



Investment Program

INVESTMENT PROGRAM DEVELOPMENT

A long-term strategic transition

Introduction

Following the financial crisis, the investment program began a transition from traditional public pension system to modern investment organization. The transition touched elements of the assets, liabilities, and administration, but this presentation focuses on the changes to the Investment Program.

This presentation is intended to be a living document that puts the present Investment Program status into the context of this larger transition, ties current Investment Program projects and topics into a goals-based framework, and provides clarity on specific deliverables and actions in the near future.

June 2017

Staff has added slide #6, showing the organizational structure that existed past few years, to juxtapose against the near-term current organizational structure (slide #7). The new slide #8 shows the change in functional allocation of time by staff as a result of shifting roles and responsibilities. Slide 15 has also been updated with the most recent forward calendar.

Long-Term Strategic Transition

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Governance	Cortex I	Ad hoc committees									
			Cortex II		Measure G						
				Committee Charters: Audit (2012, 2016), Governance (2013, 2016), Investment (2012, 2015), Joint Personnel (2016)							
				Position Charters: Board of Administration (2012, 2015), Board Chair (2012, 2013, 2016), Vice Chair (2013, 2016), Chief Executive Officer (2012, 2015), Chief Investment Officer (2012, 2015)							
				Policies: Attendance (Fed-2016), Board Communications (2012, 2015), Board Education (2012, 2013, 2016), Board Operations (Fed-2014), Board Performance Assessment (2012), Code of Conduct (2012, 2013, 2016), Monitoring & Reporting (2012, 2015), Personnel Review Policy (2013, 2016), Election of Board Officers (2013, 2016), Strategic Planning (2012), Overpayment/Underpayment of Members’ Retirement Contributions (2015), Overpayment/Underpayment of Benefits Correction (2015), Travel (2015), Vendor Selection (2012, 2015)							
									Cortex procedure docs.		
Team	see slide #4										
Infrastructure	P&F General Consultant: NEPC								Meketa		
	SIS	Fed General Consultant: Meketa									
			Absolute Return Consultant: Albourne								
							Compliance System: State Street				
							Performance System: State Street				
							Risk System: State Street		MSCI		
									Risk Consultant: Verus		
									Dynamo RMS		
						Albourne Process Review					
Investment Structure & Process	Diversification					6-27-2017 JOINT IC ITEM #4					
						Investment Process Formalization					

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Federated Board	Matt Loesch										
	Ed Overton										
	Ash Kalra		Michael Armstrong *								
	Jeffrey Perkins		Martin Dirks *								
		Arn Andrews				L. T.		Udaya Rajbhandari			
	David Busse			Lara Druyan *						Anurag Chandra *	
	Pete Constant		Stuart Odell *					Elizabeth Rounds *		P. P. *	
Police & Fire Board	Sam Liccardo		Vincent Sunzeri *								
	Scott Johnson			Richard Santos							
	Rose Herrera			Andrew Lanza *							
	David Bacigalupi				Nick Muyo						
	Bill Brill		Damon Krytzer *				Stephen Brennan *				
			Sean Bill *					Jeremy Evnine *			
			M.F.*		Elizabeth Rounds *			Ghia Griarte *			
	Keith Keesling	Sean Kaldor						Andrew Gardanier			
	Conrad Taylor				James Mason					Franco Vado	
	Investment Program	Russell Crosby					Roberto Peña				
Carmen Racy-Choy					Arn Andrews						
Ali Amiry		Daryn Miller									
		Ryan Jusko		M.K.H.		Brian Starr					
		Michael Moehle		Jay Kwon							
		Heidi Poon									
Ron Kumar											
Ceara O’Fallon				Aynur Yeniay				Dhinesh Ganapathiappan			
			Tram Doan					Viktoria Tubaltsev			
						Sue Griffiths				6-27-2017 JOINT IC ITEM #4	

* denotes independent Board trustees

Governance

Cortex I

- August 2008 City Auditor findings of abuse of travel policy by Board members and Staff.
- September 2008 City Council approves an RFP that results in Cortex being retained to review Board governance and structure.
- June 2009 Publication of initial recommendations, subsequently revised September 2009.
- February 2010 City Council approves a sub-set of one part of Cortex's set of recommendations (independent board members).

