



# Federated Annual Fee Report - 2019

## Executive Summary

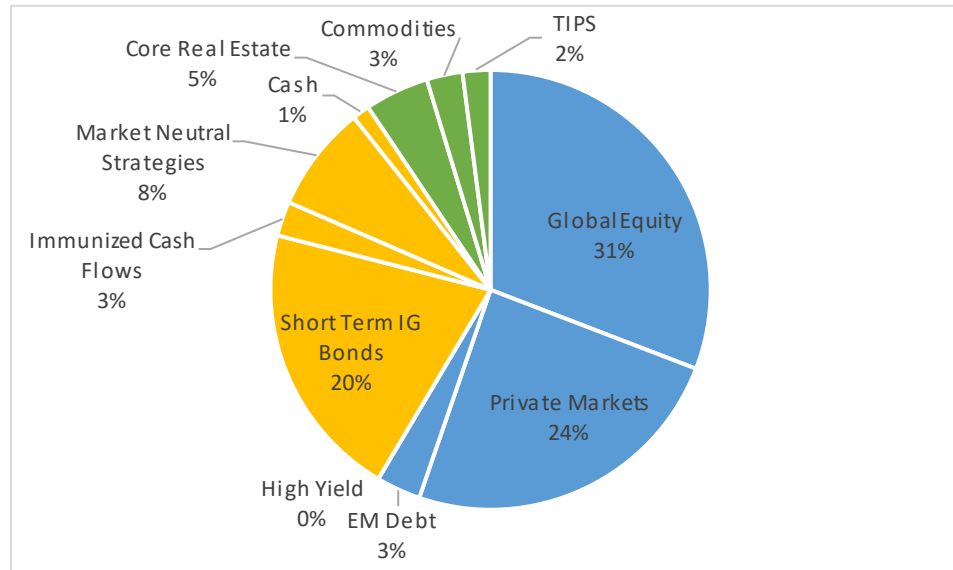
This report marks the fifth anniversary of our annual Fee Report for the Federated City Employees' Retirement System ("Federated", "Plan"). The goal of the report is to provide transparency and insight into the fees and expenses paid to investment managers along with the costs of operating the investment program. Pension plan fee data is generally underreported by peers, and typically represents only the portion of fees that are observable. This excludes often sizable embedded fees (such as incentive fees) that are deducted from account values of certain fund structures.

It is important to note that fees are a function of asset allocation and portfolio construction, which are byproducts of the Board's objectives, investment beliefs, and risk tolerance. Each year, the Board typically reviews the asset allocation considering updated capital market assumptions and the expected returns and volatility of the portfolio associated with those assumptions. The asset allocations in effect for the period covered by this report, as illustrated in tables 1 and 2.

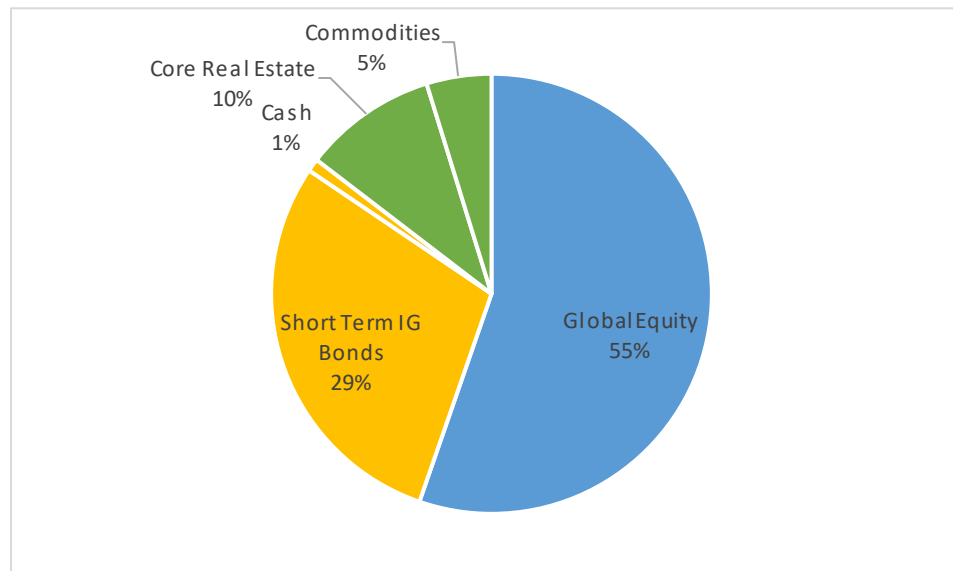
Asset allocation is typically one of the largest determinants of investment management fees at the portfolio level. Asset allocations that introduce alternative asset classes (Private Equity, Private Debt, Real Estate, Hedge Funds, etc.) will have higher levels of investment manager fees, because these asset classes or strategies have higher fee structures than traditional asset classes. In addition, asset class structuring can have a significant impact on fees. The use of active management versus passive management, as well as alternative strategies within traditional asset classes, will increase fees. When evaluating investment managers, staff places a significant emphasis on fees by negotiating for lower fees and analyzing that expected value or return is worth the expected cost.

