



February 14, 2020

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 quarter<sup>1</sup>. The information contained in this report is for the quarter ending December 31, 2019.

**Total Cost of Management – 4th Quarter 2019**

SWIB Cost of Management Summary	1st Quarter 2019 Cost	2nd Quarter 2019 Cost	3rd Quarter 2019 Cost	4th Quarter 2019 Cost	One-year Ending 12/31/2019	% of Costs
<b>Internal Operating Costs</b>						
Agency Operating Expenses	\$ 20,795,954	\$ 10,992,488	\$ 9,064,132	\$ 9,413,515	\$ 50,266,089	10.5%
Custodial, Investment Operations & Banking Fees	1,476,320	1,449,204	1,523,536	1,567,121	6,016,181	1.3%
Legal Fees	126,094	366,805	411,955	845,239	1,750,093	0.4%
Investment Research & Consulting Fees	6,972,181	9,806,277	8,180,737	9,378,626	34,337,821	7.1%
<b>Total Internal Operating Costs</b>	<b>\$ 29,370,549</b>	<b>\$ 22,614,774</b>	<b>\$ 19,180,360</b>	<b>\$ 21,204,501</b>	<b>\$ 92,370,184</b>	<b>19.2%</b>
<b>External Management Fees</b>						
Real Estate Advisory/Asset Management	\$ 13,080,095	\$ 13,036,219	\$ 13,118,881	\$ 11,604,346	\$ 50,839,541	10.6%
Private Equity Management	36,978,609	42,510,463	40,390,972	37,309,760	157,189,804	32.7%
Public Market Separate Accounts	6,634,855	14,021,583	8,090,740	5,751,839	34,499,017	7.2%
Public Market Commingled Accounts	36,107,528	39,988,829	31,649,108	36,560,546	144,306,011	30.0%
<b>Total External Management Fees</b>	<b>\$ 92,801,087</b>	<b>\$ 109,557,094</b>	<b>\$ 93,249,701</b>	<b>\$ 91,226,491</b>	<b>\$ 386,834,373</b>	<b>80.6%</b>
<b>Securities Lending Agent Fees</b>			<b>\$ 544,279</b>	<b>\$ 520,958</b>	<b>\$ 1,065,237</b>	<b>0.2%</b>
<b>Total Cost of Management</b>	<b>\$ 122,171,636</b>	<b>\$ 132,171,868</b>	<b>\$ 112,974,340</b>	<b>\$ 112,951,950</b>	<b>\$ 480,269,794</b>	
Average Assets Under Management (in billions)	\$ 118.5	\$ 122.2	\$ 122.8	\$ 128.8	\$ 123.1	
<b>Cost in Basis Points (all trust funds)</b>					<b>39.0</b>	

<sup>1</sup>Wisconsin 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 December 31, 2019, SWIB's total cost of management was 39 basis points (0.39%) or 39 cents for every \$100 managed. It is important to consider costs in the context of value-added investment returns. For example, on a preliminary basis over the past five years ending 12/31/2019, SWIB earned \$545 million for the Wisconsin Retirement System over investment benchmarks and after costs.

To reduce external asset management costs and increase net investment returns, SWIB continues to build internal resources 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
<b>Active Management</b>	
Global Large Cap Equity	4.0x
US Small Cap Equity	3.8x
US Fixed Income	1.9x
Global Fixed Income	4.6x
<b>Passive Management</b>	
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 December 31, 2019, external investment management fees including securities lending agent fees represented 80.8% of SWIB's total costs of management and 46.5% of assets under management, while SWIB's internal operating expenses represented 19.2% of costs and 53.5% of assets (see Attachment A). During the fourth quarter, the Board of Trustees approved two new asset and risk analyst positions.

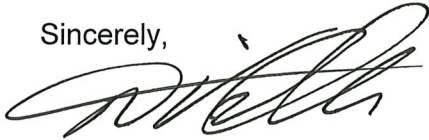
Assets Under Management & FTE		
	9/30/2019	12/31/2019
Internal Management	54.2%	53.5%
External Management	45.8%	46.5%
SWIB Positions – FTE	233	235
Total SWIB Positions	233	235

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,

A handwritten signature in black ink, appearing to read 'David Villa', written in a cursive style.

