

ST. PAUL TEACHERS' RETIREMENT FUND ASSOCIATION

Annual Report

for the fiscal year ended June 30, 2016

*St. Paul Teachers' Retirement Fund Association
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Jill E. Schurtz

Executive Director

Christine MacDonald

Deputy Director

Table of Contents

Introduction

Mission Statement	4
SPTRFA Board of Trustees and Staff	5
Transmittal Letter	6
Independent Professional Service Providers.....	8
Organizational Chart.....	9

Benefits

Pre-Retirement Topics.....	11
Retirement Topics.....	12
Post-Retirement Topics.....	13
Basic Plan Summary of Benefits	14
Coordinated Plan Summary of Benefits	15
Retirement History Record.....	16

Investments

Investment Returns	18
Holdings	19

Actuarial Section

Actuarial Certification Letter	30
Summary of Valuation Results.....	32
Accounting Balance Sheet	33
Changes in Assets Available for Benefits	34
Actuarial Balance Sheet	35
UAAL and Supplemental Contribution Rate	36
Changes in Unfunded Actuarial Accrued Liability	37
Determination of Contribution Sufficiency	38
Actuarial Methods & Assumptions.....	39

Appendix – State Auditor’s Report	48
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Mission

Provide our members and their beneficiaries with retirement, survivor, and disability benefits as specified in law and the Association Articles and Bylaws.

Assist our members in planning a secure retirement by providing friendly, high quality, consumer oriented service, pre-retirement education and information in a professional and cost effective manner.

Invest the assets of the fund to provide the optimum return while preserving principal by controlling portfolio risk.

SPTRFA Board of Trustees

John R. Kunz, Jr.	President
Mike McCollor	Vice President
W. Matt Bogenschultz	Secretary
Lori Borgeson	Treasurer
Feryle W. Borgeson	Trustee
Zuki Ellis	Ex-Officio Trustee
Michael McKay	Trustee
Karen A. Odegard	Trustee
James Paddock	Trustee
Stephanie Pignato	Trustee

SPTRFA Staff

Jill E. Schurtz	Executive Director
Christine MacDonald	Deputy Director
Nancy Langer	Member Services and Outreach
Susan Nystrom	Finance and Member Services
Rachel Pastick	Communications and Member Services
Janet Williams	Operations and Member Services
Tamera Zielinski	Administrative Assistant

St. Paul Teachers' Retirement Fund Association

TRUSTEES & OFFICERS

Feryle W. Borgeson
Zuki Ellis
Michael McKay

Karen Odegard
James Paddock
Stephanie Pignato

John R. Kunz, Jr. President
Mike McCollor Vice President
W. Matthew Bogenschultz... Secretary
Lori Borgeson Treasurer
Jill E. Schurtz Executive Director

1619 Dayton Avenue, Room 309
Saint Paul, MN 55104-6206
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Online: www.sptrfa.org

Letter of Transmittal

Members of the Association:

The trustees and staff of the St. Paul Teachers' Retirement Fund Association (SPTRFA) present the Annual Financial Report for the fiscal year ended June 30, 2016, in accordance with the provisions of Minnesota Statutes § 356.20.

This report is intended to provide readers with sufficient information to make informed assessments about the organization's financial condition, fiscal activities, actuarial status, investment performance, and compliance with laws, regulations, bylaws and policies.

This is the complete Annual Report of the Association. This report is also available on the Fund's website at: www.sptrfa.org, or by request from the SPTRFA office.

Major sections included in this report and their content are as follows:

- **Introduction**

Mission Statement, Board of Trustees, professional service relationships, and organizational structure.

- **Benefits**

Summary information regarding Plan benefit options, calculation methods, and a history of annual retirements.

- **Investments**

Fund investment returns, security holdings, and investment advisors under contract with the Association.

- **Actuarial Valuation**

Actuary's Certification Letter and various actuarial valuation sections that assess the Plan's long-term funded status and adequacy of revenues and describe relevant actuarial methods and assumptions.

- **Appendix A – State Auditor's Report**

The Office of the State Auditor audits the financial statements of the SPTRFA. However, their report for the most recent fiscal year was still pending completion at the time this report went to print.

The SPTRFA Board and staff are responsible for the safekeeping of the Association's assets, the prudent investment of those assets, and for ensuring that benefits are calculated properly and paid timely. Administrative costs are budgeted at a level sufficient to meet service needs of the members. We strive to be service providers of the first order and our administrative costs remain extremely efficient.

The Board and staff of the SPTRFA serve as fiduciaries on behalf of our members and their survivors and beneficiaries. We manage the assets entrusted to our care in concert with the Prudent Person Standard in Minn. Stat. § 356A.04, subd. 2, and as specified under Minn. Stat. § 356A.06, subd. 7.

With over 107 years of service to our members, the SPTRFA Board and staff remain committed to administering the affairs of the Association with the highest degree of diligence and efficiency.

Respectfully submitted,



John R. Kunz, Jr.
President



W. Matt Bogenschultz
Secretary



Lori Borgeson
Treasurer



Jill E. Schurtz
Executive Director

Independent Professional Service Providers As of June 30, 2016

Auditor

Minnesota Office of the State Auditor

Investment Managers

Advantus Capital Management

Allianz Global Investors

Barrow, Hanley, Mewhinney & Strauss, LLC

BlackRock Institutional Trust Co.

The Boston Company Asset Management, LLC

Brandywine Global Investment Management, LLC

Corvex Management, LP

Dimensional Fund Advisors, Inc.

Dune Real Estate Partners

EnTrust Capital

Franklin Park

Guggenheim Partners Investment Management, LLC

JPMorgan Investment Management, Inc.

Morgan Stanley Investment Management, Inc.

North Sky Private Equity Partners IV

Parametric Portfolio Associates

RWI Ventures I

RWI Ventures II

Minnesota State Board of Investment

TCW Asset Management Co.

Tortoise Capital Advisors

UBS Realty Investors, LLC

Venture Investment Advisors

Wellington Management Company, LLP

Investment Custodian

U.S. Bank

Investment Performance Consultant

Asset Consulting Group

IT Services

Sagitec

Corporate Technologies

Legal Counsel

Fox Rothschild

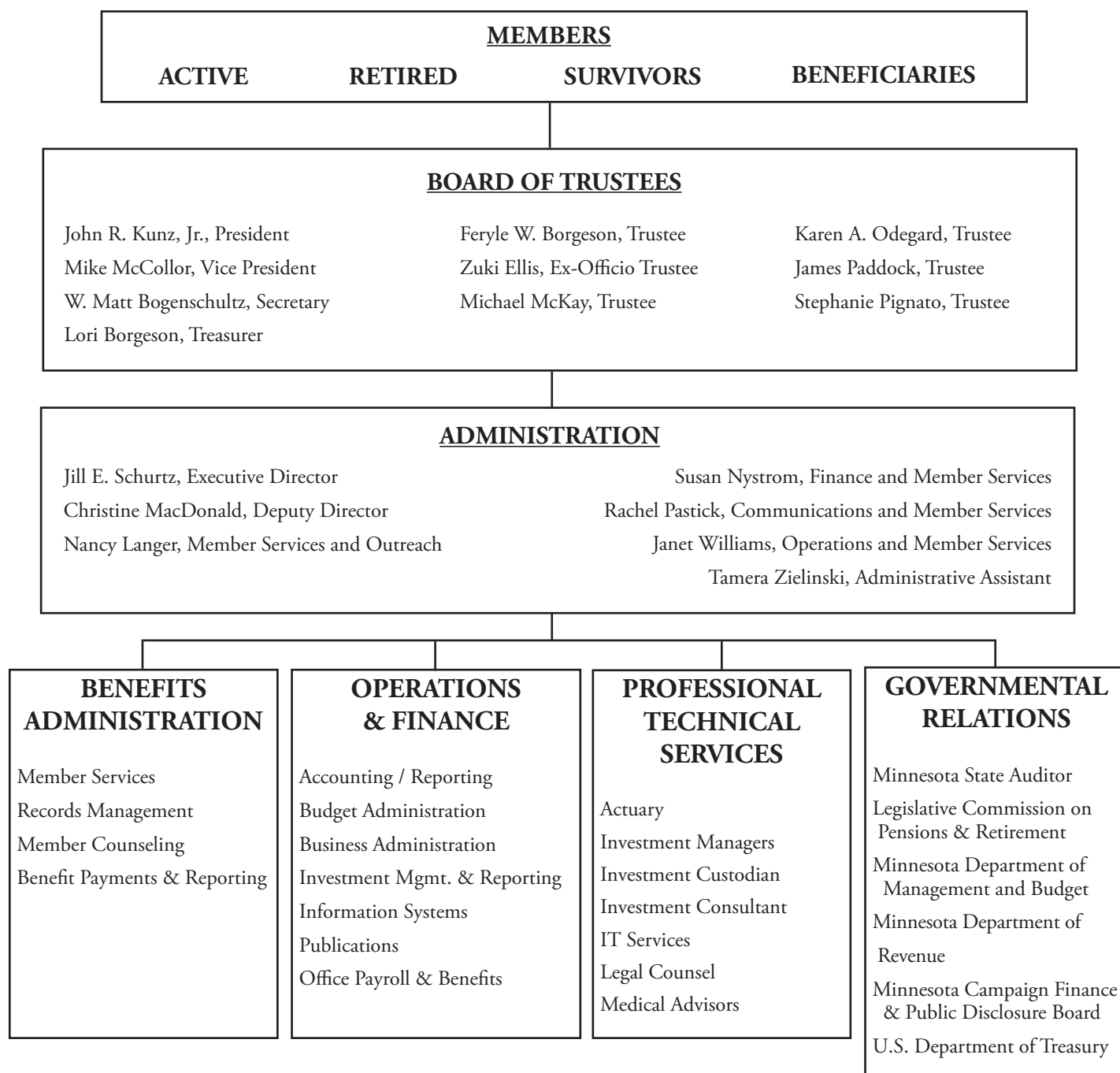
Rice, Michels & Walther, LLP

Medical Advisors

Dr. Ronald Vessey M.D.

Dr. David Johnson M.D.