**For calendar year 2019, management and incentive fees for the pension plan totaled \$19.2 million with a fee ratio of 0.89% as compared to \$22.2 million and 1.02% for 2018 and \$24.2 million and 1.15% for 2017. Fund operating expenses were \$3.8 million in 2019 for a fee ratio of 0.18% as compared to \$3.2 million and 0.15% in 2018 and \$2.4 million and 0.11% for 2017. The health care trust management and incentive fees totaled \$0.7 million with a fee ratio of 0.24% as compared to \$0.9 million with a fee ratio of 0.29% in 2018 and \$0.7 million with a fee ratio of 0.32% in 2017. Other investment-related costs (staff, consultants, custodian bank, investment legal, etc.) for the pension plan in 2019 were \$1.9 million with a fee ratio of 0.09% as compared to \$2.0 million and 0.09% in 2018 and \$1.9 million and 0.09% in 2017. Other investment-related costs for the health care trust totaled \$0.2 million with a fee ratio of 0.07% as compared to \$0.2 million and 0.08% for 2018 and \$0.2 million and 0.10% for 2017.**

**Table 1 - Pension Average Asset Allocation for 2019**



**Table 2 - Health Care Trust Average Asset Allocation for 2019**



## Introduction

The fees in this report represent management fees, incentive fees, fund operating expenses, and other investment-related costs that were incurred during the calendar year. These amounts may include fees that were accrued for the year, but not paid out.

Management fees are fees charged by fund managers to invest and manage assets. Incentive fees are performance-based fees for exceeding a hurdle return and are only applicable to certain fund structures. It is important to note that incentive fees are a form of shared economics that are only paid if the manager has produced positive returns or exceeded a predetermined hurdle rate. In some situations, incentive fees can be negative, reflecting the complexity of fee agreements. Operating expenses include overhead related to managing a fund that are indirectly borne by investors, which may include professional, administration, research, tax, legal, custodial and audit expenses for a fund. Trading expenses such as broker commissions are excluded from this report. Other costs include salary and benefits compensation for investment staff (including a 50% allocation for the CEO), cost of consultants (general, absolute return, risk), custodian, other third party vendors utilized by the investment program, and investment staff travel.

Though best efforts have been made to capture all material fees and expenses, this report may not include all indirect expenses and charges that may be paid to managers' affiliates, consultants, or entities for services rendered to the managers, the funds or portfolio entities held by certain funds. Future iterations of this report will continue to grow in sophistication, benefiting from industry-wide initiatives to gain additional transparency, such as the increasing adoption of the Institutional Limited Partners Association ("ILPA") fee reporting template.

## Data Sources

Staff compiled this fee report using the best available information for each fund manager to develop a comprehensive view of fees. Fee amounts were reviewed for reasonableness and reconciled to fee schedules. Fees for all managers active at any point during the year are included in this report, including those that were initially funded or terminated mid-year.

Fees for mutual funds, short term investment funds (Cash), and certain public markets commingled funds that deduct fees directly from the funds were calculated by multiplying each funds' fee ratio by the funds' average monthly balance for the year. The average balances were sourced from the Plan custodian bank, State Street.

Fees for Private funds were gathered by asking managers to complete the ILPA fee reporting template. The ILPA template is intended to standardize and codify the presentation of fees, expenses, and carried interest information by fund managers to Limited Partners. The remaining manager fees were obtained by having the fund managers fill out a fee template designed by staff.

Within the Other Costs section, consultants, custodian banks, and other vendor costs were sourced from fee invoices from the vendors. Investment staff salary and benefits were allocated to each of the four San Jose plans by pro-rating the total costs by the average balance of each plan. Similarly, legal costs incurred by Federated were allocated between the pension plan and health care trust by pro-rating the total costs by the average monthly balance of each plan.

## Changes from 2018 Report

This year's report has now incorporated the new strategic asset allocation asset classifications.

## Total Portfolio Fee Summaries

The tables in this report present fees by asset class and management type. Fees by management type are presented by segregating investments into four "fund type" categories: passive, active, hedged, and private. Passive strategies are intended to generate a return that emulates an index. Active strategies include investment managers that attempt to outperform an index on a long only basis. Hedged strategies generally seek to achieve an absolute return ("alpha") regardless of market direction ("beta") by employing various strategies including long and short positions. Private strategies utilize a diverse set of approaches to invest in illiquid assets, such as equity of privately held companies or real estate.

## Year-over-Year Comparisons

The year-over-year comparison tables in this report present a time series of changes in average weights, fees, fee ratios, contribution to total plan fee ratios, and a year-over-year attribution. The year-over-year attribution uses the Brinson-Fachler methodology to decompose the change in contribution to total plan fee ratio into 1) impact due to weight changes, 2) impact due to management fee ratio changes, and 3) impact due to incentive fee ratio changes, and 4) impact due to fund operating expense ratio changes.

## California Government Code §7514.7 (AB 2833)

Assembly Bill 2833 (“AB 2833”) was approved on September 14, 2016 adding Section 7514.7 to California Government Code. The addition to the Code requires California public investment funds to make annual disclosures of fees for alternative investment vehicles at a public meeting.

Tables 15-19 of this report are intended to comply with the law.

