,497	8,123,754	37,210,752
Covered compensation	191,534,175	524,915	53,640,493	245,699,583
ARC as % of covered compensation	15.14%	15.14%	15.14%	15.14%

Gain/Loss – Liability

	Dollar amounts in millions
A. 2014 Entry Age Normal Liability	$1,201.4
B. Expected 2015 Entry Age Normal Liability	$1,204.7
C. Actual 2015 Entry Age Normal Liability	$1,192.7
Gain / (Loss): B – C	$12.0
Gain / (Loss) as a Percent of Expected	1.0%

Gain/Loss – Assets

	Actuarial Value of Assets ($ in millions)	Market Value of Assets ($ in millions)
A. 2014 Assets	$922.9	$962.7
B. Expected 2015 Assets	$931.9	$974.8
C. Actual 2015 Assets	$926.9	$936.9
D. Gain/(Loss): C – B	($5.0)	($37.9)
E. Expected Return	8.0%	8.0%
F. Actual Return	7.3%	3.8%
G. Gain/(Loss): F - E	(0.7)%	(4.2)%

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

Effective Date for Employer Financials

Effective Date of the new standards:

- **Pension plans** are required to meet the new standards for financial reporting under GASB No. 67 for fiscal years beginning after June 15, 2013
  - Fiscal year ended December 31, 2014 for PSRS
  - All required disclosure / supplemental information required other than Pension Expense
  - First year of GASB 67 results are complete

- **Employers** are required to meet the new accounting standards under GASB No. 68 for fiscal years beginning after June 15, 2014.
  - Fiscal Year ended December 31, 2015 for PSRS
  - Inclusion of NPL on employer balance sheet rather than NPO
  - Inclusion of Pension Expense in employer income statement
  - All required disclosure / supplemental information required
  - Board and most Charter Schools have FYE 6/30, so need GASB 68 info this year
    - Pension Expense prepared as of 12/31 for the employers to allocate
    - Allocation is based on a pro rata share of active employee pay in 2014

Any Final Questions on the Valuation?

Request Board Approval of Report Results

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