Organizational Chart



BENEFITS

Pre-Retirement Topics

Membership	SPTRFA membership is mandatory upon employment in any position requiring a license issued by the MN Department of Education for employment with Saint Paul Public Schools (SPPS), St. Paul College (SPC) – if you were first employed prior to July 1, 1995, or St. Paul Charter Schools – from July 1, 1995 through June 30, 2002. Hereinafter collectively referred to as “Saint Paul Schools.”
Allowable Retirement Service Credit	A full year of retirement service credit is earned after 170 days are worked during each fiscal year. Partial years are calculated based on the ratio of days worked to 170 days. No more than one year of retirement service credit is allowable during any fiscal year.
Definition of Salary	Minnesota Statutes Chapter 354A and the Association Articles and Bylaws define salary as the entire compensation upon which member contributions are required and made.
Refund of Contributions	Coordinated and Basic members who resign from St. Paul Schools may apply for a refund of employee contributions, plus applicable interest. Basic Plan members must be either under Age 55 or ineligible for a pension to receive a refund of contributions.
Repaying a Refund of Contributions	A member who received a refund may reinstate previous retirement service credit by repaying the amount refunded plus applicable interest. Such repayments may only be made after the member has accumulated at least two years of allowable retirement service credit since the last refund was taken.
Leaves of Absence	Subject to certain requirements, members may purchase retirement service credit for the following Saint Paul Schools approved leaves of absence: Sabbatical, Military, Parental, Mobility, Medical, Family Medical.
Service Payments	Members may repay refunds or purchase SPTRFA retirement service credit by using personal savings or by transferring money from their tax-sheltered retirement accounts, such as 403(b), 457, 401(k), IRAs, or from another plan qualified under 401(a).
Beneficiary	A beneficiary is the person or persons designated to receive a refund of employee contributions, plus applicable interest, upon the death of the member if no survivor or family benefit is payable. If no valid beneficiary designation form is on file for a member, a refund of contributions plus applicable interest will be paid to the member’s estate.
Marriage Dissolution	Minnesota Statutes Chapter 518 covers marriage dissolutions and requires that SPTRFA receive a copy of the petition and summons, including a copy of the affidavit of service, before any information may be released. In the event that a court order requires a division of pension benefits, a judge signed copy of a decree or domestic relations order is required. All inquiries are kept confidential. Any survivor benefit coverage ends at the dissolution of marriage.
Disability Benefit	Subject to certain requirements, a disability benefit is available to vested members who become totally and permanently disabled.

Retirement Topics

Basic Plan Retirement Options

Basic Plan members receive a formula benefit payable for life. An automatic spousal survivor benefit is also provided. This survivor benefit coverage does not cause a reduction in the member's benefit, but does terminate at any dissolution of marriage.

Coordinated Plan Retirement Options

At the time of retirement, Coordinated Plan members select one of the five benefit annuity options below:

- | | | |
|-----------|----------------------------------|---|
| C1 | Member Life Only | Monthly benefit payable for life to the member, with nothing payable after the member's death. |
| C2 | Guaranteed Refund | Reduced monthly benefit payable for life to the member. In exchange for the member's benefit reduction, after the member's death, SPTRFA pays a refund to a designated beneficiary. The refund is equal to the difference between SPTRFA pre-retirement member contributions less cumulative SPTRFA post-retirement benefits paid to the member prior to death. |
| C3 | 15-Year Certain | Reduced monthly benefit payable for life to the member. In exchange for the member's benefit reduction, SPTRFA continues monthly payments to a beneficiary if the member's death occurs within 15 years after retirement. Beneficiary payments end after the balance of the 15 years of SPTRFA benefit payments (member and beneficiary combined) is fulfilled. |
| C4 | 100% Joint & Survivor | Reduced monthly benefit payable for life to the member. In exchange for the member's benefit reduction, after the member's death, the member's spouse receives the same monthly benefit for life. If the spouse predeceases the member, the member's benefit would bounceback to the full, unreduced benefit amount payable under the C1 option. Survivor benefit coverage ends at any dissolution of marriage. |
| C5 | 50% Joint & Survivor | Reduced monthly benefit payable for life to the member. In exchange for the member's benefit reduction, after the member's death, the member's spouse receives 50% of the member's benefit as a monthly benefit for life. If the spouse predeceases the member, the member's benefit would bounceback to the full, unreduced benefit amount payable under the C1 option. Survivor benefit coverage ends at any dissolution of marriage. |

Post-Retirement Topics

Post-Retirement SPPS Reemployment

If a retired member is reemployed by SPPS prior to Age 65, their SPTRFA monthly benefits will be reduced if the retired member earns more than \$46,000 from SPPS in any calendar year. The following year's pension will be reduced by one dollar for every three dollars in SPPS earnings over \$46,000, with the amount of the reduction forfeited to SPTRFA. After age 65, retired members have no SPPS re-employment earnings limitation. Retired members can work for any other employer without a reduction in their SPTRFA pension benefits.

90 Day Period of Separation

Newly retired members must have a complete and continuous 90 day separation from Independent School District No. 625 employment in any form. Importantly, "employment" for this purpose includes "any service provided to ISD #625 directly, as an independent contractor, or as an employee of an independent contractor."

Post-Retirement Adjustment

Post-retirement adjustments are determined annually under Minnesota statutes, which may be amended from time to time. Effective July 1, 2015, post-retirement adjustments are based on SPTRFA's funding ratio in each of the two most recent actuarial valuations, according to the following table:

<u>Accrued Liability Funding Ratio (AVA)</u>	<u>Full COLA Rate</u> <u>(%)</u>
Less than 80 percent	1.0
Greater than or equal to 80 percent, but less than 90 percent	2.0
Greater than or equal to 90 percent	2.5

The postretirement benefit increase applies to each eligible member on January 1 of each year. Members in retirement payment status for at least one full year will receive the full increase noted above. Members in retirement payment status after January 1st but on or before July 1st of the preceding year will receive one-half of the full increase.

Basic Plan - Summary of Tier Benefits

Vested members of the Basic Plan are eligible to receive a lifetime monthly pension based on the member's Final Average Salary (**FAS**), Years of Service (**YOS**) and a Percentage Multiplier.

The following chart provides an overview of the Tier 1 and Tier 2 retirement benefits:

Normal Benefit	Minimum		Computation of Annual Benefit
	Age	Service	
Tier 1			
Unreduced	Rule of 90		} FAS x YOS x 2.0%
	60	25	
	65	5	
Reduced	55	5	Reduced for early retirement by 0.25% for each month a member’s age is under 65.
	55	25	Reduced for early retirement by 0.25% for each month a member’s age is under 60.
Tier 2			
Unreduced	65	5	FAS x YOS x 2.5%
Reduced	55	5	Formula reduced for early retirement by the use of actuarial tables.
Deferred Retirement			
	55	5	Annual Benefit (see above).

Formula Key:

FAS: Final Average Salary

YOS: Years of Service

2.0% or 2.5%: Percentage Multiplier

Coordinated Plan - Summary of Tier Benefits

Vested members of the Coordinated Plan are eligible to receive a lifetime monthly pension based on the member's Final Average Salary (**FAS**), Years of Service (**YOS**) and a Percentage Multiplier. Members first hired after June 30, 1989 are only eligible for Tier 2 benefits.

The following chart provides an overview of the Tier 1 and Tier 2 retirement benefits effective as of July 1, 2015.

Normal Benefit	Minimum		Computation of Annual Benefit	
	Age	Service		
Tier 1				
Unreduced	Rule of 90	}	(FAS x First 10 YOS x Multiplier*)	
	62		30	+
	65		3	(FAS x YOS greater than 10 x Multiplier*)
Reduced	55	3	Reduced for early retirement by 0.25% for each month a member's age is under 65.	
	Any Age	30	Reduced for early retirement by 0.25% for each month a member's age is under 62.	
*Tier 1 Multipliers			First 10 YOS	Over 10 YOS
Service Prior to July 1, 2015			1.2%	1.7%
Service Effective July 1, 2015			1.4%	1.9%

Tier 2

Unreduced	If first employed before July 1, 1989:		
	65	3	FAS x YOS x Multiplier*
	If first employed on or after July 1, 1989:		
	65-66	3	FAS x YOS x Multiplier*
Reduced	55	3	Reduced for early retirement by the use of actuarial tables.
		*Tier 2 Multipliers	Service Prior to July 1, 2015 1.7%
			Service Effective July 1, 2015 1.9%

Deferred Retirement

	55	3	Annual Benefit (see above) with augmentation ¹ .
	Any Age	30	
<p>1. Augmented by 3% per year from date of resignation to January 1 after reaching Age 55, then 5% per year thereafter, if first hired prior to July 1, 2006.</p> <p>Augmented by 2.5% for all years if first hired on or after July 1, 2006.</p> <p>Augmentation for all members, regardless of hire date, changed to 2% as of July 1, 2012 for the portion of benefit deferral occurring after June 30, 2012.</p>			

Key

FAS: Final Average Salary

YOS: Years of Service

Retirement History Record

Fiscal Year Ending	Pensions Granted	Persons On Payroll	Benefits Paid (\$)
June 1910	15	13	\$ 4,860
June 1931	8	125	69,024
June 1932	8	130	72,961
June 1933	2	126	74,190
June 1934	6	127	74,120
June 1935	9	131	74,001
June 1936	14	135	75,864
June 1937	19	151	80,747
June 1938	17	160	89,709
June 1939	11	161	93,184
June 1939 to			
December 1939	0	158	23,870
December 1940	71	222	170,685
December 1941	35	246	210,257
December 1942	27	266	234,217
December 1943	38	286	253,031
December 1944	34	311	282,299
December 1945	56	350	308,113
December 1946	51	378	337,512
December 1947	28	387	360,571
December 1948	42	413	375,912
December 1949	42	441	419,618
December 1950	30	461	450,641
December 1951	27	476	472,670
December 1952	28	486	508,923
December 1953	32	487	525,959
December 1954	10	482	529,429
December 1955	38	509	666,994
December 1956	46	529	750,146
December 1957	59	560	840,883
December 1958	41	579	1,019,502
December 1959	30	585	1,084,506
December 1960	38	600	1,144,380
December 1961	39	611	1,230,715
December 1962	49	624	1,352,779
December 1963	42	647	1,467,461
December 1964	33	653	1,545,252
December 1965	40	668	1,631,554
December 1966	43	676	1,770,083
December 1967	36	682	1,862,249
December 1968	45	695	1,969,760
December 1969	53	726	2,319,186
December 1970	31	719	2,385,868
December 1971	47	731	2,522,350
December 1972	51	745	2,742,660
December 1973	36	744	3,039,253
December 1974	46	754	3,372,453

Fiscal Year Ending	Pensions Granted	Persons On Payroll	Benefits Paid (\$)
December 1975	52	778	\$ 3,765,322
December 1976	77	883	4,393,513
December 1977	63	919	5,050,507
December 1978	48	946	5,523,548
December 1979	40	946	6,240,309
December 1980	47	963	6,623,804
December 1981	47	981	7,139,037
December 1982	61	996	7,725,617
December 1983	72	1,042	8,555,099
December 1984	64	1,061	9,466,664
January 1985 to			
June 1985	59	1,103	5,324,727
June 1986	66	1,134	11,267,144
June 1987	117	1,191	12,478,180
June 1988	70	1,210	14,690,455
June 1989	67	1,236	15,506,957
June 1990	67	1,270	17,382,410
June 1991	80	1,309	18,811,677
June 1992	83	1,357	20,509,335
June 1993	120	1,426	22,763,806
June 1994	92	1,469	25,044,494
June 1995	113	1,539	26,792,534
June 1996	119	1,595	29,446,215
June 1997	179	1,720	32,056,967
June 1998	129	1,789	37,852,099
June 1999	114	1,861	41,724,751
June 2000	144	1,964	47,121,179
June 2001	130	2,050	53,851,893
June 2002	127	2,136	58,738,724
June 2003	126	2,248	63,357,052
June 2004	141	2,361	67,941,921
June 2005	192	2,505	72,448,201
June 2006	146	2,624	78,420,222
June 2007	138	2,744	82,809,201
June 2008	122	2,851	88,273,233
June 2009	114	2,933	92,137,480
June 2010	166	3,044	95,299,300
June 2011	233	3,212	97,264,937
June 2012	141	3,292	101,989,143
June 2013	166	3,404	103,237,869
June 2014	177	3,529	105,742,221
June 2015	178	3,633	108,877,858
June 2016	159	3,723	111,223,711