Cortex II

- July/August 2011 Boards retain Cortex as Governance Consultant, for deliverables on the roles and responsibilities of the Board and Staff, staffing structure and salary range, policies and procedures, strategic planning, education and training planning, and communications protocol.
- May 2013 Governance Committee accepts Cortex report. It recommends the Boards direct Staff to conduct a feasibility assessment of the recommendations, and that the Boards form a Joint Ad Hoc committee to work with stakeholders to achieve implementation of Cortex recommendation #1 (the Retirement Boards be granted full authority to administer their Systems).

Measure G

- November 2014 Ballot measure approved by voters, allowing the Boards to hire an at-will CEO and CIO, exclude future Staff from classified civil service and the City's defined benefit plans, and set stipends for independent Board members.

Cortex procedures documentation

- June 2017 Staff intends to engage Cortex to help develop a comprehensive outline of processes, evaluate/formalize processes for further development, and document the processes in the existing or future form.

Team Structure: 2014-2017

CHIEF EXECUTIVE OFFICER
Roberto Peña

CHIEF INVESTMENT OFFICER
Arn Andrews

INVESTMENT MANAGEMENT

Sr. Investment Officer
Absolute Return
GTAA/Opportunistic

Daryn Miller, CFA

Investment Officer
Global Equity

Jay Kwon, CFA

Investment Officer
Global Fixed Income
Private Debt

Brian Starr, CFA

Investment Officer
Real Assets
Private Equity

Ron Kumar

Investment Officer

(vacant)

Investment Analyst
Dhinesh Ganapathiappan

Investment Analyst
(vacant)

