

STATE OF WISCONSIN

SENATE CHAIR
Alberta Darling

317 East, State Capitol
P.O. Box 7882
Madison, WI 53707-7882
Phone: (608) 266-5830



ASSEMBLY CHAIR
John Nygren

308 East, State Capitol
P.O. Box 8953
Madison, WI 53708-8953
Phone: (608) 266-2343

JOINT COMMITTEE ON FINANCE

MEMORANDUM

To: Members
Joint Committee on Finance

From: Senator Alberta Darling
Representative John Nygren

Date: November 18, 2019

Re: SWIB Report to JFC

Attached is a report on all expenses charged to the trust funds under management during the prior quarter and on the number of full-time equivalent positions created or abolished during the quarter from the State of Wisconsin Investment Board, pursuant to s. 25.17(13m), Stats.

This report is being provided for your information only. No action by the Committee is required. Please feel free to contact us if you have any questions.

Attachments

AD:JN:jm



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St. Finance

November 15, 2019

Senator Alberta Darling, Co-Chair
Joint Committee on Finance
P.O. Box 7882
Madison, WI 53707-7882

Representative John Nygren, Co-Chair
Joint Committee on Finance
P.O. Box 8953
Madison, WI 53708-8953

Senator Robert Cowles, Co-Chair
Joint Legislative Audit Committee
P.O. Box 7882
Madison, WI 53707-7882

Representative Samantha Kerkman, Co-Chair
Joint Legislative Audit Committee
P.O. Box 8952
Madison, WI 53708-8952

Secretary Joel Brennan
Department of Administration
101 East Wilson Street
P.O. Box 7864
Madison, WI 53707-7864

Dear Senator Darling, Senator Cowles, Representative Nygren, Representative Kerkman, and Secretary Brennan:

State statutes require the State of Wisconsin Investment Board (SWIB) to submit a report on all expenses charged to the trust funds under management during the prior quarter and on the number of full-time equivalent positions created or abolished during the quarter¹. The information contained in this report is for the quarter ending September 30, 2019.

Total Cost of Management – 3rd Quarter 2019

SWIB Cost of Management Summary	4th Quarter 2018 Cost	1st Quarter 2019 Cost	2nd Quarter 2019 Cost	3rd Quarter 2019 Cost	One-year Ending 9/30/2019	% of Costs
Internal Operating Costs						
Agency Operating Expenses	\$ 7,774,386	\$ 20,795,954	\$ 10,992,488	\$ 9,064,132	\$ 48,626,960	10.4%
Custodial, Investment Operations & Banking Fees	1,283,191	1,476,320	1,449,204	1,523,536	5,732,251	1.2%
Legal Fees	672,980	126,094	366,805	411,955	1,577,834	0.3%
Investment Research & Consulting Fees	8,533,239	6,972,181	9,806,277	8,180,737	33,492,434	7.1%
Total Internal Operating Costs	\$ 18,263,796	\$ 29,370,649	\$ 22,614,774	\$ 19,180,360	\$ 89,429,479	19.1%
External Management Fees						
Real Estate Advisory/Asset Management	\$ 13,033,794	\$ 13,080,095	\$ 13,036,219	\$ 13,118,881	\$ 52,268,989	11.1%
Private Equity Management	37,166,487	36,978,609	42,510,463	40,390,972	157,046,531	33.5%
Public Market Separate Accounts	10,076,829	6,634,855	14,021,583	8,090,740	38,824,007	8.3%
Public Market Commingled Accounts	23,138,702	36,107,528	39,988,829	31,649,108	130,884,167	27.9%
Total External Management Fees	\$ 83,415,812	\$ 92,801,087	\$ 109,557,094	\$ 93,249,701	\$ 379,023,694	80.8%
Securities Lending Agent Fees				\$ 544,279	\$ 544,279	0.1%
Total Cost of Management	\$ 101,679,608	\$ 122,171,636	\$ 132,171,868	\$ 112,974,340	\$ 468,997,452	
Average Assets Under Management (in billions)	\$ 110.3	\$ 118.5	\$ 122.2	\$ 122.8	\$ 118.5	
Cost in Basis Points (all trust funds)					39.6	

¹Wisconsin Statutes Section 25.17 (13m): All investment-related expenses for the WRS Trust Funds, State Investment Fund, State Life Insurance Fund, Historical Society Endowment Fund, Injured Patients and Families Compensation Fund and UW Trust Fund. Investment transaction expenses, such as trading commissions and interest expense, are included in gross investment returns, and therefore not included in this report.