INVESTMENTS

Investment Returns for Fiscal Year End June 30, 2016

	<u>Assets Under Management (Market Value)</u>	<u>Fiscal Year Investment Performance</u>
Domestic Equity		
Barrow, Hanley, Mewhinney & Strauss, Inc.	50,094,716	2.21%
BlackRock S&P 500	8,387,873	4.02%
The Boston Company Asset Management	40,352,260	-9.42%
Dimensional Fund Advisors, Inc.	43,303,483	-5.33%
State Board of Investments - Domestic Equity	191,503,219	2.22%
Wellington Management Company, LLP	42,956,086	-10.41%
	\$ 376,597,637	
International Equity		
State Board of Investments - Int'l Equity	75,039,743	-9.49%
	\$ 75,039,743	
Global Equity		
Morgan Stanley Global Franchise	53,126,528	10.99%
JP Morgan Focus	47,724,081	-8.51%
	\$ 100,850,608	
Fixed Income		
Brandywine Global Opportunistic Fixed	35,206,067	5.40%
Allianz Cash Overlay	25,074,390	5.66%
Guggenheim Core Plus	103,645,373	6.34%
	\$ 163,925,831	
Real Assets		
Advantus	35,236,823	24.30%
UBS Trumbull Fund	43,470,098	10.76%
UBS Growth & Income Fund	15,502,052	19.15%
Tortoise MLP	18,265,067	-14.99%
Dune Realty Partners	2,771,176	25.54%
Parametric - TIPS	10,270,493	4.50%
	\$ 125,515,708	
Private Equity		
Franklin Park	18,082,444	
North Sky	7,888,030	
RWI Ventures I	246,000	
RWI Ventures II	607,750	
TCW LLC	4,881,198	
VIA Partners	1,502,671	
	\$ 33,208,093	2.07%
Alternatives		
Parametric Defensive Equity	20,292,392	4.28%
	\$ 20,292,392	
Opportunistic		
Corvex	13,445,278	-21.13%
Entrust	8,652,084	9.96%
	\$ 22,097,362	
Cash		
Cash - US Bank Custody	32,976,634	0.05%
Cash - US Bank Checking	3,707,725	
Parametric Cash Overlay	1,898,948	-3.01%
	\$ 38,583,307	
Total Fund (net of fees)	\$ 956,110,682	0.34%
Total Fund Benchmark		1.51%

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity		Cost	Market Value	Accrued Interest	
	Shares or Units				or Dividends	Mkt + Accrued
Cash or Equivalents						
Imprest Cash	-	\$ 500	\$ 500	\$ -	\$ 500	
U.S. Bank Interest Bearing Checking Acct	-	104,462	\$ 104,462	-	104,462	
U.S. Bank Commercial Paper Sweep	-	3,602,764	\$ 3,602,764	-	3,602,764	
Custodian Short Term Investment Pool	-	40,103,984	40,103,984	6,569	40,110,553	
Subtotal - Cash or Equivalents	-	\$ 43,811,710	\$ 43,811,710	\$ 6,569	\$ 43,818,279	
Domestic Equity Securities						
Acadia Healthcare Co Inc	13,600	\$ 810,700	\$ 753,440	\$ -	\$ 753,440	
Adeptus Health Inc Class A	10,121	608,311	522,851	-	522,851	
Advance Auto Parts Inc	3,800	575,679	614,194	228	614,422	
Air Prods Chemicals Inc	10,800	1,436,956	1,534,032	9,288	1,543,320	
Akorn Inc	19,873	738,952	566,082	-	566,082	
Alexandria Real Estate Equities Inc	5,700	463,411	590,064	4,560	594,624	
Alliance Data Systems Corp	6,200	1,329,947	1,214,704	-	1,214,704	
Altria Group Inc	29,400	490,648	2,027,424	16,611	2,044,035	
American Campus Communities	15,900	662,517	840,633	-	840,633	
American Express Co	19,800	1,085,400	1,203,048	5,742	1,208,790	
Antero Midstream Partners Lp	13,631	368,859	379,896	-	379,896	
Anthem Inc	6,600	662,161	866,844	-	866,844	
Apartment Invt Mgmt Co Cl A	4,226	165,842	186,620	-	186,620	
Assurant Inc	9,774	748,729	843,594	-	843,594	
At&T Inc	15,800	558,513	682,718	-	682,718	
Atwood Oceanics Inc	21,000	417,062	262,920	-	262,920	
Avalonbay Cmnty Inc	9,000	1,297,883	1,623,510	12,150	1,635,660	
Avis Budget Group Inc	37,308	934,826	1,202,437	-	1,202,437	
Bank Of America Corp	54,628	1,053,312	724,914	-	724,914	
Belden Inc	23,797	1,425,657	1,436,625	1,350	1,437,975	
Borg Warner Inc	19,900	775,391	587,448	-	587,448	
Boston Ppty Inc	8,879	972,555	1,171,140	5,771	1,176,911	
Boston Scientific Corp	38,737	574,824	905,284	-	905,284	
Bp Plc Spon A D R	30,300	1,372,226	1,075,953	-	1,075,953	
Brixmor Property Group Inc	14,800	379,622	391,608	-	391,608	
Broadridge Financial Solutions Inc	6,445	404,123	420,214	-	420,214	
Brookdale Sr Living Inc	45,967	749,279	709,730	-	709,730	
Buckeye Partners Lp	15,405	1,078,001	1,083,434	-	1,083,434	
Calpine Corp	45,111	656,450	665,387	-	665,387	
Camden Ppty Tr Sbi	6,900	524,758	610,098	5,175	615,273	
Capital One Financial Corp	16,400	1,160,538	1,041,564	-	1,041,564	
Cardinal Health Inc	12,900	729,508	1,006,329	5,791	1,012,120	
Carnival Corp	19,700	621,911	870,740	-	870,740	
Cdw Corp De	39,400	1,350,032	1,579,152	-	1,579,152	
Cerner Corporation	9,845	652,353	576,917	-	576,917	
Cheniere Energy Inc	14,262	358,025	535,538	-	535,538	
Cheniere Energy Partners Lp	20,696	358,223	412,471	-	412,471	
Chevron Corporation	5,200	241,993	545,116	-	545,116	
Ciena Corp	59,874	1,156,649	1,122,638	-	1,122,638	
Citigroup Inc	17,510	725,022	742,249	-	742,249	
Clarcor Inc	3,676	204,547	223,611	-	223,611	
Columbia Bkg Sys Inc	7,274	191,507	204,108	-	204,108	
Columbia Pipeline Partners L P	6,068	159,481	91,020	-	91,020	
Commvault Systems Inc	24,411	967,536	1,054,311	-	1,054,311	

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Conocophillips	13,900	354,536	606,040	-	606,040
Corelogic Inc	8,040	207,083	309,379	-	309,379
Cracker Barrel Old Ctry Store	1,900	233,271	325,793	-	325,793
Crh Spon A D R	44,400	989,264	1,313,352	-	1,313,352
Cubesmart	14,257	238,032	440,256	2,994	443,250
Cyrusone Inc	11,300	507,965	628,958	4,294	633,252
D R Horton Inc	26,100	597,407	821,628	-	821,628
Dct Industrial Trust Inc	8,400	268,175	403,536	2,436	405,972
Ddr Corp	15,200	264,647	275,728	2,888	278,616
Deere Co	12,200	1,089,339	988,688	7,320	996,008
Digital Realty Trust Inc	10,600	780,412	1,155,294	-	1,155,294
Dollar General Corp	9,500	691,369	893,000	-	893,000
Dollar Tree Inc	5,900	329,476	556,016	-	556,016
Dominos Pizza Inc	2,277	288,303	299,152	-	299,152
Douglas Emmitt Inc	4,800	143,629	170,496	1,056	171,552
Duke Realty Corporation	30,400	510,092	810,464	-	810,464
Dunkin Brands Group Inc	7,900	360,657	344,598	-	344,598
E Trade Financial Corp	23,492	373,402	551,827	-	551,827
Education Realty Trust Inc	8,900	353,582	410,646	-	410,646
Edwards Lifesciences Corp	4,723	337,926	471,025	-	471,025
Electronic Arts Inc	7,200	491,654	545,472	-	545,472
Enbridge Energy Partners L P	6,655	248,636	154,396	-	154,396
Energy Transfer Equity L P	44,375	649,548	637,669	-	637,669
Energy Transfer Partners L P	21,226	636,124	808,074	-	808,074
Enterprise Prods Partners L P	59,454	1,734,669	1,739,624	-	1,739,624
Envestnet Inc	5,907	217,260	196,762	-	196,762
Envision Healthcare Holdings Inc	13,800	434,585	350,106	-	350,106
Eqt Gp Holdings Lp	3,914	118,229	99,768	-	99,768
Eqt Midstream Partners Lp	14,082	1,061,543	1,130,785	-	1,130,785
Equinix Inc	4,462	1,267,828	1,730,051	-	1,730,051
Equity Lifestyle Pptys Inc	5,200	300,484	416,260	2,210	418,470
Equity Residential	12,900	815,525	888,552	6,498	895,050
Essex Ppty Tr Inc	4,594	756,401	1,047,845	7,350	1,055,196
Expedia Inc	5,870	540,489	623,981	-	623,981
Express Scripts Hldgs C	16,900	1,185,794	1,281,020	-	1,281,020
Extra Space Storage Inc	6,300	324,059	583,002	-	583,002
F E I Co	2,800	219,425	299,264	-	299,264
Fabrinet	5,885	187,914	218,451	-	218,451
Federal Rlty Invt Tr Sbi New	3,000	365,077	496,650	2,726	499,376
Fidelity National Financial Inc	13,560	268,027	508,500	-	508,500
Fidelity National Financial Inc	25,444	578,097	291,843	-	291,843
First Data Corp Class A	51,700	590,930	572,319	-	572,319
First Indl Rlty Tr Inc	23,000	480,442	639,860	4,370	644,230
First Republic Bank San Fran	3,981	227,524	278,630	-	278,630
Fleetcor Technologies Inc	4,800	684,197	687,024	-	687,024
Flir Systems Inc	22,446	722,563	694,704	-	694,704
Gamestop Corp Cl A	13,100	400,150	348,198	-	348,198
General Dynamics Corp	6,900	535,373	960,756	5,244	966,000
General Growth Properties	34,700	829,503	1,034,754	-	1,034,754
Genesis Energy Lp	10,314	518,791	395,748	-	395,748
Global Payments Inc	7,694	452,483	549,198	-	549,198
Grand Canyon Education Inc	15,200	619,434	606,784	-	606,784
Gw Pharmaceuticals A D R	11,417	746,311	1,045,455	-	1,045,455