David Villa  
Executive Director/CIO

Attachments

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

## ATTACHMENT A

Wisconsin Retirement System (WRS)	3/31/2019		6/30/2019		9/30/2019		12/31/2019	
	Amount (in millions)	Percent	Amount (in millions)	Percent	Amount (in millions)	Percent	Amount (in millions)	Percent
Internally Managed	\$61,416	56.9%	\$58,582	52.7%	\$57,145	51.3%	\$58,597	50.3%
Externally Managed Dedicated Accounts	19,777	18.3%	25,816	23.2%	26,290	23.6%	34,514	29.6%
Externally Managed Commingled Accounts	26,717	24.8%	26,818	24.1%	28,049	25.2%	23,351	20.1%
1. Passive Index Funds	6,810	6.3%	7,410	6.7%	8,126	7.3%	2,498	2.1%
2. Enhanced Index Commingled Funds	0	0.0%	0	0.0%	0	0.0%	0	0.0%
3. Limited Partnerships	16,022	14.8%	13,720	12.3%	14,247	12.8%	14,717	12.6%
4. Actively Managed Commingled Accounts	3,885	3.6%	5,688	5.1%	5,676	5.1%	6,137	5.3%
<b>TOTAL WRS Assets</b>	<b>\$107,910</b>	<b>100.0%</b>	<b>\$111,217</b>	<b>100.0%</b>	<b>\$111,485</b>	<b>100.0%</b>	<b>\$116,463</b>	<b>100.0%</b>

State Investment Fund - Internally Managed	\$8,574		\$8,894		\$9,313		\$10,217	
Various Funds Internally Managed	\$121		\$125		\$121		\$120	
Various Funds Externally Managed	\$1,865		\$1,926		\$1,962		\$2,004	

<b>Total Assets Under Management</b>	<b>\$118,470</b>		<b>\$122,162</b>		<b>\$122,881</b>		<b>\$128,803</b>	
<b>Total Internal Management</b>	<b>\$70,111</b>	<b>59.2%</b>	<b>\$67,601</b>	<b>55.3%</b>	<b>\$66,580</b>	<b>54.2%</b>	<b>\$68,934</b>	<b>53.5%</b>
<b>Total External Management</b>	<b>\$48,359</b>	<b>40.8%</b>	<b>\$54,561</b>	<b>44.7%</b>	<b>\$56,301</b>	<b>45.8%</b>	<b>\$59,869</b>	<b>46.5%</b>

STATE OF WISCONSIN INVESTMENT BOARD  
Expenses for All Funds Under Management  
Quarter Ending December 31, 2019