SWIB's total costs, including both internal operating and external management costs, are charged to the trust funds under management. Over a one-year period ending September 30, 2019, SWIB's total cost of management was 39.6 basis points (0.40%) or 40 cents for every \$100 managed. It is important to consider costs in the context of value-added investment returns. For example, over the past five years ending 12/31/2018, SWIB earned \$223.6 million over the Core Trust Fund's investment benchmarks and after costs.

To reduce external asset management costs and increase net investment returns, SWIB continues to build internal resources to be able to manage assets internally where it makes sense to do so. For example, as shown in the table below, the cost of external asset management is multiples higher than internal management for the same asset classes.

Internal vs External Investment Management

Portfolio	Cost of External Over Internal Management
Active Management	
Global Large Cap Equity	4.0x
US Small Cap Equity	3.8x
US Fixed Income	1.9x
Global Fixed Income	4.6x
Passive Management	
US Large Cap Equity	1.3x
International (EAFE) Equity	2.8x
Fixed Income - Inflation Indexed	2.8x

External management costs are 1.3 – 4.6 times the cost to manage these portfolios internally. Source: CEM Benchmarking, Inc.

For the year ending September 30, 2019, external investment management fees including securities lending agent fees represented 80.9% of SWIB's total costs of management and 45.8% of assets under management, while SWIB's internal operating expenses represented 19.1% of costs and 54.2% of assets (see Attachment A).

Assets Under Management & FTE		
	6/30/2019	9/30/2019
Internal Management	55.3%	54.2%
External Management	44.7%	45.8%
SWIB Positions -- FTE	233.00	233.00
Total SWIB Positions	233.00	233.00

Attachment B and C provides details of services and related quarterly costs.

Internal operating costs include salary and fringe benefits for internal staff, technology, research and market data services, asset custody fees, legal services, and investment consulting. External management fees make up the largest component of the trust funds' costs. This category includes fees paid to asset managers for securities lending services, public market, private market, and real estate asset management.

As new investment strategies are implemented and as markets change, SWIB will continue to evaluate the most efficient means to manage the trust fund assets. We hope this report provides a comprehensive representation of the costs SWIB incurs to manage the assets of the trust funds including the Wisconsin Retirement System. Please contact me if you have any questions or comments about the report.

Sincerely,



David Villa
Executive Director/Chief Investment Officer

Attachments

cc: Members, Joint Committee on Finance
Members, Joint Committee on Audit
Robert Lang, Legislative Fiscal Bureau
Joe Chrisman, Legislative Audit Bureau

Total Assets Under Management

Wisconsin Retirement System (WRS)	12/31/2018		3/31/2019		6/30/2019		9/30/2019	
	Amount (in millions)	Percent						
Internally Managed	\$56,876	56.5%	\$61,416	56.9%	\$58,582	52.7%	\$57,145	51.3%
Externally Managed Dedicated Accounts	18,004	17.9%	19,777	18.3%	25,816	23.2%	26,290	23.6%
Externally Managed Commingled Accounts	25,711	25.6%	26,717	24.8%	26,818	24.1%	28,049	25.2%
1. Passive Index Funds	6,600	6.6%	6,810	6.3%	7,410	6.7%	8,126	7.3%
2. Enhanced Index Commingled Funds	0	0.0%	0	0.0%	0	0.0%	0	0.0%
3. Limited Partnerships	13,591	13.5%	16,022	14.8%	13,720	12.3%	14,247	12.8%
4. Actively Managed Commingled Accounts	5,520	5.5%	3,885	3.6%	5,688	5.1%	5,676	5.1%
TOTAL WRS Assets	\$100,591	100.0%	\$107,910	100.0%	\$111,217	100.0%	\$111,485	100.0%

State Investment Fund - Internally Managed	\$7,836		\$8,574		\$8,894		\$9,313	
Various Funds Internally Managed	\$116		\$121		\$125		\$121	
Various Funds Externally Managed	\$1,764		\$1,865		\$1,926		\$1,962	

Total Assets Under Management	\$110,308		\$118,470		\$122,162		\$122,881	
Total Internal Management	\$64,828	58.8%	\$70,111	59.2%	\$67,601	55.3%	\$66,580	54.2%
Total External Management	\$45,480	41.2%	\$48,359	40.8%	\$54,561	44.7%	\$56,301	45.8%