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Harley Davidson Inc	12,300	630,159	557,190	-	557,190
Harman International	11,300	1,203,498	811,566	-	811,566
Hcp Inc	7,500	279,109	265,350	-	265,350
Hd Supply Holdings Inc	23,768	742,994	827,602	-	827,602
Hd Supply Holdings Inc	26,800	813,841	933,176	-	933,176
Highwoods Properties Inc	10,400	443,068	549,120	-	549,120
Honeywell International Inc	8,500	278,969	988,720	-	988,720
Host Hotels Resorts Inc	39,910	713,410	646,941	7,982	654,923
Houghton Mifflin Harcourt Co	72,272	1,304,030	1,129,611	-	1,129,611
Hubbell Inc	7,702	791,820	812,330	-	812,330
Huron Consulting Group Inc	1,103	76,181	66,643	-	66,643
Icon Plc	15,898	948,955	1,113,019	-	1,113,019
Imax Corp	9,700	348,535	285,956	-	285,956
Ims Health Holdings Inc	27,100	722,579	687,256	-	687,256
Ingram Micro Inc Cl A	4,413	115,126	153,484	-	153,484
Intel Corp	24,600	450,696	806,880	-	806,880
Intercontinental Exchange In	3,100	776,192	793,476	1,848	795,324
Interface Inc	32,478	626,765	495,290	-	495,290
J P Morgan Chase Co	24,300	945,375	1,510,002	-	1,510,002
Johnson Controls Inc	32,200	1,478,443	1,425,172	9,338	1,434,510
Johnson Johnson	11,000	719,083	1,334,300	-	1,334,300
Kansas City Southern	5,600	501,733	504,504	-	504,504
Keysight Technologies Inc	22,389	704,188	651,296	-	651,296
Kilroy Rlty Corp	7,300	398,678	483,917	3,188	487,105
Kimco Realty Corp	25,600	572,771	803,328	-	803,328
Knight Transn Inc	37,738	938,665	1,003,076	-	1,003,076
Korn Ferry Intl	3,610	104,057	74,727	-	74,727
Lam Research Corp	10,900	775,846	916,254	-	916,254
Lasalle Hotel Properties	2,400	64,124	56,592	1,080	57,672
Leucadia Natl Corp	75,110	1,569,057	1,301,656	-	1,301,656
Liberty Ppty Tr Sbi	11,200	387,971	444,864	5,320	450,184
Lincoln National Corp	14,300	701,204	554,411	-	554,411
Lithia Motors Inc Cl A	9,958	868,056	707,715	-	707,715
Lkq Corp	14,666	387,965	464,912	-	464,912
Lumentum Holdings Inc W I	17,458	442,152	422,484	-	422,484
Macerich Co	7,500	587,803	640,425	-	640,425
Magellan Midstream Partners Lp	20,764	1,176,032	1,578,064	-	1,578,064
Marathon Petroleum Corp	13,600	476,283	516,256	-	516,256
Marketaxess Hldgs Inc	3,200	316,539	465,280	-	465,280
Maxim Integrated Prods Inc	11,064	411,801	394,874	-	394,874
Media General Inc	9,297	149,652	159,815	-	159,815
Medtronic Plc	18,800	1,446,660	1,631,276	-	1,631,276
Mellanox Technologies Ltd A D R	14,300	692,029	685,828	-	685,828
Merck Co Inc	19,100	806,079	1,100,351	8,786	1,109,137
Methanex Corp	40,875	1,143,836	1,189,463	-	1,189,463
Methode Electronics Inc	20,852	648,421	713,764	-	713,764
Michaels Cos Inc The	23,200	523,718	659,808	-	659,808
Microsemi Corp	5,963	185,862	194,871	-	194,871
Microsoft Corp	30,400	573,775	1,555,568	-	1,555,568
Miller Herman Inc	25,100	718,455	750,239	3,334	753,573
Mohawk Inds Inc	4,600	885,334	872,896	-	872,896
Monster Beverage Corp	3,300	277,212	530,343	-	530,343

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Mosaic Co The	42,435	1,077,701	1,110,948	-	1,110,948
Mplx Lp	32,305	1,396,087	1,086,417	-	1,086,417
New Gold Inc	68,775	181,629	301,235	-	301,235
Nexstar Broadcasting Group A	12,140	691,850	577,621	-	577,621
Nielsen Holdings Plc	31,039	1,447,616	1,613,097	-	1,613,097
Northern Tr Corp	8,900	651,189	589,714	3,204	592,918
Norwegian Cruise Line Holdings Ltd	16,800	900,470	669,312	-	669,312
Oaktree Capital Group Llc	16,224	827,767	726,186	-	726,186
Occidental Petroleum Corporation	12,400	340,605	936,944	9,300	946,244
Office Depot Inc	79,055	262,702	261,672	-	261,672
Old Dominion Fght Line Inc	13,100	910,919	790,061	-	790,061
Oneok Inc	1,919	76,977	91,057	-	91,057
Oneok Partners Lp	24,278	844,869	972,577	-	972,577
Oracle Corporation	39,200	1,599,794	1,604,456	-	1,604,456
P N C Financial Services Group Inc	11,300	666,159	919,707	-	919,707
Pebblebrook Hotel Trust	7,200	247,297	189,000	2,736	191,736
Pfizer Inc	37,555	949,449	1,322,312	-	1,322,312
Philip Morris Intl	15,900	673,070	1,617,348	16,218	1,633,566
Phillips 66	7,050	107,611	559,347	-	559,347
Phillips 66 Partners Lp	11,465	573,770	640,550	-	640,550
Physicians Realty Trust	16,900	311,955	355,069	3,803	358,872
Pinnacle Financial Partners	11,302	494,549	552,103	-	552,103
Plains All Amer Pipeline Lp	49,790	2,348,321	1,368,727	-	1,368,727
Plains Gp Holdings Lp Cl A	10,118	79,440	105,531	-	105,531
Popeyes Louisiana Kitchen Inc	8,400	444,948	458,976	-	458,976
Pra Group Inc	16,500	832,266	398,310	-	398,310
Prologis Inc	30,350	1,212,711	1,488,364	-	1,488,364
Proto Labs Inc	4,641	308,991	267,136	-	267,136
Public Storage Inc	6,800	1,185,109	1,738,012	-	1,738,012
Pvh Corp	3,551	369,457	334,611	-	334,611
Qualcomm Inc	21,900	1,546,156	1,173,183	-	1,173,183
Ralph Lauren Corp	8,400	771,683	752,808	4,200	757,008
Raymond James Finl Inc	14,063	759,458	693,306	-	693,306
Regal Beloit Corp	3,542	230,391	194,987	-	194,987
Regency Centers Corporation	3,200	196,601	267,936	-	267,936
Rlj Lodging Trust	7,700	196,562	165,165	2,541	167,706
Ross Stores Inc	7,000	257,143	396,830	-	396,830
Sanofi A D R	24,900	945,107	1,042,065	-	1,042,065
Scansource Inc	10,175	371,122	377,594	-	377,594
Seagate Technology	15,300	367,265	372,708	-	372,708
Seaspan Corp 6.375% Pfd	21,725	544,902	543,342	-	543,342
Shell Midstream Partners L P	15,234	484,670	514,757	-	514,757
Sherwin Williams Co	1,550	386,358	455,189	-	455,189
Simon Property Group Inc	16,065	2,256,768	3,484,499	-	3,484,499
Sinclair Broadcast Group Inc A	38,424	1,146,786	1,147,341	-	1,147,341
Skechers U S A Inc	14,900	477,603	442,828	-	442,828
Skyworks Solutions Inc	5,000	240,236	316,400	-	316,400
Sl Green Rlty Corp	9,200	919,324	979,524	6,624	986,148
Slm Corp	189,282	1,373,985	1,169,763	-	1,169,763
Snap On Inc	2,840	429,773	448,209	-	448,209
Snap On Inc	3,800	581,520	599,716	-	599,716
Southwestern Energy Co	27,600	339,847	347,208	-	347,208

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Spectra Energy Partners Lp	14,388	684,907	678,826	-	678,826
Staples Inc	91,057	1,103,685	784,911	-	784,911
State Str Corp	20,700	994,745	1,116,144	7,038	1,123,182
Steelcase Inc Cl A	31,904	458,831	432,937	-	432,937
Stericycle Inc	5,200	590,965	541,424	-	541,424
Store Capital Corp	10,700	261,806	315,115	2,889	318,004
Sun Cmnty Inc	7,100	484,285	544,144	4,615	548,759
Sunoco Logistics Partners L P	39,937	1,204,659	1,148,189	-	1,148,189
Svb Finl Group	10,187	860,147	969,395	-	969,395
Tallgrass Energy Partners L P	7,608	325,505	350,120	-	350,120
Talmer Bancorp Inc Cl A	10,629	153,329	203,758	-	203,758
Tesoro Logistics Lp	15,947	882,240	789,855	-	789,855
Teva Pharmaceutical Inds Ltd A D R	26,800	1,208,940	1,346,164	-	1,346,164
Texas Instruments Inc	21,100	524,374	1,321,915	-	1,321,915
Therapeutics Md Inc	127,604	1,076,590	1,084,634	-	1,084,634
Thor Industries Inc	7,200	417,085	466,128	-	466,128
Transunion	8,100	261,384	270,864	-	270,864
Travelers Cos Inc	12,800	526,570	1,523,712	-	1,523,712
Trinet Group Inc	36,500	703,266	758,835	-	758,835
Trueblue Inc	43,436	928,193	821,809	-	821,809
Udr Inc	7,200	212,538	265,824	-	265,824
United Health Group Inc	7,600	338,878	1,073,120	-	1,073,120
United Microelectron Sp A D R	364,410	664,402	725,176	-	725,176
United Technologies Corp	12,300	1,165,093	1,261,365	-	1,261,365
Universal Display Corporation	14,474	466,619	981,337	-	981,337
Universal Health Svcs B	2,300	216,384	308,430	-	308,430
Valero Energy Partners Lp	8,357	290,864	392,863	-	392,863
Vantiv Inc	9,200	307,167	520,720	-	520,720
Veeco Instrs Inc Del	25,526	830,910	422,711	-	422,711
Ventas Inc	12,961	718,267	943,820	-	943,820
Verizon Communications Inc	26,696	1,133,228	1,490,705	-	1,490,705
Viavi Solutions Inc	124,679	882,046	826,622	-	826,622
Vornado Realty Trust	12,342	1,109,265	1,235,681	-	1,235,681
Wabco Hldgs Inc	4,400	465,428	402,908	-	402,908
Wal Mart Stores Inc	14,500	894,404	1,058,790	-	1,058,790
Web Com Group Inc	75,500	1,650,108	1,372,590	-	1,372,590
Weingarten Rlty Invts	12,000	409,634	489,840	-	489,840
Wells Fargo Co	32,000	848,778	1,514,560	-	1,514,560
Welltower Inc	20,700	1,352,407	1,576,719	-	1,576,719
Werner Enterprises Inc	18,432	414,198	423,383	-	423,383
Western Gas Equity Partners Lp	5,635	234,092	215,539	-	215,539
Western Gas Partners Lp	17,529	1,089,750	883,462	-	883,462
Williams Cos Inc	19,565	551,595	423,191	-	423,191
Williams Partners L P	2,652	90,602	91,865	-	91,865
Williams Sonoma Inc	7,486	434,204	390,245	-	390,245
Wyndham Worldwide Corp	10,400	740,525	740,792	-	740,792
Wynn Resorts Ltd	7,043	491,354	638,378	-	638,378
Yamana Gold Inc	39,007	242,619	202,836	-	202,836
Zimmer Biomet Holdings Inc	7,800	858,108	938,964	1,872	940,836
Subtotal - Domestic Equity	5,090,858	\$ 163,765,848	\$ 184,375,000	\$ 221,967	\$ 184,596,968