*Note: Some values on the report may not sum due to rounding.*

Table 3 - Pension Fees by Asset Class and Management Type

Asset Class	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Management and Incentive			Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp		Contribution to Total Plan Fee Ratio
			Operating Expenses (\$ mm)	Fees (\$ mm)	Mgmt, Incent, and Op Exp (\$ mm)							Plan Fee Ratio	% of Total Plan Fee Ratio	
<b>Growth</b>	10.4	2.2	3.1	11.8	15.7	1,264	58.5%	0.82%	0.18%	0.24%	0.93%	1.24%	68.2%	0.73%
Public Equity	3.0	0.5	0.9	3.5	4.4	666	30.8%	0.45%	0.08%	0.13%	0.53%	0.66%	19.0%	0.20%
Passive	0.1	-	0.0	0.1	0.2	271	12.6%	0.05%	0.00%	0.01%	0.05%	0.07%	0.8%	0.01%
Active	2.1	-	0.7	2.1	2.8	339	15.7%	0.61%	0.00%	0.21%	0.61%	0.82%	12.1%	0.13%
Hedged	0.8	0.5	0.1	1.3	1.4	56	2.6%	1.43%	0.90%	0.20%	2.33%	2.53%	6.1%	0.07%
Private Markets	6.9	1.1	2.2	8.0	10.2	527	24.4%	1.31%	0.22%	0.41%	1.52%	1.93%	44.2%	0.47%
Passive	0.1	-	0.0	0.1	0.1	278	12.9%	0.03%	0.00%	0.01%	0.03%	0.04%	0.4%	0.00%
Private Equity	3.9	0.4	1.1	4.3	5.4	105	4.9%	3.68%	0.40%	1.05%	4.09%	5.14%	23.5%	0.25%
Private Debt	0.7	0.2	0.6	0.8	1.5	64	3.0%	1.04%	0.26%	0.97%	1.31%	2.28%	6.4%	0.07%
Growth Real Estate	1.6	0.4	0.3	2.1	2.4	51	2.4%	3.21%	0.85%	0.67%	4.06%	4.74%	10.5%	0.11%
Private Real Assets	0.6	0.1	0.1	0.7	0.8	28	1.3%	2.19%	0.40%	0.22%	2.59%	2.80%	3.4%	0.04%
Emerging Markets Debt	0.5	0.6	0.1	0.3	1.1	71	3.3%	0.68%	0.86%	0.08%	0.36%	1.62%	5.0%	0.05%
Active	0.3	-	0.0	0.3	0.3	46	2.1%	0.55%	0.00%	0.08%	0.55%	0.63%	1.3%	0.01%
Hedged	0.2	0.6	0.0	0.8	0.9	25	1.1%	0.93%	2.44%	0.08%	3.37%	3.45%	3.7%	0.04%
High Yield	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
Hedged	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
<b>Low Beta</b>	2.7	2.9	0.5	5.6	6.1	693	32.1%	0.38%	0.42%	0.07%	0.81%	0.88%	26.6%	0.28%
Short Term IG Bonds	0.1	-	0.0	0.1	0.1	442	20.5%	0.02%	0.00%	0.00%	0.02%	0.02%	0.4%	0.00%
Passive	0.1	-	0.0	0.1	0.1	442	20.5%	0.02%	0.00%	0.00%	0.02%	0.02%	0.4%	0.00%
Immunized Cash Flows	0.0	-	0.0	0.0	0.0	55	2.5%	0.02%	0.00%	0.01%	0.02%	0.03%	0.1%	0.00%
Passive	0.0	-	0.0	0.0	0.0	55	2.5%	0.02%	0.00%	0.01%	0.02%	0.03%	0.1%	0.00%
Market Neutral Strategies	2.5	2.9	0.5	5.5	6.0	169	7.8%	1.50%	1.74%	0.30%	3.24%	3.54%	26.0%	0.28%
Hedged	2.5	2.9	0.5	5.5	6.0	169	7.8%	1.50%	1.74%	0.30%	3.24%	3.54%	26.0%	0.28%
Cash	0.0	-	-	0.0	0.0	27	1.3%	0.12%	0.00%	0.00%	0.12%	0.12%	0.1%	0.00%
Passive	0.0	-	-	0.0	0.0	27	1.3%	0.12%	0.00%	0.00%	0.12%	0.12%	0.1%	0.00%
<b>Other</b>	1.0	-	0.2	1.0	1.2	203	9.4%	0.50%	0.00%	0.09%	0.50%	0.59%	5.2%	0.06%
Core Real Estate	0.8	-	0.1	0.8	0.9	102	4.7%	0.75%	0.00%	0.10%	0.75%	0.86%	3.8%	0.04%
Active	0.8	-	0.1	0.8	0.9	102	4.7%	0.75%	0.00%	0.10%	0.75%	0.86%	3.8%	0.04%
Commodities	0.2	-	0.1	0.2	0.3	57	2.6%	0.40%	0.00%	0.13%	0.40%	0.53%	1.3%	0.01%
Active	0.2	-	0.1	0.2	0.3	57	2.6%	0.40%	0.00%	0.13%	0.40%	0.53%	1.3%	0.01%
Hedged	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
TIPS	0.0	-	-	0.0	0.0	44	2.0%	0.05%	0.00%	0.00%	0.05%	0.05%	0.1%	0.00%
Passive	0.0	-	-	0.0	0.0	44	2.0%	0.05%	0.00%	0.00%	0.05%	0.05%	0.1%	0.00%
Core Fixed Income	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
Passive	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
<b>Total Plan</b>	<b>14.1</b>	<b>5.2</b>	<b>3.8</b>	<b>19.2</b>	<b>23.0</b>	<b>2,159</b>	<b>100.0%</b>	<b>0.65%</b>	<b>0.24%</b>	<b>0.18%</b>	<b>0.89%</b>	<b>1.07%</b>	<b>100.00%</b>	<b>1.07%</b>

The table above illustrates that management, incentive, and operating expenses for the pension plan totaled \$23 million for 2019 which equated to a total plan fee ratio of 1.07%. The Private Markets and Market Neutral Strategies contributed the most to the total plan fee ratio at 0.47% and 0.28%, respectively.