STATE OF WISCONSIN INVESTMENT BOARD
Expenses for All Funds Under Management
Quarter Ending September 30, 2019

ATTACHMENT B

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
<u>Internal Operating Expenses</u>		
Staff Compensation	Staff Compensation	6,357,510
Fringe Benefits	Fringe Benefits	1,524,586
Equipment, Supplies & Services	General Supplies & Services	1,182,036
Total Internal Operating Expenses ***		\$ 9,064,132
<u>Custodial, Investment Operations and Banking Fees</u>		
Bank of America Merrill Lynch	Banking Fees	2,776
Bankers Bank	Custodial and Banking Fees	5,000
BNY Mellon Asset Servicing - Custody	Master Custody Services	566,169
BNY Mellon Asset Servicing - Investment Operations	Investment Operating Services	949,668
US Bank	Banking Fees	(77)
Total Custodial, Investment Operations and Banking Fees		\$ 1,523,536
<u>Legal Fees</u>		
Adams Street Partners, LLC		6,396
Chapman & Cutler LLP	Legal Work for Investment Strategies	111,149
Cox Castle & Nicholson LLP	Legal Work for Investment Strategies	4,446
DLA Piper LLP (US)	Legal Work for Investment Strategies	71,934
Eversheds Sutherland (US) LLP	Legal Work for Investment Strategies	2,410
Faegre Baker Daniels LLP	Legal Work for Investment Strategies	48,770
Godfrey & Kahn SC	Legal Work for Investment Strategies	19,475
Proskauer Rose LLP	Legal Work for Investment Strategies	10,687
Purrington Moody Welll LLP	Legal Work for Investment Strategies	32,518
Quarles & Brady	Legal Work for Investment Strategies	64,196
Reinhart Boerner Van Deuren SC	Legal Work for Investment Strategies	4,151
Shearman & Sterling LLP	Legal Work for Investment Strategies	31,368
West & Dunn, LLC	Legal Work for Investment Strategies	4,455
Total Legal Fees		\$ 411,955
<u>Investment Counsel</u>		
ABG Sundal Collier Inc	Investment Research Services	32,500
Adeptyx Consulting	Investment Consulting Services	373,460
Advent Software Inc	Research Management System	53,856
Akin Gump Strauss Hauer & Feld LLP	Investment Consulting Services	14,755
Aksia LLC	Hedge Fund Investment Consulting	199,765
Ananth Seshadri	Economic Consulting Services	92,500
Arb Journal	Regulatory Research & Analysis	22,000
Babelfish Analytics	Research and Data Services	49,900
BCA Research Inc	Global & Domestic Fixed Income Strategy Research	26,250
Berenberg	Investment Research Services	53,500
Bloomberg Finance LP	Market, Company, Industry & Benchmark Information	883,603
BNY Mellon Asset Servicing - Eagle/Pace	Investment Consulting Services	4,700
Brainmaven Corp	Investment Consulting Services	4,000
BTIG, LLC	Investment Research Services	4,500
BWG Strategy LLC	Investment Research Services	20,000
C&A Consulting	Investment Consulting Services	(6,240)
Callan Associates Inc	Investment Consulting & Performance Benchmarking	6,250
Cantor Fitzgerald Investment Advisors, L.P.	Investment Research Services	10,000
Capital Economics LTD	Market Research Services	47,250
CEM Benchmarking Inc	Investment Cost Analysis	75,000
CFRA Research	Investment Research Services	21,000
Charles River System Inc	Portfolio Management Trading Software & Services	337,340
Citisoft Inc	Investment Consulting Services	464,095
Consensus Economics Inc	Investment Research Services	31,210
CoStar Portfolio Strategy	Real Estate Consulting & Research Services	28,738
Credit Industriel Et Commercial	Investment Research Services	3,000
CreditSights	Credit Assessments	15,000
Cross Current Research LLC	Healthcare Sector Research	11,000
Depository Trust and Clearing Corp	Research and Data Services	3,000
Dow Jones News Service	Company and Industry News Services	17,811
DTCC ITP LLC	Trade Settlement Service	771
EDM Council	Investment Data & Research	2,750
EFront Financial Solutions Inc	Real Estate Portfolio Management Services	478,853
Ernst & Young LLP	Investment Consulting Services	167,086
Euromonitor International	Research and Data Services	17,179
Exchange Analytics Inc	Futures & Swaps Trading Regulation Training	3,000
FactSet Research Systems Inc	Financial & Economic Database	803,304
Fitch Solutions Inc	Credit Rating Services	42,000
Fusion Trading	Research and Data Services	67
Gartner Inc	Technology Sector Research	92,000
Global Financial Data Inc	Research and Data Services	30,000
Green Street Advisor	Real Estate Analytics	16,250