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity Shares or Units	Cost	Market Value	Accrued Interest or Dividends	Mkt + Accrued
Domestic Equity Commingled Accounts					
BlackRock S&P	11,512	\$ 8,010,382	\$ 8,387,873	\$ -	\$ 8,387,873
Dimensional Fund Advisors	20,514	10,481,731	43,303,483	-	43,303,483
SBI Domestic Index Stock	4,685,230	164,474,643	191,503,219	-	191,503,219
Subtotal - Domestic Equity Commingled	4,717,257	\$ 182,966,756	\$ 243,194,575	\$ -	\$ 243,194,575
International Equity Commingled Accounts					
JPMorgan Global Focus	2,311,093	\$ 36,653,943	\$ 47,724,081	\$ -	\$ 47,724,081
SBI - International	10,342,669	82,309,453	75,039,743	-	\$ 75,039,743
Subtotal - International Equity Commingled	12,653,762	\$ 118,963,396	\$ 122,763,824	\$ -	\$ 122,763,824
International Equity Mutual Funds					
Morgan Stanley Ins Glb Fra I	2,445,973	\$ 42,548,721	\$ 53,126,528	\$ -	\$ 53,126,528
Subtotal - Int'l Equity Mutual Fund	2,445,973	\$ 42,548,721	\$ 53,126,528	\$ -	\$ 53,126,528
Fixed Income Commingled Accounts					
Allianz Global Investors	1	\$ 22,000,000	\$ 25,074,390	\$ -	\$ 25,074,390
Brandywine Global Opportunistic Fi	823,121	33,935,739	35,206,067	-	35,206,067
Subtotal - Fixed Income Commingled	823,122	\$ 55,935,739	\$ 60,280,458	\$ -	\$ 60,280,458
Fixed Income Securities					
Acc Group Housing	200,000	\$ 200,000	\$ 200,000	\$ 5,856	\$ 205,856
Acis Clo Ltd	600,000	582,000	524,976	6,331	531,306.52
Acis Clo Ltd	1,000,000	995,000	997,310	5,304	1,002,613.60
Acis Clo Ltd	600,000	587,400	594,528	4,991	599,519.48
Adams Outdoor Adve	650,000	650,000	650,000	1,092	651,092.36
Adt Corp	500,000	500,000	531,250	6,597	537,847.22
Aes Corp Va	130,000	129,675	129,675	394	130,068.80
Aim Aviation Finance	904,762	904,762	895,470	1,694	897,164.13
Alm Loan Funding	250,000	245,925	248,810	1,605	250,414.79
Amerigas Finance	400,000	400,000	403,000	250	403,250.00
Amtrust Financial Services Inc	641,000	641,000	592,925	14,832	607,757.03
Anchorage Credit	1,000,000	1,000,000	1,000,000	7,525	1,007,525.00
Apollo Aviation	975,000	961,101	962,813	2,113	964,925.00
Army Hawaii Family	490,000	490,000	497,816	1,252	499,067.72
Army Hawaii Family	490,000	490,000	497,811	1,252	499,062.82
Atlantic Marine Corp	239,052	229,818	250,051	1,082	251,132.94
Avaya Inc	250,000	248,750	178,750	4,375	183,125.00
Banc Of America	946,604	887,742	946,604	453	947,057.25
Banc Of America	886,587	806,794	886,587	71	886,658.09
Bank Of America Corp	550,000	550,000	558,250	9,692	567,942.22
Bank Of America Corp	200,000	200,000	212,500	3,885	216,385.00
Barclays Mat	(2,086,500)	(2,086,500)	(2,086,500)	-	(2,086,500.00)
Barclays Mat	(811,000)	(811,000)	(811,000)	-	(811,000.00)
Bcap Llc Trust	741,498	693,996	699,996	60	700,055.65
Bhp Billiton Fin	400,000	403,600	425,000	5,400	430,400.00
Black Diamond Clo	750,000	745,313	743,400	4,967	748,367.12
Bumble Bee Acq Co	1,000,000	1,028,750	1,012,500	4,000	1,016,500.00
California St Build	600,000	903,795	970,560	7,600	978,160.00
Capmark Military	722,843	725,551	722,843	2,423	725,266
Capmark Military Hsg	827,316	907,979	1,208,799	3,849	1,212,649
Castlelake Aircraft	939,397	939,375	933,234	1,964	935,198

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Cent Clo Lp	250,000	250,000	248,500	1,227	249,727
Cerberus Onshore	250,000	247,493	249,695	1,780	251,475
Cfcre Commercial	5,981,085	476,391	462,637	6,265	468,901
Chesterfield	438,000	438,000	438,000	876	438,876
Chicago II Ref Proj	300,000	247,683	256,008	8,148	264,156
Chinos Intermed	521	494	177	7	184
Churchill Fin	1,000,000	897,500	986,280	3,519	989,799
Citigroup	1,100,000	1,011,387	1,140,469	4,362	1,144,831
Citigroup Commerci	3,850,000	500,701	510,241	6,339	516,580
Citigroup Inc	450,000	450,000	432,000	6,903	438,903
Citigroup Inc	320,000	320,000	312,800	2,433	315,233
Citigroup Inc	185,000	185,000	180,242	4,228	184,470
Citigroup Inc	100,000	100,000	102,750	1,146	103,896
Coa Summit Clo Ltd	500,000	497,500	478,535	3,462	481,997
Conocophillips	550,000	666,288	709,665	14,896	724,561
Corp Financiera	200,000	206,000	205,000	4,842	209,842
Credit Suisse	1,150,000	1,004,633	1,020,890	900	1,021,789
Detroit Mi City Sch	370,000	380,175	478,033	4,777	482,810
Diamond Head	826,298	826,094	826,298	1,487	827,785
Dish Dbs Corp	300,000	279,750	279,000	2,252	281,252
Divcore Clo	250,000	248,975	250,000	482	250,482
Dominican Republic	500,000	522,835	517,500	14,651	532,151
Dryden Senior Loan	1,000,000	974,283	1,000,000	-	1,000,000
Dryden Senior Loan	250,000	250,000	246,133	1,913	248,046
Dynagas Lng Partners	300,000	292,000	261,000	3,177	264,177
Ecaf Ltd	743,379	743,379	721,775	1,634	723,409
Emerald Aviation	898,775	906,277	894,281	1,857	896,139
Emerald Aviation	390,772	389,652	382,956	1,103	384,059
Eqf Corp	250,000	225,755	265,830	1,557	267,387
F H L M C Deb	1,000,000	654,148	714,020	-	714,020
F H L M C	2,350,000	1,471,553	1,604,463	-	1,604,463
F H L M C	300,000	183,102	195,963	-	195,963
F N M A	450,000	295,721	317,687	-	317,687
F N M A	1,650,000	1,119,516	1,182,687	-	1,182,687
F N M A	150,000	97,355	105,026	-	105,026
Fdf Limited	1,000,000	999,000	1,000,000	5,832	1,005,832
Fifth Third Bank	400,000	400,000	350,000	4,954	354,954
Figueroa Clo Ltd	250,000	246,000	241,170	961	242,131
Fort Benning Fam	750,000	582,188	580,883	2,739	583,622
Fortress Credit	1,000,000	1,000,000	1,000,000	5,277	1,005,277
Fortress Credit	1,000,000	1,000,000	999,170	4,266	1,003,436
Fortress Credit	250,000	245,825	243,615	1,846	245,461
Fortress Credit	750,000	741,825	747,368	5,601	752,969
Fortress Credit	200,000	194,080	190,504	1,831	192,335
Fortress Credit Bs	1,000,000	991,000	983,330	5,846	989,176
Gallatin Funding	750,000	745,000	741,195	5,660	746,855
Garrison Funding	1,000,000	997,000	995,610	3,216	998,826
Garrison Funding	750,000	746,250	749,205	3,438	752,643
Gasco	470,464	1	470,464	3,006	473,469
Gasco	477,184	1	477,184	3,963	481,148
Gcat	1,367,476	1,358,929	1,359,531	905	1,360,435
Gmac Commercial	377,366	359,095	377,366	1,374	378,740