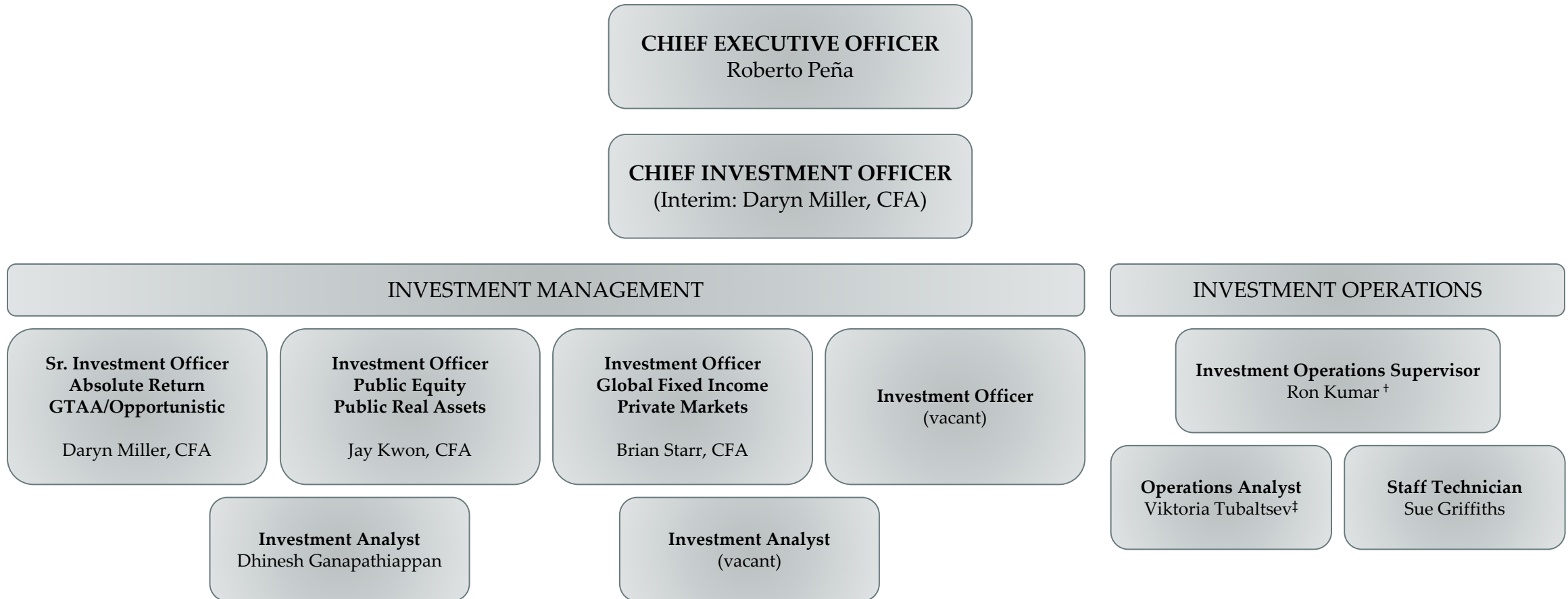
INVESTMENT OPERATIONS

Operations Analyst
Aynur Yeniay /
Viktoria Tubaltsev†

Staff Technician
Sue Griffiths

† Temporary employee.

Team Structure: Current



[†] Position in final stages of completion.

[‡] Temporary employee.

Team Functions

		Andrews	Miller	Kwon	Starr	Kumar	Ganapathiappan	
INVESTMENT MANAGEMENT	ADMINISTRATION	70% → 0%	0% → 40%	-	-	10%	-	80% → 50%
	Macro / Asset Allocation	25% → 0%	10% → 30%	20% → 30%	20% → 30%	-	0% → 10%	75% → 100%
	Risk Management	5% → 0%	10% → 20%	-	-	-	0% → 10%	15% → 30%
	GTAA/Opportunistic	-	30% → 20%	-	-	-	10% → 30%	40% → 50%
	Absolute Return	-	50% → 40%	-	-	-	0% → 10%	60% → 70%
	Global Equity	-	-	80%	-	-	0% → 10%	80% → 90%
	Global Fixed Income	-	-	-	40% → 30%	-	0% → 10%	40%
	Private Debt	-	-	-	40% → 20%	-	-	40% → 20%
	Private Equity	-	-	-	0% → 20%	20% → 0%	-	20%
	Real Assets	-	-	0% → 10%	0% → 20%	40% → 0%	0% → 20%	40% → 50%
	Middle Office functions	-	-	-	-	20% → 60%	60% → 10%	80% → 70%
OPERATIONS	Back Office functions	-	-	-	-	10% → 30%	30% → 10%	40%
		100% → 0%	100% → 150%	100% → 120%	100% → 120%	100% → 100%	100% → 120%	100% → 120%

Investment Management Team

Daryn Miller, CFA

Interim CIO / Senior Investment Officer

Daryn joined the Investment Program in 2011 and currently oversees the Absolute Return and GTAA/Opportunistic allocations as well as being responsible for the risk management initiative, rebalancing, and tactical decision-making. Before building out the Absolute Return and GTAA programs, Daryn managed the Global Equity asset class. Prior to joining the City of San José, Daryn spent five years with Goldman Sachs, where he was a Vice President in equity research, focusing on the healthcare services sector. In addition, Daryn has held accounting and finance positions in the technology sector.

MBA, University of Southern California

BA, Vanguard University

Brian Starr, CFA

Investment Officer

Brian joined the Investment Program in 2014 and currently oversees the Global Fixed Income and Private Markets allocations. Prior to joining the City of San José, he spent three years at City and County of San Francisco, where he was an investment analyst and trader for the City's \$6 billion operational and surplus cash portfolio. Before entering the public sector, Brian worked in several investment disciplines including: investment advisory services, real estate private equity and investment banking.

MBA, EDHEC Business School

BA, University of California, Santa Barbara

Jay Kwon, CFA, CAIA

Investment Officer

Jay joined the Investment Program in 2014 and currently oversees the Public Equity and Public Real Assets allocations. Prior to joining the City of San José, he spent eleven years at Bank of New York Mellon, where he was a senior portfolio manager for derivatives-based risk hedging solutions. Before Bank of New York Mellon, Jay worked as a financial analyst from the Federal Home Loan Bank and as a research analyst for an energy and environmental economics firm.