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
Guggenheim Securities LLC	Investment Research Services	14,300
Haver Analytics	Global Macroeconomic Research	21,200
Ice Data LP	Fixed Income Indices	6,250
In Focus Information LLC	Private Placement Investment Research	1,400
InsiderScore LLC	Investment Research & Analytics	30,000
Institutional Shareholder Services Inc	Proxy Voting Analysis	30,899
International Swaps and Derivatives Assn	Derivative Industry Research	1,000
IPC Systems Inc	Trading Telecommunication System	7,595
ITG Solutions Network Inc	Trading Transaction Cost Analysis	7,500
JW Michaels & Co	Investment Recruitment Consulting	7,000
Keystone Consulting Inc	Investment Information Technology Consulting Services	197,287
LionPoint Group	Investment Consulting Services	72,223
Macquarie Capital (USA) Inc	Investment Research Services	17,500
Markit NA	MarketEDM Software & Implementation Services	159,931
Marmadon Holdings LLC	Investment Research Services	(450)
Matrix iDM, LLC	Investment Consulting Services	54,580
McLagan Partners Inc	Investment Compensation Data and Analysis	10,000
Meketa Investment Group	Public Markets External Manager Consultant	61,250
Merrill Lynch (Bank of America)	Investment Research Services	112,550
Money-Media Inc	Research and Data Services	4,610
Moodys Analytics	Economic, Currency & Bond Analysis	43,709
Morningstar Inc	Industrial Sector Market Research & Analysis	12,000
MSCI Inc - Risk Metrics Solutions	Research and Data Services	356,733
Ned Davis Research Inc	Investment Research Services	1,650
NEPC LLC	Investment Consulting Services	50,000
Novus Partners Inc	Profit & Loss Analytics System	47,025
Nuware Technology Corp	Investment Information Technology Consulting Services	227,285
NYSE Market Inc	New York Stock Exchange Data	6,327
NYU Stern School of Business	Research and Data Services	1,000
Oppenheimer & Co Inc	Investment Research Services	19,200
OptionMetrics	Investment Data Service	7,875
Options Price Reporting Authority	Quote System for Options Market	2,205
Pacific Pension & Investment Institute	Access to Investment Research	12,000
Pac-Invest	Research and Data Services	10,850
Penseira Transition Management LLC	Transition Reporting Fee Service	40,000
PerTrac (Strategic Financial Solutions LLC)	Fund of Funds Analytical Platform	52,627
Phil Erlanger Research Co., Inc.	Investment Research Services	2,000
Proxy Insight	Shareholder Voting Data	9,950
Refinitiv	Research Pricing Services	6,716
Russell Investment Group	Index Data	17,003
S&P Dow Jones Indices	Research and Data Services	50,310
S&P Global Market Intelligence	Investment Data	61,250
Sanford C. Bernstein & Co., LLC	Investment Research Services	114,800
Sanford C. Bernstein (Hong Kong) Limited	Investment Research Services	7,300
Santander Investment Securities Inc.	Investment Research Services	18,700
Seaport Global Securities LLC	Research and Data Services	2,540
Sharp Decisions Inc	Investment Information Technology Consulting Services	383,985
Simmons & Simmons	Global Regulatory Services	6,515
SMBC Nikko Securities America, Inc.	Investment Research Services	2,000
Standard & Poors	Industry & Corporate Research	36,543
StepStone Group	Private Equity Consulting Services	404,991
StepStone Group Real Estate	Real Estate Consulting Services	53,750
Stradegi Solutions, Inc.	Investment Consulting Services	33,021
SunTrust Robinson Humphrey Inc	Investment Research Services	25,400
SystemsAccountants	Investment Information Technology Consulting Services	24,000
Telsey Advisory Group	Consumer Sector Research	30,000
The Bachrach Group	Investment Consulting Services	204,494
The Financial Times Limited	Investment Research Services	674
The Finlay Group	Investment Consulting Services	371,279
Toronto Stock Exchange	Market Data	8,517
Trade Alert LLC	Market Data	900
TradeWeb	On-Line Fixed Income Trading Services	9,000
Unit4 Business Software Inc	Financial & Administration Services System	54,880
Verus Advisory Inc	Benchmarking Consulting Services	42,000
Vistra Trust Company Limited	Investment Consulting Services	997
Wall Street Journal	Investment Research & Information	31
Wolfe Trahan	Transportation and Macro Economic Research	43,750
Wolverine Execution Services LLC	Options Trading Platform	927
WorldBridge Partners, Inc.	Investment Recruitment Consulting	92,500
Total Investment Counsel		\$ 8,180,737
Real Estate Management Fees		
Aiclon Ventures	Real Estate Management Fees	126,863
AmCap Inc	Real Estate Management Fees	325,109
Beacon Capital Partners	Real Estate Management Fees	999,420
Blackrock	Real Estate Management Fees	2,350
Blackstone Real Estate Advisors	Real Estate Management Fees	2,288,626
Blue Moon Capital Partners	Real Estate Management Fees	272,649
Blue Vista Capital Management	Real Estate Management Fees	185,930