ATTACHMENT B

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
<b><u>Internal Operating Expenses</u></b>		
Staff Compensation	Staff Compensation	6,411,762
Fringe Benefits	Fringe Benefits	1,390,412
Equipment, Supplies & Services	General Supplies & Services	1,611,341
<b>Total Internal Operating Expenses ***</b>		<b>\$ 9,413,515</b>
<b><u>Custodial, Investment Operations and Banking Fees</u></b>		
Bankers Bank	Custodial and Banking Fees	5,000
BNY Mellon Asset Servicing - Custody	Master Custody Services	490,249
BNY Mellon Asset Servicing - Investment Operations	Investment Operating Services	1,071,930
US Bank	Banking Fees	(58)
<b>Total Custodial, Investment Operations and Banking Fees</b>		<b>\$ 1,567,121</b>
<b><u>Legal Fees</u></b>		
Chapman & Cutler LLP	Legal Work for Investment Strategies	293,262
Cox Castle & Nicholson LLP	Legal Work for Investment Strategies	76,306
DLA Piper LLP (US)	Legal Work for Investment Strategies	97,309
Eversheds Sutherland (US) LLP	Legal Work for Investment Strategies	4,015
Faegre Baker Daniels LLP	Legal Work for Investment Strategies	48,835
Godfrey & Kahn SC	Legal Work for Investment Strategies	20,708
Mayer Brown LLP	Legal Work for Investment Strategies	64,778
Proskauer Rose LLP	Legal Work for Investment Strategies	804
Purrington Moody Weill LLP	Legal Work for Investment Strategies	12,147
Quarles & Brady	Legal Work for Investment Strategies	179,728
Reinhart Boerner Van Deuren SC	Legal Work for Investment Strategies	563
Shearman & Sterling LLP	Legal Work for Investment Strategies	39,691
Sidley Austin LLP (International)	Legal Work for Investment Strategies	6,090
West & Dunn LLC	Legal Work for Investment Strategies	1,003
<b>Total Legal Fees</b>		<b>\$ 845,239</b>
<b><u>Investment Counsel</u></b>		
ABG Sundal Collier Inc	Investment Research	17,500
Adeptyx Consulting	Investment Consulting Services	512,490
Advent Software Inc	Research Management System	814
Aksia LLC	Hedge Fund Investment Consulting	193,750
Alembic Global Advisors	Market Research	5,950
Ananth Seshadri	Economic Consulting Services	77,500
Aon Hewitt Investment Consulting Inc	Investment and Risk Management Research	55,000
B Riley FBR Inc	Investment Research	3,500
Bank of America Merrill Lynch	Investment Research	107,650
BCA Research Inc	Global & Domestic Fixed Income Strategy Research	26,250
Berenberg	Investment Research	65,300
BlackRock Financial Management	Risk Services	462,959
Bloomberg Finance LP	Market, Company, Industry & Benchmark Information	649,707
BMO Capital Markets Corp	Investment Research Services	30,450
BNY Mellon Asset Servicing - Eagle/Pace	Investment Consulting Services	140,256
Boenning & Scattergood Inc	Investment Research	4,250
Bright Young Ideas LLC	Investment Consulting Services	34,800
Callan Associates Inc	Investment Consulting & Performance Benchmarking	6,250
Canaccord Genuity	Investment Research	6,400
Carnegie Inc	Investment Research	1,750
CFRA Research	Investment Research Services	21,000
Charles River System Inc	Portfolio Management Trading Software & Services	229,713
CIBC World Markets Inc	Investment Research	12,600
Citisoft Inc	Investment Consulting Services	308,075
CL King & Associates	Investment Research	2,800
Cornerstone Macro LLC	Macro Economic Research	23,250
CoStar Portfolio Strategy	Real Estate Consulting & Research Services	28,738
Council of Institutional Investors	Corporate Governance	31,000
Cowen and Company LLC	Investment Research	30,000
Craig-Hallum Capital Group	Investment Research	14,400
Crane Data LLC	Research and Data Services	3,000
CreditSights	Credit Assessments	15,000
Cross Current Research LLC	Healthcare Sector Research	10,000
Cutler Associates	Investment Organization and Systems Consulting	53,079
DA Davidson & Co	Investment Research	20,600
Dacheng Xiu	Investment Research	1,000
Daiwa Capital Markets America	Investment Research	2,000
Davy Securities Limited	Investment Research	16,625
Depository Trust and Clearing Corp	Research and Data Services	2,350
DHR International	Recruitment Consulting	30,105
DNB Bank ASA	Investment Research	4,500
Dougherty & Company LLC	Investment Research	6,000
Dow Jones News Service	Company and Industry News Services	35,248
DTCC ITP LLC	Trade Settlement Service	771
EFront Financial Solutions Inc	Private Markets Portfolio Management Services	300,829