MBA, University of Oxford

MA, California State University, East Bay

BA, Stanford University

Dhinesh Ganapathiappan, CIPM

Investment Analyst

Dhinesh joined the Investment Program in 2016 as an investment analyst. Prior to joining the City of San José, Dhinesh spent seven years with State Street, where he was an assistant vice president, providing performance, attribution, and risk consulting to institutional clients.

BA, University of California, Davis

Infrastructure

Consultants

- General Support the Board and Staff in asset allocation, asset class structuring, manager selection/monitoring, reporting
- Absolute Return Assist Staff with Absolute Return structuring, manager selection/monitoring, reporting
- Risk Guide the Board with in developing enterprise risk tolerance, risk philosophy and policies; manages the risk system and risk reporting; assists Staff with identification and management of risk

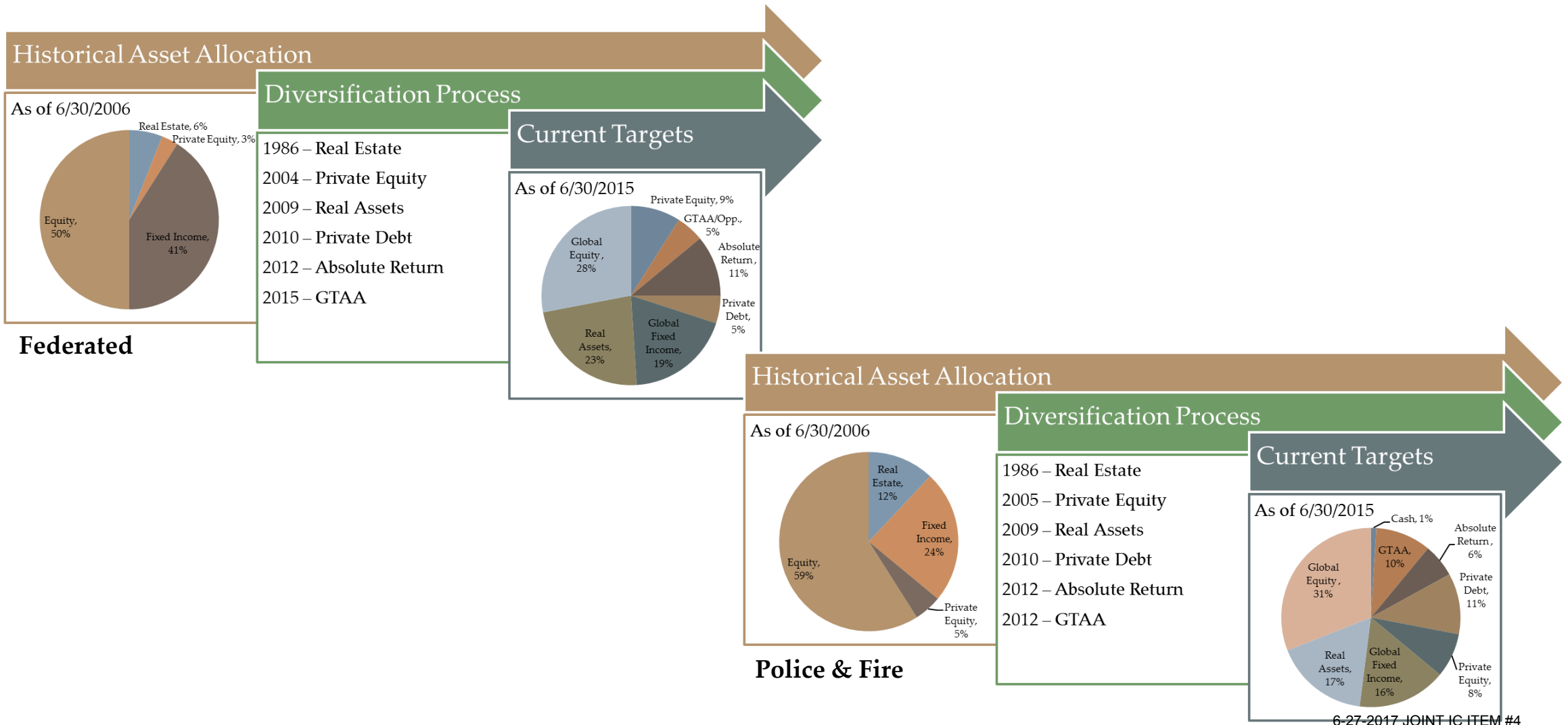
Systems

- Compliance Streamline monitoring manager compliance with established investment guidelines
- Performance Serve as official book of record and investment performance data engine behind attribution and analytics
- Risk Tool to understand expected risk levels, current factor exposures, stress tests, and the impact of reallocating assets