EXPENSE CATEGORY

SERVICE PROVIDED

EXPENSES

Bristol Group	Real Estate Management Fees	372,177
Buchanan Street Capital Partners	Real Estate Management Fees	152,007
Callahan Capital Partners	Real Estate Management Fees	167,302
Carson Companies	Real Estate Management Fees	17,227
Casa Partners	Real Estate Management Fees	74,403
CBRE	Real Estate Management Fees	102,077
C-III Capital Partners	Real Estate Management Fees	14,113
Cornerstone Real Estate Advisers	Real Estate Management Fees	161,763
Crossings at Danada	Real Estate Management Fees	182,617
Essex Property Trust	Real Estate Management Fees	418,095
Four Seasons	Real Estate Management Fees	140,897
FPA Multifamily Core Plus	Real Estate Management Fees	237,227
Harbor Beach Capital, LLC	Real Estate Management Fees	201,202
Hawkeye Partners	Real Estate Management Fees	143,521
Heitman	Real Estate Management Fees	601,510
Henderson Global Investors	Real Estate Management Fees	336,756
Hlgh Street Realty Company LLC	Real Estate Management Fees	90,067
Hudson Advisors	Real Estate Management Fees	111,145
J.P. Morgan Asset Management	Real Estate Management Fees	545,768
Lowe Enterprises Investors	Real Estate Management Fees	13,148
Morgan Stanley	Real Estate Management Fees	44,882
Normandy Real Estate Partners	Real Estate Management Fees	194,375
O'Connor Capital Partners	Real Estate Management Fees	237,508
Penwood	Real Estate Management Fees	437,666
Prologis	Real Estate Management Fees	235,360
Prudential Global Investment Management (PGIM)	Real Estate Management Fees	808,285
Realtorm Global Asset Management	Real Estate Management Fees	316,410
Rockpoint Group	Real Estate Management Fees	28,628
RREEF	Real Estate Management Fees	436,768
Security Capital	Real Estate Management Fees	416,678
Teachers Insurance and Annuity Association of America	Real Estate Management Fees	308,541
Torchlight Investors	Real Estate Management Fees	314,094
UBS Realty Investors	Real Estate Management Fees	446,335
Wesco	Real Estate Management Fees	200,125
Westbrook Partners	Real Estate Management Fees	400,267
Total Real Estate Management*		\$ 13,118,881