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Gmh Military Hsg	485,000	507,844	485,000	6,448	491,448
Golub Capital	250,000	249,238	249,625	1,984	251,609
Golub Capital	1,000,000	991,900	987,540	3,833	991,373
Golub Capital	250,000	250,000	239,760	1,938	241,698
Great Lakes Clo	1,000,000	995,500	1,000,000	5,443	1,005,443
Great Lakes Clo Lt	250,000	250,000	248,680	2,314	250,994
Great Lakes Clo Lt	750,000	750,000	746,130	7,585	753,715
Gs Mortgage	1,000,000	1,000,000	1,001,190	2,085	1,003,275
Gulfstream Natural	250,000	235,036	260,860	3,386	264,246
Halcyon Loan Advsr	250,000	249,063	206,518	396	206,913
Halliburton Co	350,000	359,860	378,998	2,169	381,167
Hca Inc	250,000	250,625	259,375	9,302	268,677
Hess Corp	150,000	154,737	167,162	4,604	171,766
Hilton Usa Trust	850,000	857,294	855,041	2,705	857,746
Hospitality	650,000	635,293	684,996	14,029	699,025
Hrg Group Inc Sr Nt	282,000	294,594	295,748	10,240	305,988
Husky Energy Inc	450,000	409,250	465,426	3,753	469,179
Husky Energy Inc	300,000	296,109	304,758	2,533	307,291
Icahn Enterprises	600,000	613,406	565,578	14,688	580,266
Illinois St Ser 2	250,000	288,383	286,370	5,750	292,120
Ivy Hill Middle	550,000	539,825	536,289	4,531	540,819
Kehe Distributors	-	-	-	7,201	7,201
Kennedy Wilson Inc	150,000	147,000	146,250	2,203	148,453
Kkr Fin Clo Ltd	500,000	495,750	497,950	3,667	501,617
Kkr Financial Clo	500,000	498,750	498,115	2,625	500,740
Kvk Clo Ltd	500,000	489,806	431,605	2,297	433,902
Lancer Fin Spv Ltd	232,126	235,027	228,061	1,132	229,193
Lstar Securities	849,280	849,762	840,787	2,505	843,291
Lstar Securities	416,474	790,492	408,144	846	408,991
Lstar Securities	675,452	666,913	662,787	1,383	664,170
Lstar Securities	1,002,936	992,728	980,370	2,053	982,423
Lstar Securities	951,005	938,166	935,246	1,947	937,193
Lstar Securities	835,508	824,632	826,535	1,710	828,245
Lvii	1,627,912	1,627,912	1,630,972	147	1,631,120
Lvii	1,000,000	1,042,500	1,000,000	4,263	1,004,263
Magellan Midstream	100,000	99,875	113,124	1,681	114,805
Marathon Clo Ltd	1,250,000	1,244,531	1,236,263	4,273	1,240,535
Marathon Clo Ltd	1,000,000	978,700	975,050	5,880	980,930
Mcf Clo Llc	350,000	334,600	328,531	2,459	330,990
Micron Technology	500,000	476,875	426,250	10,938	437,188
Mid State Trust	375,685	385,547	405,853	2,192	408,044
Molex Electronics	283,000	266,678	288,816	6,998	295,814
Monroe Capital Clo	600,000	577,500	593,472	4,921	598,393
Mt Wilson Clo Ltd	1,000,000	971,250	962,970	3,665	966,635
N Star Real Estate	170,724	158,194	169,537	108	169,645
New Century He Tr	1,100,000	977,625	1,005,609	193	1,005,802
Newcrest Finance Pty	350,000	352,160	360,518	1,990	362,508
Newstar Arlington	250,000	243,827	234,773	5,530	240,303
Newstar Commercial	250,000	243,438	249,693	2,464	252,156
Newstar Trust	400,000	354,000	394,988	839	395,827
Newstar Trust	750,000	750,000	720,713	1,199	721,911
Nomura	170,840	158,008	166,516	19	166,535

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity	Cost	Market Value	Accrued Interest	Mkt + Accrued
	Shares or Units			or Dividends	
Northern Group	400,000	400,000	549,536	1,209	550,745
Nrpl Trust Series	902,139	899,743	899,008	620	899,629
Numericable	700,000	691,250	680,750	15,867	696,617
Nzcg Funding Ltd	500,000	493,760	500,000	2,122	502,122
Nzcg Funding Ltd	750,000	750,000	750,000	2,605	752,605
Nzcg Funding Ltd	1,000,000	997,500	984,670	7,159	991,829
Nzcg Funding Ltd	500,000	473,325	500,000	2,430	502,430
Octagon Investment	800,000	774,800	777,456	5,952	783,408
Pfp Iii	1,000,000	1,000,000	992,120	1,150	993,270
Race Point Clo Ltd	500,000	500,000	492,465	791	493,256
Rait Cre Cdo Ltd	679,829	468,483	679,829	165	679,994
Rampart Clo Ltd	1,000,000	985,000	979,050	4,692	983,742
Rbc Repo	(819,375)	(819,375)	(819,375)	-	(819,375)
Rbc Repo	(712,250)	(712,250)	(712,250)	-	(712,250)
Republic Of Kenya	650,000	681,888	601,003	869	601,872
Resource Capital	1,000,000	1,000,000	915,770	1,598	917,368
Rockwall Cdo	496,462	466,674	487,312	736	488,048
Sammons Fin Group	750,000	750,000	901,020	11,083	912,103
Sprint Communication	625,000	630,063	654,369	14,583	668,952
Sprint Nextel	150,000	157,781	159,750	1,725	161,475
Srers Funding Ltd	488,362	433,741	477,169	208	477,377
Store Master Funding	497,083	496,825	485,725	633	486,358
Sunco Logistics	850,000	840,281	954,431	4,215	958,646
T V A	500,000	507,115	586,785	6,257	593,042
T V A	330,000	399,188	458,908	4,434	463,342
Teachers Insur	700,000	699,349	785,680	10,099	795,779
Telos Clo Ltd	250,000	242,500	228,200	2,543	230,743
Tenet Healthcare	500,000	497,500	493,750	2	493,752
Ticc Clo Llc	250,000	251,000	248,590	1,382	249,972
Treman Park Clo	500,000	472,755	500,000	-	500,000
Turbine Engine	701,440	698,577	701,440	1,598	703,037
U S Treas Bond Strip	6,000,000	2,677,719	3,004,440	-	3,004,440
U S Treasury I P S	1,518,794	1,548,295	1,553,013	876	1,553,889
U S Treasury I P S	2,702,088	2,642,896	2,729,244	1,550	2,730,795
U S Treasury I P S	1,480,856	1,589,119	1,591,268	8,543	1,599,811
U S Treasury I P S	1,261,507	1,421,748	1,458,302	6,528	1,464,831
U S Treasury I P S	1,386,700	1,459,728	1,454,357	8,800	1,463,157
U S Treasury I P S	70,082	99,186	102,634	498	103,132
U S Treasury I P S	967,305	1,340,839	1,338,305	7,377	1,345,683
U S Treasury Note	1,738,000	1,732,387	1,759,256	2,545	1,761,801
US Foods Inc	450,000	450,000	461,250	294	461,544
Vector Group Ltd	500,000	529,500	520,625	14,639	535,264
Venture Cdo Ltd	250,000	245,938	244,773	817	245,590
Wells Fargo	4,992,914	503,241	491,552	7,240	498,792
Wells Fargo Tr	5,339,516	498,188	499,886	6,781	506,666
Whitehorse Viii	1,100,000	988,350	1,075,052	5,024	1,080,076
Willis Engine Secur	371,138	370,210	371,138	907	372,045
Wilton Re Finance	625,000	634,063	642,050	9,282	651,332
Wyndham Worldwide	-	-	-	561	561
Wynn Las Vegas	500,000	500,000	483,750	9,167	492,917
Yamana Gold Inc	940,000	904,687	924,772	21,456	946,228
Ziggurat Clo Ltd	700,000	655,200	612,962	6,392	619,354
Subtotal - Fixed Income	133,023,410	\$ 108,385,620	\$ 111,217,416	\$ 702,894	\$ 111,920,310

Holdings by Asset Class, Security Type, and Issuer as of June 30, 2016

Asset Class / Security Type / Issuer	Quantity Shares or Units	Cost	Market Value	Accrued Interest or Dividends	Mkt + Accrued
Real Estate Commingled Fund					
UBS Trumbull Property Fund	734	\$ 10,637,972	\$ 15,502,052	\$ -	\$ 15,502,052
UBS Growth & Income Fund	4,052	33,182,019	43,470,098	-	43,470,098
Dune Real Estate Partners	2,771,176	2,771,176	2,771,176	-	2,771,176
Subtotal - Real Estate Commingled	2,775,962	\$ 46,591,166	\$ 61,743,325	\$ -	\$ 61,743,325
Private Equity					
North Sky - PEP IV Fund		\$ 5,989,329	\$ 7,888,030	\$ -	\$ 7,888,030
Franklin Park Private Equity Fund		15,963,781	18,082,444	-	18,082,444
RWI Group - Ventures I Capital Ltd Ptnr		246,001	246,000	-	246,000
RWI Group - Ventures II Capital Ltd Ptnr		1,142,347	607,750	-	607,750
VIA Fund III		1,528,262	1,502,671	-	1,502,671
Subtotal - Private Equity	-	\$ 24,869,720	\$ 28,326,896	\$ -	\$ 28,326,896
Private Equity / Alternative					
TCW		\$ 4,950,000	\$ 4,881,198	\$ -	\$ 4,881,198
Parametric Def Eq Fund		\$ 19,500,000	\$ 20,292,392		\$ 20,292,392
Subtotal - Private Equity / Alternative	-	\$ 24,450,000	\$ 25,173,589	\$ -	\$ 25,173,589
Opportunistic					
Corvex		\$ 16,000,000	\$ 13,445,278	\$ -	\$ 13,445,278
Entrust		8,274,813	8,652,084	-	8,652,084
Subtotal - Opportunistic	-	\$ 24,274,813	\$ 22,097,362	\$ -	\$ 22,097,362
TOTAL FUND	161,530,343	\$ 836,563,489	\$ 956,110,682	\$ 931,430	\$ 957,042,113

ACTUARIAL SECTION

December 19, 2016

Ms. Jill E. Schurtz
Executive Director
St. Paul Teachers' Retirement Fund Association
1619 Dayton Avenue, Room 309
St. Paul, MN 55104-6206

Dear Ms. Schurtz:

We are pleased to present the report of the actuarial valuation of the St. Paul Teachers' Retirement Fund Association ("Fund") as of July 1, 2016. This report provides, among other things, the required annual contribution rate of the Fund for the Plan Year commencing July 1, 2016 and ending on June 30, 2017.

The valuation was based upon information furnished by the Fund staff, concerning Retirement Fund benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. Their efforts in furnishing the materials needed are gratefully acknowledged. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the Fund.

The report has been prepared at the request of the Fund's Board of Trustees in accordance with Section 356.215 of the Minnesota Statutes as well as the Standards for Actuarial Work established by the State of Minnesota Legislative Commission on Pensions and Retirement. To the best of our knowledge, this report is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practice. This report is intended for use by the Fund and those determined or approved by the Fund's Board of Trustees. This report may be provided to parties other than the Fund only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The required contribution rate of 22.44% of pay shown on page 5 was designed to comply with Minnesota Statutes. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Please note that given the importance of benefit security to any retirement system, we encourage all retirement systems to consider implementing funding programs that provide for contributions in excess of the levels listed in their valuation report.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section 4 of this report. This report does not include a robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

This report should not be relied on for any purpose other than the purpose described in this report. Determinations of financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the Legislative Commission on Pensions and Retirement (LCPR), and the Board of Trustees. These parties are responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the Actuarial Basis of this report. The Fund is solely responsible for communicating to GRS any changes required thereto.