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
Empirical Research Partners LLC	Investment Research	56,400
Ernst & Young LLP	Tax Compliance and Investment Consulting Services	165,527
Euromonitor International	Research and Data Services	17,179
Evercore Group LLC	Investment Research	60,000
Exane Inc	Investment Research	76,950
FactSet Research Systems Inc	Financial & Economic Database	836,785
Furey Research Partners LLC	Small Cap Research	12,000
Gabriel Roeder Smith & Company	Actuarial Consulting	75,000
Goodbody	Investment Research	7,250
Grandview Analytics LLC	Investment Information Technology Consulting Services	91,065
Green Street Advisor	Real Estate Analytics	16,250
Guggenheim Securities LLC	Investment Research	13,000
Handelsbanken Markets Securities Inc.	Investment Research	6,000
Haver Analytics	Global Macroeconomic Research	18,200
Ice Data LP	Fixed Income Indices	6,250
Institutional Shareholder Services Inc	Proxy Voting Analysis	55,899
International Swaps and Derivatives Assn	Derivative Industry Research	10,800
Janney Montgomery Scott	Investment Research	2,000
Jefferies Research Services LLC	Investment Research	50,350
Keefe Bruyette & Woods (KBW)	Investment Research	50,500
KeyBanc Capital Markets Inc	Investment Research	67,100
Keystone Consulting Inc	Investment Information Technology Consulting Services	225,170
KPMG Limited	Tax Representation Services	5,011
Liberum Capital Inc	Investment Research	35,950
LionPoint Group	Investment Consulting Services	78,301
Longbow Securities LLC	Investment Research	22,250
Loop Capital Markets LLC	Investment Research	3,000
Macquarie Capital (USA) Inc	Investment Research	73,600
Mainfirst Securities US Inc	Investment Research	44,000
Markit NA	Investment Data Management Software	167,017
Matrix IDM, LLC	Investment Consulting	52,010
McLagan Partners Inc	Investment Compensation Data and Analysis	38,150
Meketa Investment Group	Public Markets External Manager Consultant	61,250
Michael Joseph Ford	Investment Consulting	1,651
MKM Partners	Investment Research Services	2,500
Moody's Analytics	Economic, Currency & Bond Analysis	10,889
Morningstar Inc	Industrial Sector Market Research & Analysis	17,500
MSCI Inc - Risk Metrics Solutions	Research and Data Services	342,238
MUFG Securities America	Investment Research	19,500
Needham & Company LLC	Investment Research	8,200
NEPC LLC	Investment Consulting Services	50,000
Noble Capital Markets Inc	Investment Research	1,000
Northland Securities	Investment Research	2,800
Novus Partners Inc	Profit & Loss Analytics System	47,025
Nuware Technology Corp	Investment Information Technology Consulting Services	228,491
NYSE Market Inc	New York Stock Exchange Data	3,820
Oppenheimer & Co Inc	Investment Research	24,650
OptionMetrics	Investment Data Service	7,875
Options Price Reporting Authority	Quote System for Options Market	1,638
Pac-invest	Research and Data Services	11,025
PerTrac (Strategic Financial Solutions LLC)	Fund of Funds Analytical Platform	7,341
Phil Erlanger Research Co Inc	Investment Research	2,000
Piper Jaffray & Co	Investment Research	13,100
Redburn Europe Limited	Investment Research	45,150
RedLine Associates, Inc	Recruitment Consulting	36,250
Refinitiv	Research Pricing (Autex, Baseline, FirstCall)	10,716
Renaissance Macro Research	Macro Economic Research	22,200
Responsible Investor	Research and Data Services	461
Robert W. Baird & Co.	Investment Research	61,900
Rosenblatt Securities Inc	Investment Research	10,000
Russell Investment Group	Index Data	8,502
S&P Global Market Intelligence	Investment Data	56,250
Sanford C Bernstein & Co LLC	Investment Research	119,200
Santander Investment Securities Inc	Investment Research	22,700
Seaport Global Securities LLC	Research and Data Services	12,680
SEB Securities Inc	Investment Research	8,000
Sharp Decisions Inc	Investment Information Technology Consulting Services	473,416
Snowflake Inc	Research and Data Services	18,273
SOP Advisors LP	Investment Research	5,500
Standard & Poors	Industry & Corporate Research	33,823
Stephens Inc	Investment Research	19,200
StepStone Group	Private Equity Consulting Services	486,800
StepStone Group Real Estate	Real Estate Consulting Services	53,750
Stifel Nicolaus & Company Incorporated	Investment Research	41,850
Stradegi Solutions, Inc.	Investment Consulting	81,431
Strategic Economic Decisions Inc	Investment Research Reports	12,500
SunTrust Robinson Humphrey Inc	Investment Research	19,600
Susquehanna Financial Group LLP	Investment Research	2,500
SystemsAccountants	Investment Information Technology Consulting Services	71,840
Telsey Advisory Group	Consumer Sector Research	30,000
The Bachrach Group	Investment Consulting Services	78,624
The Finlay Group	Investment Consulting Services	250,449