Private Equity

Abor Group	Private Equity Management Fees	300,000
Advent International	Private Equity Management Fees	908,455
Alchemy Partners	Private Equity Management Fees	98,224
Altaris Capital Partners	Private Equity Management Fees	388,757
American Securities	Private Equity Management Fees	817,260
Andressen Horowitz	Private Equity Management Fees	16,610
Apollo Management	Private Equity Management Fees	220,091
Arbor Investments	Private Equity Management Fees	47,173
Ares Management	Private Equity Management Fees	559,531
Ascribe Capital LLC	Private Equity Management Fees	105,870
Atlas Holdings	Private Equity Management Fees	389,645
Baird Venture Partners	Private Equity Management Fees	75,000
Benefit Street Partners	Private Equity Management Fees	286,054
Berkshire Property Advisors	Private Equity Management Fees	386,741
Blackstone Real Estate Advisors	Private Equity Management Fees	419,911
Bookend Capital Partners	Private Equity Management Fees	108,242
Bridgepoint Capital	Private Equity Management Fees	549,809
Callius Mezzanine	Private Equity Management Fees	144,980
CapVest Private Equity	Private Equity Management Fees	184,213
Centerbridge Partners	Private Equity Management Fees	700,014
Charlesbank Capital Partners	Private Equity Management Fees	648,908
Chequers Capital	Private Equity Management Fees	258,369
Clearlake Capital Group	Private Equity Management Fees	592,024
Clearview Capital LLC	Private Equity Management Fees	448,361
Clessidra SGR SPA	Private Equity Management Fees	5,918
Coller Capital	Private Equity Management Fees	450,134
Cortec Group	Private Equity Management Fees	297,090
Craft Ventures LP	Private Equity Management Fees	514,608
Cressey & Company	Private Equity Management Fees	516,667
CVC Capital Partners	Private Equity Management Fees	597,646
ECM Equity Capital Management GmbH	Private Equity Management Fees	85,281
EnCap Investments	Private Equity Management Fees	385,908
EQT Partners	Private Equity Management Fees	395,811
Excellere Capital Management	Private Equity Management Fees	467,877
Flagship Pioneering	Private Equity Management Fees	85,255
Flexpoint Ford	Private Equity Management Fees	149,444
Fortissimo Capital	Private Equity Management Fees	175,797
FountainVest Partners	Private Equity Management Fees	371,720
German Equity Partners	Private Equity Management Fees	222,835
Glide	Private Equity Management Fees	473,943
Glendon Capital Management	Private Equity Management Fees	206,090

EXPENSE CATEGORY

SERVICE PROVIDED

EXPENSES

Gores Group	Private Equity Management Fees	34,164
Graphite Capital Management	Private Equity Management Fees	(7,721)
GSCO Capital Partners	Private Equity Management Fees	730,886
GTCR	Private Equity Management Fees	1,033,723
Harvest Partners	Private Equity Management Fees	471,713
Hellman & Friedman Investors	Private Equity Management Fees	876,230
HgCapital	Private Equity Management Fees	285,712
Hudson Advisors	Private Equity Management Fees	32,232
Inflexion Private Equity Partners LLP	Private Equity Management Fees	755,959
Insight Equity	Private Equity Management Fees	98,376
InvestIndustrial	Private Equity Management Fees	152,455
JMI Equity	Private Equity Management Fees	573,415
Kohlberg Kravis Roberts & Co	Private Equity Management Fees	277,406
KPS Capital Partners	Private Equity Management Fees	128,000
Lake Pacific Partners	Private Equity Management Fees	237,600
Leonard Green & Partners	Private Equity Management Fees	584,857
Lightbay Capital	Private Equity Management Fees	250,000
Lindsay, Goldberg & Bessemer	Private Equity Management Fees	281,250
Merit Capital Partners	Private Equity Management Fees	446,997
Montefiore Investment	Private Equity Management Fees	151,032
Morgan Stanley	Private Equity Management Fees	105,305
New Capital Partners	Private Equity Management Fees	125,000
Oaktree Capital Management	Private Equity Management Fees	192,472
Old Lane	Private Equity Management Fees	18,838
ParkerGale Capital	Private Equity Management Fees	157,500
Patria Investments	Private Equity Management Fees	252,065
Peninsula Capital Partners LLC	Private Equity Management Fees	271,739
Platte River Equity	Private Equity Management Fees	182,250
Private Equity Solutions	Private Equity Management Fees	297,786
Providence Equity Partners, Inc.	Private Equity Management Fees	1,982,553
Quantum Energy Partners	Private Equity Management Fees	218,750
Resource Capital Funds	Private Equity Management Fees	137,468
Ridgmont Partners	Private Equity Management Fees	646,183
Riverstone Holdings	Private Equity Management Fees	497,467
SAIF Partners	Private Equity Management Fees	129,874
Segulah	Private Equity Management Fees	5,526
Sentinel Real Estate Corporation	Private Equity Management Fees	624,998
Shamrock Capital Advisors	Private Equity Management Fees	(500,000)
Sheridan Production Partners	Private Equity Management Fees	139,835
StepStone Group	Private Equity Management Fees	75,869
Sterling Group	Private Equity Management Fees	532,374
Stone Point Capital LLC	Private Equity Management Fees	733,710
The Jordan Company LP	Private Equity Management Fees	461,210
Thomas Bravo Fund	Private Equity Management Fees	281,250
Tower Arch Capital	Private Equity Management Fees	150,000
TowerBrook Investors	Private Equity Management Fees	318,668
TPG Capital	Private Equity Management Fees	1,417,141
Triton	Private Equity Management Fees	294,838
TSG Capital Partners	Private Equity Management Fees	750,000
TSG Consumer Partners LLC	Private Equity Management Fees	963,945
Update Partners	Private Equity Management Fees	140,625
Venture Capital****	Private Equity Management Fees	3,280,491
Vinci Partners	Private Equity Management Fees	101,452
Vista Equity Partners	Private Equity Management Fees	1,600,816
Warburg Pincus	Private Equity Management Fees	1,204,649
Warwick Partners	Private Equity Management Fees	250,000
Waterland Private Equity	Private Equity Management Fees	475,289
Wayzata Investment Partners	Private Equity Management Fees	65,957
Wind Point Partners	Private Equity Management Fees	333,333
WP Global Partners Inc	Private Equity Management Fees	27,522
Total Private Equity Management**		\$ 40,390,972