GRS reviewed the investment return rate assumption in the 2012 Experience Study and recommended an assumed rate of return in the range of 7.04% to 7.98% per year. The impact of using an assumed rate of return of 7.5% was shown in the 2012 valuation report, and, at the Fund's request, updated estimates were provided to the Fund earlier this year. We commend the Fund for actively reviewing the investment return assumption, as the funded status of the plan may be overstated by the current prescribed assumptions. We recommend that the Fund continue to perform projections which include pessimistic scenarios such as investment return lower than assumed, longevity better than expected, etc.

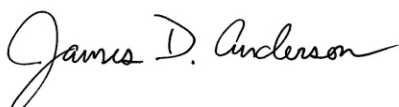
This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. Bonita J. Wurst and James D. Anderson are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

We will be pleased to review this report with you at your convenience.

Respectfully submitted,



Bonita J. Wurst, ASA, EA, FCA, MAAA



James D. Anderson, FSA, EA, MAAA

SUMMARY OF VALUATION RESULTS

(dollars in thousands)

	July 1, 2015	July 1, 2016
	<u>Valuation</u>	<u>Valuation</u>
A. CONTRIBUTIONS % OF PAYROLL (Table 11)		
1. Statutory Contributions - Chapter 354A	20.66%	21.52%
2. Required Contributions - Chapter 356	22.26%	22.44%
3. Sufficiency / (Deficiency)	(1.60%)	(0.92%)
B. FUNDING RATIOS		
1. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$ 999,736	\$ 1,007,360
b. Actuarial Accrued Liability (Table 9)	1,596,770	1,592,570
c. Funding Ratio	62.61%	63.25%
2. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$ 1,758,646	\$ 1,741,583
b. Current and Expected Future Benefit Obligations	1,833,521	1,815,411
c. Funding Ratio	95.92%	95.93%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	3,597	3,455
b. Projected Annual Earnings	\$ 280,488	\$ 271,781
c. Average Annual Earnings (Projected dollars)	\$ 73,704	\$ 76,094
d. Average Age	44.4	44.8
e. Average Service	12.1	12.7
f. Members on Leave of Absence	159	79
2. Others		
a. Service Retirements (Table 4)	3,277	3,363
b. Disability Retirements (Table 5)	33	32
c. Survivors (Table 6)	323	328
d. Deferred Retirements (Table 7)	1,892	2,020
e. Terminated Other Non-Vested (Table 7)	1,981	2,915
f. Total - Others	7,506	8,658
3. Grand Total (1.a + 1.f + 2.f)	11,262	12,192

ACCOUNTING BALANCE SHEET

AS OF JUNE 30, 2016

(dollars in thousands)

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	\$ 45,741	\$ 45,741
2. Investments		
a. Fixed Income	179,666	173,673
b. Equity	585,065	488,791
c. Real Estate	71,970	53,389
d. Alternative	75,598	75,518
3. Other Assets	<u>3,782</u>	<u>3,782</u>
B. TOTAL ASSETS	<u>\$ 961,822</u>	<u>\$ 840,894</u>
C. AMOUNTS CURRENTLY PAYABLE	\$ 2,156	\$ 2,156
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$ 178,135	\$ 178,135
2. Employer Reserves	<u>781,531</u>	<u>660,603</u>
3. Total Assets Available for Benefits	<u>\$ 959,666</u>	<u>\$ 838,738</u>
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	<u>\$ 961,822</u>	<u>\$ 840,894</u>
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D.3)	\$ 959,666	
2. Unrecognized Asset Returns		
a. June 30, 2016	\$ (77,451)	
b. June 30, 2015	(55,629)	
c. June 30, 2014	95,762	
d. June 30, 2013	46,697	
3. UAR Adjustment: $.80 * 2(a) + .60 * 2(b) + .40 * 2(c) + .20 * 2(d)$	<u>(47,694)</u>	
4. Actuarial Value of Assets: (F.1 - F.3)	<u>\$ 1,007,360</u>	

DERIVATION OF OTHER ASSETS *

Accounts Receivable

	<u>Market Value</u>
Employer Contribution	\$ 119
Employee Contribution	88
Service Purchases Receivable	36
Pensions Receivable	5
State Contributions	838
Real Estate Income Receivable	-
Commission Recapture Receivable	1
Interest Receivable	710
Dividend Receivable	222
Misc. Receivable	-
Escrow Funds receivable	0
Sale of Securities	<u>1,640</u>
Total Accounts Receivable	\$ 3,659
Fixed Assets	<u>123</u>
Total Other Assets	<u>\$ 3,782</u>

**Numbers may not add due to rounding.*

CHANGE(S) IN ASSETS AVAILABLE FOR BENEFITS
AS OF JUNE 30, 2016
(dollars in thousands)

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 1,014,969	\$ 866,990
B. OPERATING REVENUES		
1. Member Contributions	\$ 18,538	\$ 18,538
2. Employer Contributions	26,433	26,433
3. Supplemental Contributions	10,665	10,665
4. Reemployed Annuitant Employer Contributions	130	130
5. Investment Income	14,033	14,033
6. Investment Expenses	(3,624)	(3,624)
7. Net Realized Gain / (Loss)	18,569	18,117
8. Other	0	0
9. Net Change in Unrealized Gain / (Loss)	<u>(27,503)</u>	<u>0</u>
10. Total Operating Revenue	\$ 57,241	\$ 84,292
C. OPERATING EXPENSES		
1. Service Retirements	\$ 99,671	\$ 99,671
2. Disability Benefits	590	590
3. Survivor Benefits	10,906	10,906
4. Refunds	628	628
5. Administrative Expenses	<u>749</u>	<u>749</u>
6. Total Operating Expenses	\$ 112,544	\$ 112,544
D. OTHER CHANGES IN RESERVES	\$ 0	\$ 0
E. ASSETS AVAILABLE AT END OF PERIOD	<u>\$ 959,666</u>	<u>\$ 838,738</u>
F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN		
1. Average Balance		
(a) Assets available at BOY	\$ 1,014,969	
(b) Assets available at EOY	959,666	
(c) Average balance $\{[(a) + (b) - \text{Net Investment Income}] / 2\}$ {Net investment income: B.5+B.6+B.7+B.9}	\$ 986,580	
2. Expected Return: $.080 * F.1$		78,926
3. Actual Return		1,475
4. Current Year Gross Asset Gain/(Loss): F.3 - F.2		\$ (77,451)

ACTUARIAL BALANCE SHEET
AS OF JULY 1, 2016
(dollars in thousands)

A. CURRENT ASSETS (TABLE 1; Line F.4)	\$ 1,007,360
B. EXPECTED FUTURE ASSETS	
1. Present Value of Expected Future Statutory Supplemental Contributions*	\$ 511,382
2. Present Value of Future Normal Costs	222,841
3. Total Expected Future Assets	<u>\$ 734,223</u>
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS	<u>\$ 1,741,583</u>
D. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS	<u>\$ 1,815,411</u>
E. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (D - C)	\$ 73,828

* Includes the effect of scheduled employee and employer contribution increases and supplemental state contributions.

**DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
AND SUPPLEMENTAL CONTRIBUTION RATE
AS OF JULY 1, 2016
(dollars in thousands)**

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members*			
a. Retirement Benefits	\$ 615,473	\$ 160,949	\$ 454,524
b. Disability Benefits	\$ 13,101	\$ 5,054	\$ 8,047
c. Surviving Spouse and Child Benefits	\$ 8,753	\$ 2,992	\$ 5,761
d. Vested Withdrawals	\$ 34,576	\$ 39,925	\$ (5,349)
e. Refund Liability Due to Death or Withdrawal	\$ 2,874	\$ 13,921	\$ (11,047)
f. Total	<u>\$ 674,777</u>	<u>\$ 222,841</u>	<u>\$ 451,936</u>
2. Deferred Retirements	\$ 81,904	\$ 0	\$ 81,904
3. Former Members without Vested Rights	\$ 5,903	\$ 0	\$ 5,903
4. Annuitants	\$ 1,052,827	\$ 0	\$ 1,052,827
5. Total	<u><u>\$ 1,815,411</u></u>	<u><u>\$ 222,841</u></u>	<u><u>\$ 1,592,570</u></u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. Actuarial Accrued Liability (A.5)			\$ 1,592,570
2. Current Assets (Table 1; Line F.4)			<u>\$ 1,007,360</u>
3. Unfunded Actuarial Accrued Liability (B.1 - B.2)			<u><u>\$ 585,210</u></u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of June 30, 2042 [#]			\$ 4,399,371
2. Supplemental Contribution Rate (B.3 / C.1)			13.30%

*Includes members on leave of absence.

[#] Calculated using 8.0% annual investment return rate.

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
AS OF JULY 1, 2016
(dollars in thousands)

A. UAAL AT BEGINNING OF YEAR	\$ 597,034
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$ 26,345
2. Contributions	\$ (55,766)
3. Interest	\$ 46,556
4. Total	<u>\$ 17,135</u>
C. EXPECTED UAAL AT END OF YEAR (A + B.4)	\$ 614,169
D. INCREASE / (DECREASE) DUE TO ACTUARIAL LOSSES / (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Age and Service Retirements	\$ 305
2. Disability Retirements	(55)
3. Death-in-Service Benefits	(39)
4. Withdrawals	(4,434)
5. Salary Increases	(11,380)
6. Investment Income	14,084
7. Mortality of Annuitants	(3,021)
8. Other Items	(9,820)
9. Total	<u>\$ (14,360)</u>
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C + D.9)	\$ 599,809
F. CHANGE IN UAAL DUE TO PLAN AMENDMENTS	-
G. CHANGE IN UAAL DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	(14,599)
H. UAAL AT END OF YEAR (E + F + G)	<u>\$ 585,210</u>

DETERMINATION OF CONTRIBUTION SUFFICIENCY
AS OF JULY 1, 2016
(dollars in thousands)

	<u>Percent-of- Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	7.50%	\$ 20,393
2. Employer Contributions		
a. Regular	6.25%	16,999
b. Additional	3.84%	10,436
3. Supplemental Contribution		
a. 1996 Legislation	0.31%	838
b. 1997 Legislation	1.04%	2,827
c. 2014 Legislation	2.58%	7,000
4. Total	<u>21.52%</u>	<u>\$ 58,493</u>
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.53%	\$ 17,741
b. Disability Benefits	0.19%	511
c. Surviving Spouse and Child Benefits	0.11%	310
d. Vested Withdrawals	1.50%	4,070
e. Refund Liability Due to Death or Withdrawal	0.54%	1,466
f. Total	<u>8.87%</u>	<u>\$ 24,098</u>
2. Supplemental Contribution Amortization	13.30%	36,147
3. Allowance for Administrative Expenses	0.27%	734
4. Total	<u>22.44%</u>	<u>\$ 60,979</u>
C. CONTRIBUTION SUFFICIENCY / (DEFICIENCY) (A.4 - B.4)	(0.92%)	(2,486)
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:		\$ 271,781

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

I. ACTUARIAL COST METHOD

An Actuarial Cost Method is a set of techniques used by the actuary to develop contribution levels under a retirement plan. The Actuarial Cost Method used in this valuation for all purposes is the Entry Age Actuarial Cost Method. Under this Method, a Normal Cost is developed by amortizing the actuarial value of benefits expected to be received by each active participant (as a level percentage of pay) over the total working lifetime of that participant, from hire to termination. Years of Service for valuation purposes was provided by the Retirement Fund. Age as of the valuation date was calculated based on the dates of birth provided by the Retirement Fund. Entry Age for valuation purposes was calculated as the age on the valuation date minus the years of service on the valuation date.