**Table 4 - Pension Fees by Management Type**

Fund Type	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Management			Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
			Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)	Mgmt, Incent, and Op Exp (\$ mm)									
Passive	0.4	-	0.1	0.4	0.5	1,118	51.8%	0.03%	0.00%	0.01%	0.03%	0.04%	2.0%	0.02%
Active	3.3	-	0.9	3.3	4.2	543	25.2%	0.61%	0.00%	0.17%	0.61%	0.78%	18.4%	0.20%
Hedged	3.6	4.1	0.6	7.6	8.3	249	11.6%	1.43%	1.62%	0.26%	3.05%	3.31%	35.8%	0.38%
Private	6.8	1.1	2.1	7.9	10.1	249	11.5%	2.73%	0.46%	0.86%	3.19%	4.05%	43.8%	0.47%
Total Plan	14.1	5.2	3.8	19.2	23.0	2,159	100.0%	0.65%	0.24%	0.18%	0.89%	1.07%	100.0%	1.07%

For the total pension plan, Private management funds accounted for 0.47% of the total plan fee ratio and represented about 12% of average plan assets. Hedged management strategies were the next largest contributor to the total plan fee ratio accounting for 0.38% of the total plan fee ratio and represented 12% of average plan assets. Passive and active management strategies accounted for 0.02% and 0.20% of the total plan fee ratio and represented 52% and 26% of plan assets, respectively.

**Table 5 - Pension Other Investment Costs**

Investment Staff Salary and Benefits (\$ mm)	Consultants (\$ mm)	Custodian (\$ mm)	Other Vendors and Travel (\$ mm)	Total Other Costs (\$ mm)	Other Costs Fee Ratio
0.5	0.6	0.3	0.4	1.9	0.09%

Other investment costs for the pension plan equated to a total fee ratio of 0.09%. As previously discussed, other costs include salary and benefits compensation for investment staff, cost of consultants, custodian, third party vendors utilized by the investment program, and investment staff travel.



**Table 6 - Health Care Fees by Asset Class and Management Type**

Asset Class	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Management		Mgmt, Incent, and Op Exp (\$ mm)	Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
			Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)										
<b>Growth</b>	0.4	-	0.0	0.4	0.5	167	55.3%	0.27%	0.00%	0.02%	0.27%	0.29%	60.7%	0.16%
Global Equity	0.4	-	0.0	0.4	0.5	167	55.3%	0.27%	0.00%	0.02%	0.27%	0.29%	60.7%	0.16%
Passive	0.1	-	0.0	0.1	0.1	129	42.7%	0.05%	0.00%	0.02%	0.05%	0.08%	12.5%	0.03%
Active	0.4	-	-	0.4	0.4	38	12.6%	1.00%	0.00%	0.00%	1.00%	1.00%	48.1%	0.13%
<b>Zero Beta</b>	0.0	-	-	0.0	0.0	91	30.1%	0.02%	0.00%	0.00%	0.02%	0.02%	2.7%	0.01%
Short Term IG Bonds	0.0	-	-	0.0	0.0	88	29.2%	0.02%	0.00%	0.00%	0.02%	0.02%	2.3%	0.01%
Passive	0.0	-	-	0.0	0.0	88	29.2%	0.02%	0.00%	0.00%	0.02%	0.02%	2.3%	0.01%
Cash	0.0	-	-	0.0	0.0	3	0.9%	0.12%	0.00%	0.00%	0.12%	0.12%	0.4%	0.00%
Passive	0.0	-	-	0.0	0.0	3	0.9%	0.12%	0.00%	0.00%	0.12%	0.12%	0.4%	0.00%
<b>Other</b>	0.3	-	0.0	0.3	0.3	44	14.6%	0.61%	0.00%	0.04%	0.61%	0.65%	36.7%	0.10%
Core Real Estate	0.2	-	-	0.2	0.2	30	9.8%	0.71%	0.00%	0.00%	0.71%	0.71%	54.4%	0.14%
Active	0.2	-	-	0.2	0.2	30	9.8%	0.71%	0.00%	0.00%	0.71%	0.71%	54.4%	0.14%
Commodities	0.1	-	0.0	0.1	0.1	14	4.8%	0.40%	0.00%	0.13%	0.40%	0.53%	19.7%	0.05%
Active	0.1	-	0.0	0.1	0.1	14	4.8%	0.40%	0.00%	0.13%	0.40%	0.53%	19.7%	0.05%
<b>Total Plan</b>	<b>0.7</b>	<b>-</b>	<b>0.0</b>	<b>0.7</b>	<b>0.8</b>	<b>302</b>	<b>100.0%</b>	<b>0.24%</b>	<b>0.00%</b>	<b>0.02%</b>	<b>0.24%</b>	<b>0.26%</b>	<b>100.00%</b>	<b>0.26%</b>

The table above illustrates that management, incentive, and operating expenses for the health care trust totaled \$0.8 million for 2019 which equated to a total plan fee ratio of 0.26%. The Global Equity asset class contributed the most to the total plan fee ratio at 0.16%.

**Table 7 - Health Care Fees by Management Type**

Fund Type	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Management		Mgmt, Incent, and Op Exp (\$ mm)	Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
			Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)										
Passive	0.1	-	0.0	0.1	0.1	220	72.8%	0.04%	0.00%	0.01%	0.04%	0.05%	15.2%	0.04%
Active	0.6	-	0.0	0.6	0.7	82	27.2%	0.79%	0.00%	0.02%	0.79%	0.81%	84.8%	0.22%
Hedged	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
Private	-	-	-	-	-	-	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.00%
<b>Total Plan</b>	<b>0.7</b>	<b>-</b>	<b>0.0</b>	<b>0.7</b>	<b>0.8</b>	<b>302</b>	<b>100.0%</b>	<b>0.24%</b>	<b>0.00%</b>	<b>0.02%</b>	<b>0.24%</b>	<b>0.26%</b>	<b>100.0%</b>	<b>0.26%</b>

For the total health care trust, active management strategies accounted for 0.22% of the total plan fee ratio and represented 27% of average plan assets. Passive strategies accounted for 0.04% of the total plan fee ratio and represented 73% of plan assets.