Commingled Account Public Market Management Fees

AQR Capital	Public Market Management Fees	243,580
Arrowgrass Capital	Public Market Management Fees	173,445
Avenue Capital Group	Public Market Management Fees	245,961
BFAM Asian Opportunities Fund	Public Market Management Fees	487,107
Blackrock	Public Market Management Fees	612,777
Blue Mountain Capital Management	Public Market Management Fees	483,767
Bridgewater Associates	Public Market Management Fees	3,057,902
Capula Investment Management	Public Market Management Fees	1,516,131
Davidson Kempner Capital Management	Public Market Management Fees	1,224,961
DE Shaw & Co	Public Market Management Fees	5,915,326
Dorsal Capital Partners	Public Market Management Fees	1,397,409
Dyal Capital Partners	Public Market Management Fees	529,315
Efficient	Public Market Management Fees	1,902,676
Exoduspoint Capital Management	Public Market Management Fees	331,087
Graham Capital Management	Public Market Management Fees	940,376
Graticule Asset Management Asia	Public Market Management Fees	900,099

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
Highbridge Capital Management	Public Market Management Fees	(856,149)
Holocene Advisors Fund LP	Public Market Management Fees	2,920,016
Hudson Structured Capital Management	Public Market Management Fees	4,183,115
King Street Capital Management	Public Market Management Fees	93,385
LibreMax Capital, LLC	Public Market Management Fees	935,479
Marshall Wace	Public Market Management Fees	2,214,120
Nephilla Capital Ltd	Public Market Management Fees	398,569
Pharo	Public Market Management Fees	163,515
PIMCO	Public Market Management Fees	683,041
PSquared Asset Management	Public Market Management Fees	1,057,231
Senator Global Opportunity	Public Market Management Fees	245,446
Standish Mellon	Cash Management	67,900
Stone Milliner Asset Management	Public Market Management Fees	385,625
TCW	Public Market Management Fees	481,001
Two Sigma	Public Market Management Fees	(1,296,329)
Wellington Trust Company	Public Market Management Fees	11,225
Total Commingled Account Public Market Management Fees		\$ 31,649,108
<u>Separate Account Public Market Management Fees</u>		
Acadian Asset Management	Public Market Management Fees	1,150,278
Alliance Bernstein	Public Market Management Fees	(762,221)
Blackrock	Public Market Management Fees	1,283,422
Dodge and Cox	Public Market Management Fees	524,170
Fidelity Investments	Public Market Management Fees	1,120,023
Longview Partners	Public Market Management Fees	1,842,675
Loomis Sayles & Co	Public Market Management Fees	20,163
Parametric	Public Market Management Fees	384,328
Prudential Global Investment Management (PGIM)	Public Market Management Fees	255,519
Wellington Trust Company	Public Market Management Fees	2,272,363
Total Separate Account Public Market Management Fees		\$ 8,090,740
<u>Securities Lending Agent Fees</u>		
BNY Mellon Asset Servicing	Securities Lending Agent Fees	544,279
Total Securities Lending Agent Fees		\$ 544,279
Total Quarterly Charges to Funds		\$ 112,974,340

*Fees paid to fund managers are established as percentage of the capital committed. As assets in a fund are sold, the management fees paid are typically reimbursed from the profits of the fund.

**Expenses for private equity management fees are estimated and adjusted annually based upon committed capital or assets under management, determined by management contract terms. Total committed capital includes management fees. All capital contributions to the limited partnership must first be returned to the limited partners before any incentive fees are paid to the general partner.