Documentation

- RMS Centralized repository to store and access detailed information on past, current, and prospective investments
- Process Review Independent review and formalization of due diligence processes for manager selection and monitoring

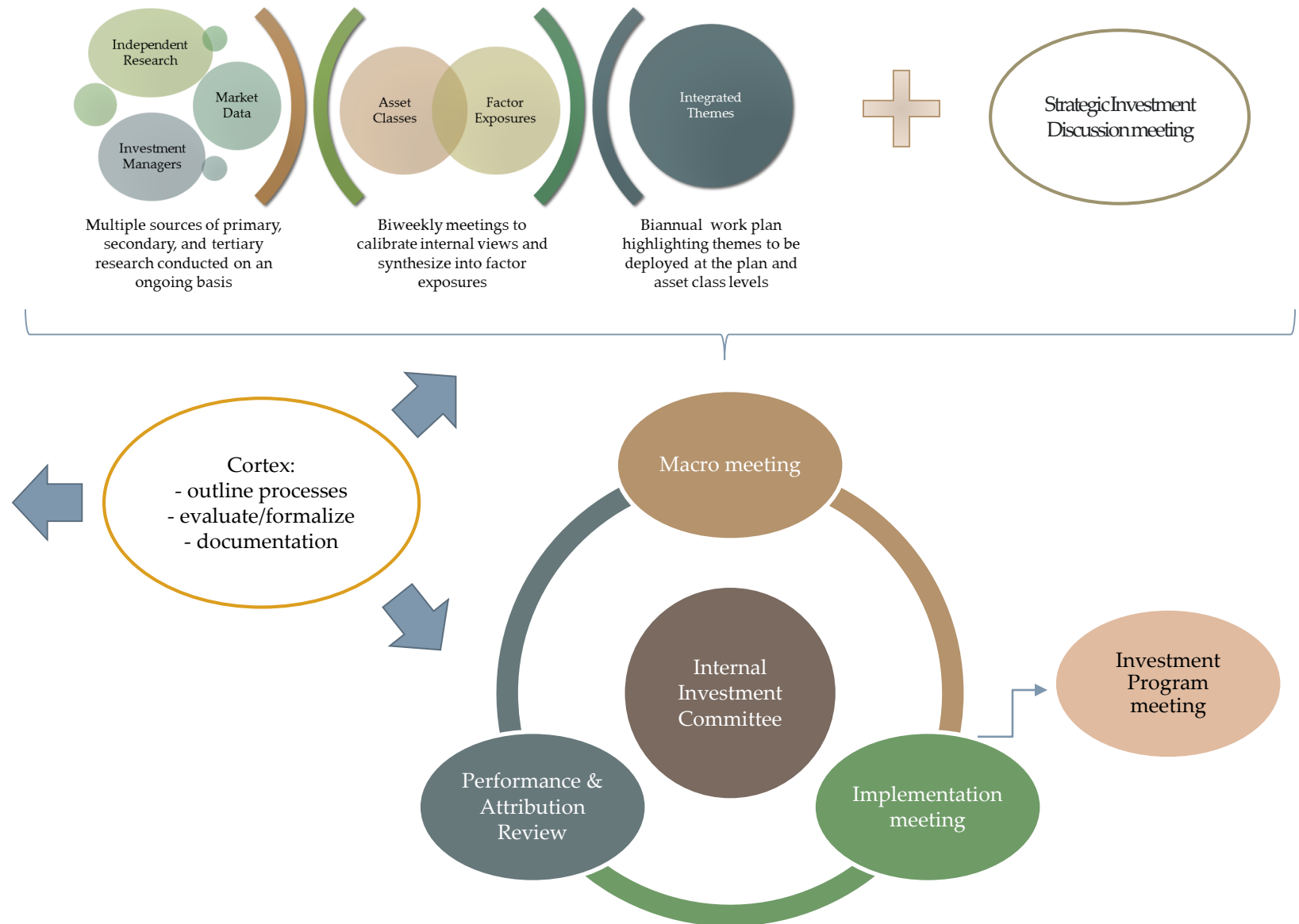
Investment Structure & Process



Investment Process Formalization and Development

Function/Process

- | |
|---------------------------------|
| a. Investment function |
| i. Risk management |
| ii. Strategic asset allocation |
| iii. Tactical asset allocation |
| iv. Asset class structuring |
| v. Manager selection |
| vi. Performance analysis |
| b. Operations function |
| i. Custody/Cash handling |
| ii. Accounting/Reporting |
| iii. Compliance and legal |
| iv. Process/Document management |
| c. Organizational function |
| i. Team structure and staffing |
| ii. Governance and policy |
| iii. Audit and reporting |



Investment function > Performance analysis > Performance Attribution & Review project

Meeting details

Purpose: Discuss monthly performance and attribution at multiple levels, including 1) plan, 2) asset class, 3) sub-asset class, and 4) manager. Discuss attribution analysis including 1) allocation effect – asset class and sub-asset class level, and 2) selection effect. Allocation, tactical and manager level performance is discussed and questioned by the team.

Frequency: Monthly, third or fourth Thursday

Attendance: CIO, Investment Officers, Investment Analysts

Meeting Chair: Dhinesh Ganapathiappan