**Table 8 - Health Care Other Investment Costs**

<b>Investment Staff Salary and Benefits (\$ mm)</b>	<b>Consultants (\$ mm)</b>	<b>Custodian (\$ mm)</b>	<b>Other Vendors and Travel (\$ mm)</b>	<b>Total Other Costs (\$ mm)</b>	<b>Other Costs Fee Ratio</b>
0.1	0.1	0.1	0.0	0.2	0.07%

Other investment costs for the health care trust equated to a total fee ratio of 0.07%.



**Table 11 - Pension Year-over-Year Comparison of Other Costs**

	<b>Inv Staff Salary and Benefits (\$ mm)</b>	<b>Consultants (\$ mm)</b>	<b>Custodian (\$ mm)</b>	<b>Other Vendors and Travel (\$ mm)</b>	<b>Total Other Costs (\$ mm)</b>	<b>Other Costs Fee Ratio</b>
2018	0.5	0.6	0.3	0.4	1.9	0.09%
2019	0.5	0.6	0.3	0.4	1.9	0.09%
Change	0.0	-0.0	0.0	-0.0	-0.0	0.00%

Table 12 - Health Care Year-over-Year Comparison by Asset Class and Management Type

Asset Class	Average Weight			Management Fees			Incentive Fees			Operating Expense			Total Fees (Mgt/Incent/Opex)			Fee Ratio (Mgt/Incent/Opex)			Contrib to Total Plan Fee Ratio			YoY Attribution			
	2018	2019	Change	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018	2019	Change	2018	2019	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio	Due to Opex
Growth	54.6%	55.3%	0.7%	0.46	0.45	-0.01	-	-	-	0.01	0.03	0.02	0.47	0.48	0.01	0.29%	0.29%	-0.01%	0.16%	0.16%	0.00%	0.00%	-0.01%	0.00%	0.01%
Global Equity	54.6%	55.3%	0.7%	0.46	0.45	-0.01	-	-	-	0.01	0.03	0.02	0.47	0.48	0.01	0.29%	0.29%	-0.01%	0.16%	0.16%	0.00%	0.00%	-0.01%	0.00%	0.01%
Passive	41.3%	42.7%	1.5%	0.05	0.07	0.02	-	-	-	0.01	0.03	0.02	0.06	0.10	0.04	0.05%	0.08%	0.02%	0.02%	0.03%	0.01%	0.00%	0.01%	0.00%	0.01%
Active	13.3%	12.6%	-0.8%	0.41	0.38	-0.03	-	-	-	-	-	-	0.41	0.38	-0.03	1.04%	1.00%	-0.04%	0.14%	0.13%	-0.01%	-0.01%	-0.01%	0.00%	0.00%
Zero Beta	9.9%	30.1%	20.2%	0.01	0.02	0.01	-	-	-	0.01	0.02	0.01	0.01	0.02	0.01	0.05%	0.02%	-0.02%	0.00%	0.01%	0.00%	-0.06%	-0.01%	0.00%	0.00%
Short Term IG Bonds	7.3%	29.2%	21.9%	0.00	0.02	0.01	-	-	-	-	-	-	0.00	0.02	0.01	0.02%	0.02%	0.00%	0.00%	0.01%	0.00%	-0.07%	0.00%	0.00%	0.00%
Passive	7.3%	29.2%	21.9%	0.00	0.02	0.01	-	-	-	-	-	-	0.00	0.02	0.01	0.02%	0.02%	0.00%	0.00%	0.01%	0.00%	-0.07%	0.00%	0.00%	0.00%
Cash	2.6%	0.9%	-1.6%	0.01	0.00	-0.01	-	-	-	-	-	-	0.01	0.00	-0.01	0.12%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Passive	2.6%	0.9%	-1.6%	0.01	0.00	-0.01	-	-	-	-	-	-	0.01	0.00	-0.01	0.12%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other	35.5%	14.6%	-20.9%	0.35	0.27	-0.08	0.05	-	-0.05	0.07	0.02	-0.05	0.29	0.29	-0.01	0.28%	0.65%	0.37%	0.10%	0.10%	0.00%	0.01%	0.04%	-0.01%	0.00%
Core Real Estate	6.9%	9.8%	2.9%	0.20	0.21	0.01	-	-	-	0.03	-	-0.03	0.29	0.21	-0.08	1.44%	0.71%	-0.73%	0.10%	0.14%	0.04%	0.03%	-0.03%	0.00%	-0.02%
Active	0.0%	9.8%	9.8%	-	0.21	0.21	-	-	-	-	-	-	-	0.21	0.21	0.00%	0.71%	0.71%	0.00%	0.14%	0.14%	-0.03%	0.07%	0.00%	0.00%
Commodities	4.1%	4.8%	0.7%	0.05	0.06	0.01	-	-	-	0.01	0.02	0.00	0.06	0.08	0.02	0.51%	0.53%	0.03%	0.02%	0.05%	0.03%	0.00%	0.00%	0.00%	0.00%
Active	4.1%	4.8%	0.7%	0.05	0.06	0.01	-	-	-	0.01	0.02	0.00	0.06	0.08	0.02	0.51%	0.53%	0.03%	0.02%	0.05%	0.03%	0.00%	0.00%	0.00%	0.00%
Total Plan	100.0%	100.0%	0.0%	0.82	0.74	-0.08	0.05	-	-0.05	0.08	0.05	-0.04	0.95	0.79	-0.17	0.32%	0.26%	-0.06%	0.32%	0.26%	-0.06%	-0.05%	0.02%	-0.01%	0.00%