***All costs reported are on an accrual basis except for internal operating costs which are on a cash basis of accounting. Negative expense amounts are due to accrual adjustments and/or other miscellaneous adjustments.

****Pursuant to Wisconsin Statute Section 25.184 Venture Capital investments are recorded in aggregate.

Explanations of Expenses

Internal Operating Expenses

Internal operating expenses consist primarily of staff compensation and fringe benefits. SWIB employs a staff of professional investment and support staff to manage the trust fund assets. Other internal operating expenses consist of office equipment, supplies, business travel, information technology equipment and services, and general services.

Custodial & Banking Fees

Wisconsin Certificate of Deposit Program: Under a contract with SWIB, Bankers' Bank administers the program under which the State Investment Fund (SIF) purchases certificates of deposit from Wisconsin-based banks and thrifts. Most administrative costs are paid by the participating banks. SWIB's expenses help underwrite other administrative costs, such as insurance that SWIB requires to be purchased.

BNY Mellon: Provides master custody services (safekeeping of assets, income collection, valuations and accounting) for public and private domestic and foreign securities in the Wisconsin Retirement System (WRS), the SIF, and the other separately managed trust funds. In addition, SWIB receives performance measurement and analytical services through its custodial contract with BNY Mellon, which serves as the official book of record for SWIB's accounting and performance measurement functions. BNY Mellon provides data and analytical tools used by SWIB for compliance and risk management. These include global collateral management, data management, and hosting services. Fees for these services are established by contract.

US Bank: The State of Wisconsin has contracted with US Bank to be the state's working bank. The fees paid to US Bank by the SIF reflect bank service charges that are not directly applicable to the fund participants. These fees are distributed to the fund participants through the monthly SIF earnings process.

Legal Fees, Services, and Expenses

Under authority delegated by the Attorney General, pursuant to s. 25.18 (1) (a) Statutes, SWIB may employ legal counsel for any matters arising out of the scope of its investment authority. This includes legal services relating to bankruptcies, class actions, private markets transactions, fiduciary advice, securities law, investment litigation, and other similar matters. The Attorney General annually reviews and approves a list of law firms to provide investment legal services for SWIB.

Investment Counsel

Current law gives SWIB the authority to employ investment counsel in any matters arising out of the scope of its investment authority. Investment research and services provided include global market, industry, economic and company information, financial and performance analytics, news information, pricing and exchange data, credit ratings, financial modeling, economic forecasting, trading services, and a variety of Board consultations. These services enable SWIB to perform due diligence on current and future holdings and assist in monitoring investments.

Private Equity & Real Estate Investment Management Services

SWIB hires private equity and real estate advisors to assist with sourcing analysis, due diligence, and management of investments. SWIB also invests in funds, typically limited partnerships. Each fund either has a general partner or, for real estate, engages a fund manager with delegated authority to make real estate investments for the fund. Fees paid to fund managers are typically established as a percentage of the capital committed or assets under management. As assets in a fund are sold, the management fees paid typically are reimbursed from the profits of the fund.

Separate Account Public Market Management Fees

External asset managers have been delegated authority within guidelines established by SWIB to determine investment strategy and purchase securities in SWIB's name under a separate and distinct account. Fees are typically assessed as a percentage of the market value of assets under management and in some cases fees are based on investment performance. Standish Mellon invests cash in international and global portfolios that has yet to be invested in stocks or bonds. Due to settlement times around the globe, these funds cannot be effectively managed in the State Investment Fund. The fees are negotiated as part of the custodial contract.

Commingled Account Public Market Management Fees

SWIB has investments in a number of externally-managed funds which seek to replicate the returns of a particular public market index or seek to enhance the return from a particular public market index through the use of quantitative models or other strategies. SWIB's investments are commingled with other investors' and the underlying securities are owned in the name of the fund manager. Fees are typically based on a percentage of assets under management and may include other factors, such as performance. Hedge funds are included in this category as the invested assets are also commingled. Costs incurred from hedge fund investments consist of base fees and performance fees.

Securities Lending Agent Fees

Securities lending programs generally earn income through the reinvestment of cash collateral posted by borrowers and through the collection of fees for loans where non-cash collateral is posted. SWIB's securities lending income is shared with the agent to pay the costs associated with the administration of the program. The securities lending agent fees are no longer netted with income and are reported as securities lending agent fee expenses starting on July 1, 2019.