Materials: Established meeting format (i.e. no agenda); monthly internal flash performance and/or quarterly consultant performance reports; attribution analysis.

Goals

- Team scrutiny and oversight of plan performance.
- Foster culture of questioning, reflection, and accountability.

Output

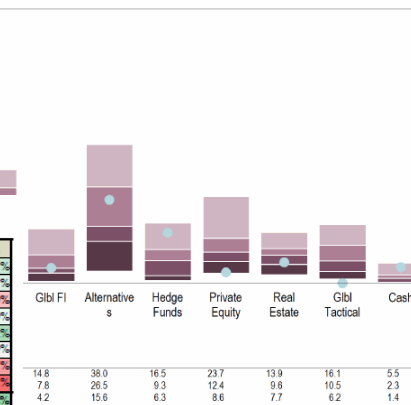
- Watch list – positioning and/or investment managers that will receive a heightened level of due diligence.
- Team request for additional research or due diligence on positioning and/or investment managers that are to be brought to a Macro meeting, Internal Investment Committee meeting, or Implementation meeting.

	Ending Mkt Value (mm)	Ending Weight	1 Mth	3 Mth	CYTD	FYTD	1 Year	Incept Date
Global Equity	581.3	28.8	2.1	5.9	8.5	16.0	14.3	May-10
MSCI ACWI IMI Index			1.6	5.6	8.5	16.0	15.4	
Excess			0.5	0.2	0.0	0.0	-1.1	
Global Equity	159.8	7.9	3.1	7.0	8.7	21.3	19.5	Jul-15
MSCI ACWI IMI Index			1.6	5.6	8.5	16.0	15.4	
Excess			1.5	1.4	0.2	5.3	4.1	
Artisan Global Value	160.7							
MSCI ACWI Value Index								
Excess								
Russell Currency Hedging Acct	-0.9							
US Equity	76.6							
Russell 3000 Index								
Excess								
Northern Trust Russell 1000	65.7							
Russell 1000 Index								
Excess								
Cove Street Small Cap Value	33.1							
Russell 2000 Value Index								
Excess								
Russell Overlay - US Eq Notional	-22.1							
International Equity	194.1							

Total Plan Allocation vs. InvestorForce Public DB > \$1B Net
As of March 31, 2017