Note: YoY attribution effects of fund types within assets classes may not sum to the asset class value

Table 13 - Health Care Year-over-Year Comparison by Management Type

Type	Average Weight			Management Fees			Incentive Fees			Operating Expense			Total Fees (Mgt/Incent/Opex)			Fee Ratio			Contrib to Total Plan Fee Ratio			YoY Attribution			
	2018	2019	Change	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018 (\$ mm)	2019 (\$ mm)	Change (\$ mm)	2018	2019	Change	2018	2019	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio	Due to Opex
Passive	74.7%	72.8%	-1.8%	0.09	0.09	0.00	-	-	-	0.02	0.03	0.01	0.11	0.12	0.01	0.05%	0.05%	0.01%	0.04%	0.04%	0.00%	0.01%	0.00%	0.00%	0.00%
Active	17.4%	27.2%	9.7%	0.46	0.65	0.19	-	-	-	0.01	0.02	0.00	0.47	0.67	0.20	0.91%	0.81%	-0.10%	0.16%	0.22%	0.06%	0.06%	-0.03%	0.00%	0.00%
Hedged	1.0%	0.0%	-1.0%	0.08	-	-0.08	0.05	-	-0.05	0.02	-	-0.02	0.14	-	-0.14	4.97%	0.00%	-4.97%	0.05%	0.00%	-0.05%	-0.05%	0.00%	0.00%	0.00%
Private	6.9%	0.0%	-6.9%	0.20	-	-0.20	-	-	-	0.03	-	-0.03	0.23	-	-0.23	1.15%	0.00%	-1.15%	0.08%	0.00%	-0.08%	-0.06%	0.00%	0.00%	0.00%
Total Plan	100.0%	100.0%	0.0%	0.82	0.74	-0.08	0.05	-	-0.05	0.08	0.05	-0.04	0.95	0.79	-0.17	0.32%	0.26%	-0.06%	0.32%	0.26%	-0.06%	-0.04%	-0.02%	0.00%	0.00%

Table 14 - Health Care Year-over-Year Comparison of Other Costs

		Inv Staff		Other			
		Salary and Benefits (\$ mm)	Consultants (\$ mm)	Custodian (\$ mm)	Vendors and Travel (\$ mm)	Total Other Costs (\$ mm)	Other Costs Fee Ratio
2018		0.08	0.05	0.05	0.03	0.22	0.08%
2019		0.07	0.06	0.05	0.03	0.22	0.07%
Change		-0.01	0.00	0.00	0.00	-0.00	0.00%

## Analysis of Pension Year-over-Year Changes by Asset Class

As presented in Table 9, the pension total plan fee ratio decreased by about -11 bps from 1.17% in 2018 to 1.07% in 2019.

The largest driver of the decrease from an asset class perspective were Short Term IG Bonds (-19 bps contribution), partially offset by Core Fixed Income (+14 bps).

Benefits from changes in the management fee ratio (-19bps) and changes in Incentive fees (-16bps) were largely offset by changes in weighting amongst the asset classes (+24 bps).

## Analysis of Pension Year-over-Year Changes by Management Type and Other Costs

As shown in the Table 10 YoY attribution section, the benefits from changes in weight (-28bps) were largely offset by changes management fee ratio/incentive fee ratio/opex ratio.

As displayed in Table 11, Other Costs remained constant (0.09%) compared to 2018.

## Analysis of Health Care Year-over-Year Changes by Asset Class, Management Type and Other Costs

As seen in Tables 12 and 13, the Health Care total plan fee ratio declined from 0.32% in 2018 to 0.26% in 2019 due to benefits from changes in weight (-4bps) by eliminating private and hedged management strategies.

As displayed in Table 14, **Other Costs** remained declined slightly from 2018 to 2019 going from 8bps to 7bps.

**Table 15 – California Government Code §7514.7 Disclosure, Private Equity**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2019 (\$)	2019 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2019 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2019 (\$)	Fees and expenses paid from the Fund to GP and related parties 2019 (\$)					Fees and expenses paid by all portfolio companies 2019 (\$)	Carried Interest Paid 2019 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
Pathway Private Equity Fund VIII	2211 Michelson Drive, Ninth Floor Irvine, CA 92612	2004	40,000,000	39,929,457	2,596,155	789,073	3,385,228	-	6.7%	1.5	-	62,978	68,556	-	-	-	-	-
Pantheon Global Secondary Fund III 'B'	600 Montgomery Street, 23rd Floor San Francisco, CA 94111	2006	40,000,000	37,840,000	3,289,698	1,960,000	5,249,698	-	2.0%	1.1	-	186,241	19,915	-	-	-	-	-
Pantheon USA Fund VII	600 Montgomery Street, 23rd Floor San Francisco, CA 94111	2006	40,000,000	36,960,000	14,063,459	5,519,997	19,583,456	-	9.9%	1.8	-	218,699	11,085	-	-	(16,663)	-	-
Great Hill Equity Partners IV	One Liberty Square Boston, Massachusetts 02109	2008	5,000,000	5,000,000	2,298,604	648,513	2,947,117	-	23.9%	2.9	-	-	4,536	-	-	110,421	-	161,380
Partners Group Secondary 2008	1660 17th Street, Suite 201 Denver, CO 80202	2008	10,443,016	9,200,259	947,402	636,994	1,584,396	-	8.90%	1.5	-	62,279	3,473	-	-	8,268	-	-
Partners Group Secondary 2011, L.P.	1660 17th Street, Suite 201 Denver, CO 80202	2011	20,000,000	12,680,419	6,578,784	1,716,015	8,294,799	-	16.10%	1.7	-	202,500	3,526	-	-	(23,988)	-	-
SJFED Private Equity Strategic Partnership, L.P.	325 N. Saint Paul St., Ste. 4900 Dallas, TX 75201	2017	225,600,000	87,825,000	94,460,982	-	94,460,982	-	14.7%	1.1	-	3,350,085	932,486	362,904	-	61,971	-	-
Crestline Portfolio Financing	201 Main St, #1900 Fort Worth, TX 76102	2018	15,000,000	7,850,873	6,933,788	127,460	7,061,248	-	NM	1.1	-	61,509	47,875	-	-	111,252	-	-
Innovation Endeavors III	1845 El Camino Real Palo Alto, CA 94306	2018	4,800,000	1,560,000	1,453,784	-	1,453,784	-	NM	1.4	-	96,000	15,789	-	-	171,544	-	-