To the extent that current assets and future Normal Costs do not support participants' expected future benefits, an Unfunded Actuarial Accrued liability ("UAAL") develops. The UAAL is amortized over the closed statutory amortization period ending June 30, 2042 using level percent-of-payroll assuming payroll increases of 4.00% per annum. The total contribution developed under this method is the sum of the Normal Cost and the payment toward the UAAL.

II. CURRENT ACTUARIAL ASSUMPTIONS

The assumptions were last updated for the July 1, 2013 valuation as a result of an experience study during the five-year period of July 1, 2006 to June 30, 2011, as well as a legislated change to the investment return assumption effective July 1, 2015.

A. Demographic Assumptions

Mortality:

1. Healthy Mortality*:

- a. Male: RP-2000 Combined Mortality Table for males projected with Scale AA to 2020 set back 1 year
- b. Female: RP-2000 Combined Mortality Table for females projected with Scale AA to 2020 set back 3 years

2. Disabled Mortality:

- a. Male: RP-2000 Disabled Life Mortality Table for males
- b. Female: RP-2000 Disabled Life Mortality Table for females

* Mortality rates were adjusted to include margin for future mortality improvement as described in the table name above.

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

Deaths Expressed as the Number of Occurrences per 10,000:

<u>Age</u>	Healthy Mortality		Disabled Mortality	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	2	1	226	75
21	2	1	226	75
22	2	1	226	75
23	3	1	226	75
24	3	1	226	75
25	3	1	226	75
26	3	1	226	75
27	3	1	226	75
28	3	2	226	75
29	4	2	226	75
30	4	2	226	75
31	4	2	226	75
32	5	2	226	75
33	5	2	226	75
34	6	3	226	75
35	6	3	226	75
36	7	3	226	75
37	8	4	226	75
38	8	4	226	75
39	9	4	226	75
40	9	4	226	75
41	9	5	226	75
42	10	5	226	75
43	10	5	226	75
44	10	6	226	75

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

Deaths Expressed as the Number of Occurrences per 10,000:

<u>Age</u>	<u>Healthy Mortality</u>		<u>Disabled Mortality</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
45	11	6	226	75
46	12	7	238	82
47	12	8	251	90
48	13	8	264	98
49	13	9	277	106
50	14	9	290	115
51	15	10	303	125
52	17	11	316	135
53	18	12	329	145
54	19	13	342	155
55	21	15	354	165
56	25	17	367	176
57	29	20	380	187
58	33	23	393	197
59	38	27	407	208
60	43	31	420	218
61	49	35	435	229
62	57	40	450	241
63	65	46	466	253
64	76	53	483	266
65	85	60	502	280
66	96	69	522	296
67	111	78	545	313
68	124	88	569	332
69	135	99	596	353

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

Rates of Disability:

Disability Expressed as the Number of Occurrences per 10,000:

<u>Age</u>	<u>Disability</u>	<u>Age</u>	<u>Disability</u>
20	2	45	5
21	2	46	5
22	2	47	5
23	2	48	5
24	2	49	5
25	2	50	10
26	2	51	10
27	2	52	10
28	2	53	10
29	2	54	10
30	3	55	20
31	3	56	20
32	3	57	20
33	3	58	20
34	3	59	20
35	3	60	40
36	3	61	40
37	3	62	40
38	3	63	40
39	3	64	40
40	3		
41	3		
42	3		
43	3		
44	3		

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

Rates of Termination:

Years of Service	Number of Terminations per 1,000 Active Members	
	Male	Female
0	400	400
1	180	180
2	140	140
3	100	100
4	60	67
5	50	59
6	45	51
7	41	43
8	37	35
9	33	31
10	29	27
11	25	23
12	20	19
13	20	15
14	20	13
15 & Over	20	13

Rates of Retirement:

Retirements Expressed as the Number of Occurrences per 10,000:

Age	Basic Members Eligible for Rule of 90 Provision	Basic Members Not Eligible for Rule of 90 Provision	Male Coordinated Members Eligible for Rule of 90 Provision	Female Coordinated Members Eligible for Rule of 90 Provision	Male Coordinated Members Not Eligible for Rule of 90 Provision	Female Coordinated Members Not Eligible for Rule of 90 Provision
55	5,000	800	3,500	3,500	700	500
56	5,000	1,300	3,500	3,500	700	500
57	4,000	1,300	3,500	3,500	700	500
58	4,000	1,800	3,500	3,500	700	500
59	3,500	1,800	3,500	3,500	700	500
60	3,500	2,000	3,500	3,500	1,100	800
61	3,500	2,000	3,500	3,500	1,500	1,100
62	3,500	4,000	3,500	3,500	1,900	1,400
63	3,500	4,000	3,500	3,500	2,300	1,900
64	4,000	4,000	3,500	4,000	2,700	2,400
65	5,000	5,000	3,500	5,000	3,100	3,500
66	3,000	5,000	3,500	5,000	3,500	3,500
67	3,000	5,000	3,500	5,000	3,500	3,500
68	3,000	5,000	3,500	5,000	3,500	3,500
69	3,000	5,000	3,500	5,000	3,500	3,500
70 & Over	10,000	10,000	10,000	10,000	10,000	10,000

ACTUARIAL METHODS AND ASSUMPTIONS AS OF JULY 1, 2016

B. Economic Assumptions

Investment Return Rate: 8.00%

Cost-of-Living Increases: 1.00% per year through 2054; 2.00% beginning 2055; 2.50% beginning 2066.

Wage Inflation: 4.00% per year

Future Salary Increases: In addition to the age-based rates shown below, during the first 15 years of employment, a service-based component of $0.20\% \times (15-T)$, where T is completed years of service, is included in the salary increase used.

Annual Salary Increases

Ultimate Rate of Annual Salary Increases		Ultimate Rate of Annual Salary Increases	
Age		Age	
<22	5.90%	45	4.75%
23	5.85	46	4.70
24	5.80	47	4.65
		48	4.60
25	5.75	49	4.55
26	5.70		
27	5.65	50	4.50
28	5.60	51	4.45
29	5.55	52	4.40
		53	4.35
30	5.50	54	4.30
31	5.45		
32	5.40	55	4.25
33	5.35	56	4.20
34	5.30	57	4.15
		58	4.10
35	5.25	59	4.05
36	5.20		
37	5.15	60 & Over	4.00
38	5.10		
39	5.05		
40	5.00		
41	4.95		
42	4.90		
43	4.85		
44	4.80		

Asset Value: The actuarial value of assets is smoothed by using a five-year average market value.

ACTUARIAL METHODS AND ASSUMPTIONS AS OF JULY 1, 2016

C. Other Assumptions

Marital Status:	It is assumed that 75% of male members and 60% of female members have an eligible spouse. The male spouse is assumed to be two years older than the female spouse. Married members are assumed to have two dependent children.
Deferred Benefit Commencement:	Basic Plan members who terminate vested are assumed to commence benefits at age 61. Coordinated Plan members are assumed to commence benefits at age 62. If the member is already past the assumed deferral age, the member is assumed to commence benefits one year from the valuation date.
Administrative Expenses:	Prior year administrative expenses (excluding investment expenses) are expressed as a percentage-of-payroll and then applied to current projected payroll.
Allowance for Combined Service Annuity:	7.00% load on liabilities for active members hired before July 1, 1989; 2.00% load on liabilities for active members hired after June 30, 1989; and 30.00% load on liabilities for former members. The LCPR Actuary has recently recommended changes to these assumptions, expected to be effective at a later date, pending approval.
Missing Salary and Salary Minimums:	Active members with reported salaries of \$100 or less were assumed to have the average non-zero active salary. Active members with salaries less than those reported at the prior valuation date are valued using their prior salary amount. Active members who have been hired within one year of the valuation date have had their pay annualized by dividing by months of service credited, not to exceed the average non-zero active salary. For members on leave of absence at valuation date who were not on leave at the prior valuation date, the prior year's valuation pay was used.
Missing Data for Deferred Vested Members:	Deferred vested members without a reported benefit and without salary information were assumed to have a final average salary of \$40,000.
Decrement Timing:	Retirement and Termination: end of valuation year – consistent with retirements and terminations occurring at the end of the school year. Death and Disability: middle of valuation year.

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF JULY 1, 2016

Valuation of Future Post-Retirement Benefit Increases:	If the plan has reached the funding ratio threshold required to pay a different benefit increase, Minnesota Statutes require the benefit increase rate to be reflected in the liability calculations. If the plan has not yet reached the funding ratio threshold required to pay a benefit increase, Minnesota Statutes require a projection to be performed to determine the expected attainment of the funding ratio thresholds, and the expected payment of benefit increases must be reflected in the liability calculations.
Supplemental Contributions:	1996 legislation provides for a variable amortization aid contribution paid annually on July 15. We assumed the annual amortization aid contribution will equal \$838,000, which was the actual contribution for the most recent fiscal year. Additionally, according to 1997 legislation, annual supplemental contributions currently equal to \$2,827,000 are scheduled to be paid on October 1. According to 2014 legislation, the State of Minnesota will make annual additional supplemental contributions of \$7,000,000 on October 1. The contributions described herein will continue until the plan is 100% funded or until June 30, 2042, whichever occurs earlier.
Projected Annual Payroll Calculation:	The census data as of July 1, 2016 reflects retirements and terminations occurring during the months of May and June; however, it does not necessarily reflect the replacements hired to fill their positions who may have hire dates in August and September. We assumed that May and June retirements are replaced by members coming in at the B.A. entry salary level of \$44,759; and the Projected Annual Payroll for the fiscal year ending June 30, 2017 includes this replacement salary amount.

APPENDIX – *State Auditor’s Report*

STATE OF MINNESOTA

Office of the State Auditor



Rebecca Otto
State Auditor

The Office of the State Auditor audits the financial statements of the SPTRFA. However, their report for the most recent fiscal year was still pending completion at the time this report went to print. The full report will be published on the website of the Minnesota Office of the State Auditor <http://www.osa.state.mn.us>

ST. PAUL TEACHERS' RETIREMENT FUND ASSOCIATION
ST. PAUL, MINNESOTA

FOR THE YEAR ENDED JUNE 30, 2016