1-Month Plan Attribution

Asset Class	Wt	BM Wt	Diff	Return	BM Ret	Diff	Allocation	Selection	Total
Global Equity	28.3%	31.0%	-2.7%	2.0%	1.6%	0.4%	0.0%	0.1%	0.1%
Private Equity	7.9%	8.0%	-0.1%	1.0%	0.0%	1.0%	0.0%	0.1%	0.1%
Global Fixed	16.4%	16.0%	0.4%	0.9%	1.2%	-0.3%	0.0%	0.0%	0.0%
Private Debt	6.9%	11.0%	-4.1%	1.3%	1.1%	0.3%	0.0%	0.0%	0.0%
Real Assets	16.0%	17.0%	-1.0%	0.6%	-0.4%	1.0%	0.0%	0.1%	0.2%
Absolute Return	8.2%	6.0%	2.2%	0.7%	0.1%	0.6%	0.0%	0.1%	0.0%
GTAA	9.1%	10.0%	-0.9%	0.7%	1.4%	-0.7%	0.0%	-0.1%	-0.1%
Cash	7.2%	1.0%	6.2%	0.1%	0.1%	0.0%	-0.1%	0.0%	-0.1%



1-Month Asset Class Attributions

Global Equity	Wt	BM Wt	Diff	Return	BM Ret	Diff	Allocation	Selection	Total
US Equity	Fund	Inception	Cum Return	Ann Return	Rank	Percentile	Std Dev	Rank	Percentile
International Equity	DAVIDSON KEMPNER INST PARTNERS	2/1/2013	22.54%	5.33%	4 of 10	33%	2.19%	1 of 10	0%
Emerging Markets Equity	HFRI EVENT-DRIVEN		16.48%	4.43%		4.69%			0.92
Marketable Alternative Equity	Canyon Value Realization Fund		22.40%	5.30%		4.42%			1.17
	Empyrean Capital Partners		31.66%	7.27%		5.11%			1.40
	Farallon Capital Offshore		22.12%	5.23%		4.00%			1.28
Global Fixed Income	Luxor Capital Partners		-10.70%	-2.88%		9.65%			-0.31
Global Core	Mason Capital Fund		-0.18%	-0.08%		9.43%			-0.02
Non-Investment Grade Credit	Ovul Creek Overseas Fund		47.70%	10.47%		10.33%			0.98
Emerging Markets Debt	Senator Global Opportunity Fund		32.89%	7.83%		6.95%			1.06
	York Multi-Strategy		3.18%	0.80%		8.84%			0.08
	SENATOR GLOBAL OPPORTUNITY FUND, LP	4/1/2013	24.49%	6.02%	5 of 11	40%	6.76%	5 of 11	40%
Real Assets	HFRI EVENT-DRIVEN		16.88%	4.25%		4.78%			0.86
Real Estate	Archer Capital Master Fund		7.94%	2.06%		5.49%			0.35
Commodities	Empyrean Capital Partners		29.69%	7.18%		5.20%			1.36
Infrastructure	Farallon Capital Offshore		19.19%	4.79%		4.04%			1.16
	Pu Tree Value Fund		2.89%	0.76%		9.22%			0.07
	Highfield Capital		32.17%	7.72%		8.32%			0.91
	Luxor Capital Partners		-13.10%	-3.67%		9.79%			-0.39
	Mason Capital Fund		-4.19%	-1.13%		8.38%			-0.15
	Ovul Creek Flagship Funds		36.18%	8.58%		10.40%			0.81
	Third Point Fund		27.54%	6.70%		7.76%			0.85
Largest Over/Underwe	SANDLER PLUS OFFSHORE FUND, LTD	5/1/2013	27.01%	6.74%	3 of 7	33%	8.83%	5 of 7	67%
Asset Class	HFRI EQUITY HEDGE		15.41%	3.99%		5.92%			0.65
Global Equity	Newbrook Capital		13.01%	3.39%		7.65%			0.43
Private Equity	Perman Windward		0.04%	0.01%		6.77%			-0.02
Global Fixed Income	Soroban Capital Partners		39.41%	9.49%		10.76%			0.87
	Southpoint Fund		32.76%	8.04%		6.95%			1.14
	Valnor Capital Partners		20.33%	5.18%		10.37%			0.79
	HORIZON ASSET MANAGEMENT	7/1/2013	19.09%	5.12%	2 of 7	17%	2.70%	1 of 7	14%