Source: Fund managers, Meketa Investment Group

**Table 16 – California Government Code §7514.7 Disclosure, Private Debt**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2019 (\$)	2019 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2019 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2019 (\$)	Fees and expenses paid from the Fund to GP and related parties 2019 (\$)					Fees and expenses paid by all portfolio companies 2019 (\$)	Carried Interest Paid 2019 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
GSO SJ Partners	345 Park Avenue New York, NY 10154	2010	50,000,000	43,048,480	6,513,038	-	6,513,038	-	6.1%	1.2	-	174,036	79,794	-	-	(15,536)	-	-
Medley Opportunity Fund II, L.P.	280 Park Avenue, 6th Floor East New York, NY 10017	2010	50,000,000	51,718,681	16,901,054	4,302,758	21,203,812	-	3.3%	1.2	-	208,961	328,000	-	-	-	-	-
White Oak Direct Lending	3 Embarcadero Center, 5th Floor San Francisco, CA 94111	2010	50,000,000	88,348,325	13,106,985	62,133	13,169,118	-	2.8%	1.1	-	144,319	34,003	-	-	-	11,880	-
Cross Ocean USD ESS Fund II, L.P.	11 Charles II St. London, SW1Y4QU	2016	15,000,000	12,007,402	8,411,734	5,243,819	13,655,553	-	8.6%	1.2	-	105,825	89,733	-	-	136,840	-	-
Arrowmark Co-Investment	100 Fillmore Street, Suite 325, Denver, CO 80206	2017	5,000,000	5,000,000	-	5,620,048	5,620,048	-	12.94%	1.22	-	-	-	-	-	48,588	-	48,588
Octagon CLO Opportunity Fund III, L.P.	250 Park Ave., 15th Floor, New York, NY 10177, USA	2018	25,000,000	8,750,000	8,095,064	578,001	8,673,065	-	-1.26%	0.99	-	38,776	92,857	-	-	-	-	-

Source: Fund managers, Meketa Investment Group

**Table 17 – California Government Code §7514.7 Disclosure, Growth Real Estate**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2019 (\$)	2019 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2019 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2019 (\$)	Fees and expenses paid from the Fund to GP and related parties 2019 (\$)					Fees and expenses paid by all portfolio companies 2019 (\$)	Carried Interest Paid 2019 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
DRA Growth and Income Fund VI	220 East 42nd Street, 27th Floor New York, NY 10017	2007	9,709,422	10,556,217	648,859	607,044	1,255,903	-	10.73%	1.7	-	-	1,297	-	-	(13,429)	-	107,126
DRA Growth and Income Fund VII, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2011	15,000,000	16,317,694	4,392,348	6,364,864	10,757,212	-	21.2%	2.2	-	93,044	37,746	-	-	362,037	-	1,104,048
DRA Growth and Income Fund VIII, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2014	15,000,000	18,249,541	10,761,120	3,127,841	13,888,961	-	11.0%	1.3	-	225,053	20,530	-	-	119	-	-
European Property Investors Special Opportunities 4, L.P.	Berkeley Square House (8th Floor) Berkeley Square, London W1J6DB, UK	2015	14,306,285	11,993,328	13,032,898	942,052	13,974,949	-	10.5%	1.2	-	152,416	108,160	-	-	10,069	-	10,069
DRA Growth and Income Fund IX, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2016	20,000,000	19,290,040	17,743,641	2,209,452	19,953,093	-	14.2%	1.2	-	379,650	45,265	-	-	-	-	-
GEM Realty Fund VI, L.P.	900 North Michigan Avenue #1450, Chicago, IL 60611	2017	10,000,000	2,450,000	1,827,623	-	1,827,623	-	-1.3%	1.0	-	135,000	13,402	-	-	-	-	-
European Property Investors Special Opportunities 5, L.P.	Berkeley Square House (8th Floor) Berkeley Square, London W1J6DB, UK	2018	12,600,000	345,788	112,215	-	112,215	-	NM	NM	-	187,964	33,871	-	-	-	-	-
Torchlight Debt Opportunity Fund VI, L.P.	280 Park Avenue New York, NY 10017	2018	30,000,000	14,309,115	11,788,122	2,565,077	14,353,199	-	6.6%	1.0	-	405,000	59,179	-	-	76,498	-	-
Rockpoint Real Estate Fund VI	500 Boylston Street, Suite 1880, Boston, MA	2019	6,500,000	-	-	-	-	-	NM	NM	-	61,707	14,007	-	-	-	-	-