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
The Harry Walker Agency	Investment Consulting	15,000
The Leuthold Group LLC	Broad Based Market Research	15,000
Toronto Stock Exchange	Market Data	12,661
Trade Alert LLC	Market Data	900
TradeWeb	On-Line Fixed Income Trading Services	9,000
Tudor Pickering Holt & Co	Investment Research	14,100
Unit4 Business Software Inc	Financial & Administration Services System	36,587
Unquote	Research and Data Services	3,280
Upstream	Investment Research	1,380
Urban Land Institute	Investment Consulting Services	500
Vertical Research Partners	Industrial Sector Market Research & Analysis	15,500
Verus Advisory Inc	Benchmarking Consulting Services	42,000
Visible Alpha LLC	Research and Data Services	44,330
Vistra Trust Company Limited	Investment Consulting Services	8
Wall Street Journal	Investment Research & Information	31
Wells Fargo Securities, LLC	Investment Research Services	51,500
William Blair & Company LLC	Investment Research	8,500
Wolfe Trahan	Transportation and Macro Economic Research	15,500
Wolverine Execution Services LLC	Options Trading Platform	618
WorldBridge Partners, Inc.	Recruitment Consulting	90,000
<b>Total Investment Counsel</b>		<b>\$ 9,378,626</b>

#### Real Estate Management Fees

Alicion Ventures	Real Estate Management Fees	126,863
AmCap Inc	Real Estate Management Fees	325,109
Beacon Capital Partners	Real Estate Management Fees	1,130,238
Blackrock	Real Estate Management Fees	2,341
Blackstone Real Estate Advisors	Real Estate Management Fees	2,080,724
Blue Moon Capital Partners	Real Estate Management Fees	300,115
Blue Vista Capital Management	Real Estate Management Fees	185,930
Bristol Group	Real Estate Management Fees	375,637
Buchanan Street Capital Partners	Real Estate Management Fees	153,659
Callahan Capital Partners	Real Estate Management Fees	167,302
Carson Companies	Real Estate Management Fees	17,227
Casa Partners	Real Estate Management Fees	89,465
CBRE	Real Estate Management Fees	105,602
C-III Capital Partners	Real Estate Management Fees	2,375
Cornerstone Real Estate Advisers	Real Estate Management Fees	163,951
Crossings at Danada	Real Estate Management Fees	198,244
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	258,236
Harbor Beach Capital, LLC	Real Estate Management Fees	226,191
Hawkeye Partners	Real Estate Management Fees	143,521
Heitman	Real Estate Management Fees	605,002
Henderson Global Investors	Real Estate Management Fees	327,901
High Street Realty Company LLC	Real Estate Management Fees	182,397
Hudson Advisers	Real Estate Management Fees	40,902
J.P. Morgan Asset Management	Real Estate Management Fees	117,335
Lone Star	Real Estate Management Fees	(1,208,440)
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	59,372
Penwood	Real Estate Management Fees	441,990
Prologis	Real Estate Management Fees	238,805
Prudential Global Investment Management (PGIM)	Real Estate Management Fees	965,975
Realterm Global Asset Management	Real Estate Management Fees	361,150
Rockpoint Group	Real Estate Management Fees	28,628
RREEF	Real Estate Management Fees	419,222
Security Capital	Real Estate Management Fees	427,602
Teachers Insurance and Annuity Association of America	Real Estate Management Fees	312,151
Torchlight Investors	Real Estate Management Fees	311,688
UBS Realty Investors	Real Estate Management Fees	455,574
Wesco	Real Estate Management Fees	265,655
Westbrook Partners	Real Estate Management Fees	387,310
<b>Total Real Estate Management*</b>		<b>\$ 11,604,346</b>

#### Private Equity

Abor Group	Private Equity Management Fees	300,000
Advent International	Private Equity Management Fees	886,949
Alchemy Partners	Private Equity Management Fees	123,094
Altaris Capital Partners	Private Equity Management Fees	337,123
American Securities	Private Equity Management Fees	471,356
Andreessen Horowitz	Private Equity Management Fees	31,743
Apollo Management	Private Equity Management Fees	(3,737)
Arbor Investments	Private Equity Management Fees	32,503
Ares Management	Private Equity Management Fees	504,417
Ascribe Capital LLC	Private Equity Management Fees	105,870
Atlas Holdings	Private Equity Management Fees	403,370
Baird Venture Partners	Private Equity Management Fees	75,000
Benefit Street Partners	Private Equity Management Fees	(10,528)

EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
Berkshire Property Advisors	Private Equity Management Fees	307,158
Blackstone Real Estate Advisors	Private Equity Management Fees	384,689
Bookend Capital Partners	Private Equity Management Fees	249,999
Bridgepoint Capital	Private Equity Management Fees	345,954
Callius Mezzanine	Private Equity Management Fees	22,041
CapVest Private Equity	Private Equity Management Fees	(33,112)
Centerbridge Partners	Private Equity Management Fees	745,877
Charlesbank Capital Partners	Private Equity Management Fees	829,399
Chequers Capital	Private Equity Management Fees	347,992
Clearlake Capital Group	Private Equity Management Fees	606,715
Clearview Capital LLC	Private Equity Management Fees	(35,168)
Clessidra SGR SPA	Private Equity Management Fees	(2,345)
Coller Capital	Private Equity Management Fees	2,477
Cortec Group	Private Equity Management Fees	354,624
Craft Ventures LP	Private Equity Management Fees	156,250
Cressey & Company	Private Equity Management Fees	433,332
CVC Capital Partners	Private Equity Management Fees	687,741
ECM Equity Capital Management Gmbh	Private Equity Management Fees	92,658
EnCap Investments	Private Equity Management Fees	373,901
EQT Partners	Private Equity Management Fees	434,564
Excellere Capital Management	Private Equity Management Fees	442,936
Flagship Pioneering	Private Equity Management Fees	75,000
Flexpoint Ford	Private Equity Management Fees	142,253
Fortissimo Capital	Private Equity Management Fees	176,440
FountainVest Partners	Private Equity Management Fees	361,967
German Equity Partners	Private Equity Management Fees	242,463
Gilde	Private Equity Management Fees	412,717
Glendon Capital Management	Private Equity Management Fees	198,834
Gores Group	Private Equity Management Fees	52,398
Graphite Capital Management	Private Equity Management Fees	19,394
GSO Capital Partners	Private Equity Management Fees	(40,677)
GTCR	Private Equity Management Fees	943,561
Harvest Partners	Private Equity Management Fees	430,173
Hellman & Friedman Investors	Private Equity Management Fees	859,326
HgCapital	Private Equity Management Fees	307,696
Hudson Advisors	Private Equity Management Fees	33,755
Inflexion Private Equity Partners LLP	Private Equity Management Fees	773,300
Insight Equity	Private Equity Management Fees	80,567
InvestIndustrial	Private Equity Management Fees	423,931
JMI Equity	Private Equity Management Fees	573,415
KLH Capital	Private Equity Management Fees	194,427
Kohlberg Kravis Roberts & Co	Private Equity Management Fees	247,297
KPS Capital Partners	Private Equity Management Fees	125,000
Lake Pacific Partners	Private Equity Management Fees	237,500
Leonard Green & Partners	Private Equity Management Fees	463,609
Lightbay Capital	Private Equity Management Fees	250,000
Lindsay, Goldberg & Bessemer	Private Equity Management Fees	281,250
Merit Capital Partners	Private Equity Management Fees	(3,652)
Montefiore Investment	Private Equity Management Fees	166,453
Morgan Stanley	Private Equity Management Fees	108,744
New Capital Partners	Private Equity Management Fees	125,000
Oaktree Capital Management	Private Equity Management Fees	201,170
Old Lane	Private Equity Management Fees	(12,423)
ParkerGale Capital	Private Equity Management Fees	157,500
Patria Investimentos	Private Equity Management Fees	254,795
Peninsula Capital Partners LLC	Private Equity Management Fees	158
Platte River Equity	Private Equity Management Fees	183,000
Private Equity Solutions	Private Equity Management Fees	58,464
Providence Equity Partners, Inc.	Private Equity Management Fees	1,831,637
Quantum Energy Partners	Private Equity Management Fees	218,750
Resource Capital Funds	Private Equity Management Fees	88,007
Ridgemont Partners	Private Equity Management Fees	711,480
Riverstone Holdings	Private Equity Management Fees	442,821
SAIF Partners	Private Equity Management Fees	124,258
Segulah	Private Equity Management Fees	12,191
Sentinel Real Estate Corporation	Private Equity Management Fees	375,001
Shamrock Capital Advisors	Private Equity Management Fees	1,250,000
Sheridan Production Partners	Private Equity Management Fees	(41,774)
StepStone Group	Private Equity Management Fees	56,640
Sterling Group	Private Equity Management Fees	407,786
Stone Point Capital LLC	Private Equity Management Fees	681,487
The Jordan Company LP	Private Equity Management Fees	459,869
Thomas Bravo Fund	Private Equity Management Fees	281,250
Tower Arch Capital	Private Equity Management Fees	150,000
TowerBrook Investors	Private Equity Management Fees	414,165
TPG Capital	Private Equity Management Fees	1,467,036
Triton	Private Equity Management Fees	308,246
TSG Capital Partners	Private Equity Management Fees	750,000
TSG Consumer Partners LLC	Private Equity Management Fees	952,743
Udata Partners	Private Equity Management Fees	1,131,000
Varsity Healthcare Partners	Private Equity Management Fees	167,123
Venture Capital****	Private Equity Management Fees	2,729,264