Source: Fund managers, Meketa Investment Group

**Table 18 – California Government Code §7514.7 Disclosure, Private Real Assets**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2019 (\$)	2019 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2019 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2019 (\$)	Fees and expenses paid from the Fund to GP and related parties 2019 (\$)					Fees and expenses paid by all portfolio companies 2019 (\$)	Carried Interest Paid 2019 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
Global Infrastructure Partners III, L.P.	1345 Avenue of the Americas, 30th Floor, New York, NY 10105	2016	25,000,000	20,890,181	20,503,335	2,375,886	22,879,221	-	7.2%	1.1	-	416,249	33,213	-	-	101,937	-	-
Lime Rock Partners VIII, L.P.	1111 Bagby St, Suite 4600 Houston, TX 77002	2018	3,200,000	2,226,849	2,370,874	1,236	2,372,110	-	6.76%	1.1	-	60,923	2,901	-	-	10,616	-	-
Kimmeridge Energy Fund V	400 Madison Avenue, Suite 14C, New York, NY	2019	3,800,000	316,098	216,330	-	216,330	-	-68.81%	0.68	-	81,989	24,541	-	-	-	-	-
Global Infrastructure Partners IV, L.P.	1345 Avenue of the Americas, 30th Floor, New York, NY 10105	2019	3,200,000	57,674	13,128	-	13,128	-	NM	NM	-	57,673	283	-	-	-	-	-

Source: Fund managers, Meketa Investment Group



**Table 19 – California Government Code §7514.7 Disclosure, Hedge Funds**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2019 (\$)	2019 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2019 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2019 (\$)	Fees and expenses paid from the Fund to GP and related parties 2019 (\$)					Fees and expenses paid by all portfolio companies 2019 (\$)	Carried Interest Paid 2019 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
DE Shaw Composite International Fund	1166 Avenue of the Americas, 9th Floor New York, NY 10036	N/A	N/A	NA	NA	NA	NA	-	11.29%	2.06	-	787,990	64,316	-	-	964,679	-	964,679
Dymon Asia Macro	1 Temasek Avenue #11-01 Millenia Tower, Singapore 039192	N/A	N/A	NA	NA	NA	NA	-	-0.34%	0.99	-	135,193	10,344	-	-	-	-	-
Hudson Bay Cap Structure Arbitrage Enhanced Fund	777 Third Ave. 30th Floor, New York, NY 10017	N/A	N/A	NA	NA	NA	NA	-	6.45%	1.16	-	260,730	86,753	-	-	922,367	-	922,367
Kepos Alpha Fund	620 8th Ave., 44th Floor, New York, NY 10018	N/A	N/A	NA	NA	NA	NA	-	8.01%	1.34	-	208,832	65,370	-	-	91,657	-	91,657
Keynes Leveraged Quantitative Strategies Fund	9th Floor Orion House, 5 Upper St Martin's Lane London WC2H 9EA	N/A	N/A	NA	NA	NA	NA	-	4.11%	1.17	-	83,437	32,181	-	-	263,688	-	263,688
Man AHL Evolution Frontier	100 St. Paul Street, Suite 800, Denver, CO 80206	N/A	N/A	NA	NA	NA	NA	-	6.57%	1.25	-	215,273	27,051	-	-	150,481	-	150,481
MW Eureka Fund Ltd	350 Park Avenue, 18th Floor New York, NY 10022	N/A	N/A	NA	NA	NA	NA	-	7.33%	1.48	-	346,414	25,724	-	-	103,961	-	103,961
Pharo Macro Fund, Ltd	1370 Avenue of the Americas, 26th Floor New York, NY 10019	N/A	N/A	NA	NA	NA	NA	-	8.01%	1.34	-	455,199	23,291	-	-	280,600	-	280,600
Pine River Fund Ltd	580 California Street, San Francisco, CA 94104	N/A	N/A	NA	NA	NA	NA	-	5.40%	1.44	-	6,632	(5,742)	-	-	-	-	-
Pine River Volatility Arbitrage Fund	580 California Street, San Francisco, CA 94104	N/A	N/A	NA	NA	NA	NA	-	0.39%	1.01	-	79,713	87,684	-	-	33,189	-	33,189
Sandler Plus Fund	711 5th Ave #15, New York, NY 10022	N/A	N/A	NA	NA	NA	NA	-	8.14%	1.65	-	264,804	39,053	-	-	-	-	-
Senator Global Opportunity Offshore Fund Ltd	510 Madison Ave # 28, New York, NY 10022	N/A	N/A	NA	NA	NA	NA	-	6.44%	1.52	-	185,197	49,509	-	-	398,627	-	398,627
Systematica Alternative Markets Master Fund	650 Fifth Ave New York, NY 10019	N/A	N/A	NA	NA	NA	NA	-	4.40%	1.11	-	45,553	24,991	-	-	120,729	-	120,729
Systematica Trend Following Fund	650 Fifth Ave New York, NY 10019	N/A	N/A	NA	NA	NA	NA	-	4.40%	1.11	-	35,512	24,991	-	-	-	-	-
Tempo Volatility Fund	1 Greenwich Plaza, Greenwich, CT 06830	N/A	N/A	NA	NA	NA	NA	-	5.42%	1.19	-	218,446	67,079	-	-	116,723	-	-

Source: Fund managers, State Street, ORS