EXPENSE CATEGORY	SERVICE PROVIDED	EXPENSES
Vinci Partners	Private Equity Management Fees	(101,452)
Vista Equity Partners	Private Equity Management Fees	1,425,957
Warburg Pincus	Private Equity Management Fees	1,152,602
Waterland Private Equity	Private Equity Management Fees	521,560
Wayzata Investment Partners	Private Equity Management Fees	65,799
Wind Point Partners	Private Equity Management Fees	166,667
<b>Total Private Equity Management**</b>		<b>\$ 37,309,760</b>
<b><u>Commingled Account Public Market Management Fees</u></b>		
Arrowgrass Capital	Public Market Management Fees	111,651
Avenue Capital Group	Public Market Management Fees	239,895
BFAM Asian Opportunities Fund	Public Market Management Fees	98,527
BlackRock Institutional Trust Company	Public Market Management Fees	568,701
Blue Mountain Capital Management	Public Market Management Fees	385,686
Bridgewater Associates	Public Market Management Fees	(590,866)
Capula Investment Management	Public Market Management Fees	3,070,222
Davidson Kempner Capital Management	Public Market Management Fees	1,877,826
DE Shaw & Co	Public Market Management Fees	4,934,232
Dorsal Capital Partners	Public Market Management Fees	2,432,358
Dyal Capital Partners	Public Market Management Fees	529,315
Efficient	Public Market Management Fees	(1,269,466)
Exoduspoint Capital Management	Public Market Management Fees	914,729
Graham Capital Management	Public Market Management Fees	955,815
Graticule Asset Management Asia	Public Market Management Fees	868,844
Highbridge Capital Management	Public Market Management Fees	16,370
Holocene Advisors Fund LP	Public Market Management Fees	2,979,291
Hudson Structured Capital Management	Public Market Management Fees	(1,149,586)
King Street Capital Management	Public Market Management Fees	1,149,004
LibreMax Capital, LLC	Public Market Management Fees	1,076,597
Marshall Wace	Public Market Management Fees	8,446,227
Nephilia Capital Ltd	Public Market Management Fees	578,490
Pharo	Public Market Management Fees	3,003,259
PIMCO	Public Market Management Fees	648,207
PSquared Asset Management	Public Market Management Fees	2,189,465
Senator Global Opportunity	Public Market Management Fees	490,034
Silver Point Capital, L.P.	Public Market Management Fees	30,994
Standish Mellon	Cash Management	98,821
Stone Milliner Asset Management	Public Market Management Fees	16,898
TCW	Public Market Management Fees	489,287
Two Sigma	Public Market Management Fees	1,119,719
Voleon Capital Management	Public Market Management Fees	250,000
<b>Total Commingled Account Public Market Management Fees</b>		<b>\$ 36,560,546</b>
<b><u>Separate Account Public Market Management Fees</u></b>		
Acadian Asset Management	Public Market Management Fees	1,227,494
Alliance Bernstein	Public Market Management Fees	(1,060,704)
Blackrock	Public Market Management Fees	1,277,182
Dodge and Cox	Public Market Management Fees	515,931
Fidelity Investments	Public Market Management Fees	1,194,088
Longview Partners	Public Market Management Fees	(1,215,796)
Loomis Sayles & Co	Public Market Management Fees	589,708
Parametric	Public Market Management Fees	405,469
Prudential Global Investment Management (PGIM)	Public Market Management Fees	125,665
Wellington Trust Company	Public Market Management Fees	2,692,802
<b>Total Separate Account Public Market Management Fees</b>		<b>\$ 5,751,839</b>
<b><u>Securities Lending Agent Fees</u></b>		
BNY Mellon Asset Servicing	Securities Lending Agent Fees	520,958
<b>Total Securities Lending Agent Fees</b>		<b>\$ 520,958</b>
<b>Total Quarterly Charges to Funds</b>		<b>\$ 112,951,950</b>

\*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.