6-27-2017 JOINT IC ITEM #4

Investment Committee Deliverables		Produced by	Frequency	Months Presented											
<i>Allocating</i>															
	Asset-Liability Study	General consultant	At least every three years	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Economic & Financial Market Outlook	Staff	Every six months	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Capital Market Assumptions	General consultant / Staff	At least annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Asset Allocation	General consultant / Staff	Annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Prefunding Plan	Staff	Annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<i>Implementation & Positioning</i>															
	Project & Deliverables Calendar	Staff	At least every six months	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Asset Class Reviews	Staff	Annually for each asset class	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Equity Tactical Asset Allocation Update	Staff	Every six months	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Private Equity Pacing Plan	General consultant / Staff	Annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Private Debt Pacing Plan	General consultant / Staff	Annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Private Real Assets Pacing Plan	General consultant / Staff	Annually	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<i>Reporting</i>															
	Flash Performance	Staff	Monthly / ~3 weeks lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Quarterly Performance	General consultant	Quarterly / ~2 months lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Absolute Return Performance	Absolute return consultant	Quarterly / ~2 months lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Private Markets Performance	General consultant	Quarterly / ~5 months lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Fee Report (directly to Board)	Staff	Annually / ~8 months lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Investment Risk Report	Risk consultant / Staff	TBD	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Dashboards (P&F; directly to Board)	Staff	Quarterly / ~3 months lag	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

<p>Tuesday, June 27 Investment Committee</p> <ul style="list-style-type: none"> • Economic & financial market outlook • Pension asset allocation • Prefunding plan • 4Q16 Private markets performance (Fed) • Investment Program development discussion • Passive fixed income recommendations (2) • Closed session presentation (1) and recommendations (2) 	<p>Thursday, August 3 Police & Fire Board</p> <ul style="list-style-type: none"> • Economic & financial market outlook • Pension asset allocation (decision) • Prefunding plan (decision) • 2016 Fee report • Investment Program development presentation • Closed session recommendation (1) 	<p>Thursday, August 17 Federated Board</p> <ul style="list-style-type: none"> • Economic & financial market outlook • Pension asset allocation (decision) • Prefunding plan (decision) • 2016 Fee report • 4Q16 Private markets performance • Investment Program development presentation • Closed session recommendation (1)
<p>Tuesday, August 22 Investment Committee</p> <ul style="list-style-type: none"> • Projects & deliverables calendar • Health Care Trust asset allocation • Global Equity asset class review • Update to IPS: Cash asset class, Opportunistic (P&F) • Rhumblin Infrastructure analysis • 2Q17 Quarterly performance • 2Q17 Absolute return performance • 4Q16 Private markets performance (P&F) • Able Noser presentation (equity trade cost analysis) • Investment Program development discussion 	<p>Thursday, September 7 Police & Fire Board</p> <ul style="list-style-type: none"> • Projects & deliverables calendar • Health Care Trust asset allocation • Update to IPS: Cash asset class, Opportunistic • 2Q17 Quarterly performance • 2Q17 Absolute return performance • 4Q16 Private markets performance • Able Noser contract approval 	<p>Thursday, September 21 Federated Board</p> <ul style="list-style-type: none"> • Projects & deliverables calendar • Health Care Trust asset allocation • Update to IPS: Cash asset class • 2Q17 Quarterly performance • 2Q17 Absolute return performance • Able Noser contract approval
<p>Tuesday, September 26 Investment Committee</p> <ul style="list-style-type: none"> • Asset allocation process review • Global Fixed Income asset class review • Private Debt pacing plan • Private Real Assets pacing plan • 1Q17 Private markets performance • Due Diligence Process Review recommendations implementation update 	<p>Thursday, October 5 Police & Fire Board</p> <ul style="list-style-type: none"> • Asset allocation process review • Private Debt pacing plan • Private Real Assets pacing plan • 1Q17 Private markets performance 	<p>Thursday, October 19 Federated Board</p> <ul style="list-style-type: none"> • Asset allocation process review • Private Debt pacing plan • Private Real Assets pacing plan • 1Q17 Private markets performance

Summary of past updates

May 2017

The initial version of this document emphasizes the stabilization and development status of the Investment Program relative to the early years of the transition. It highlights Staff's plans to, rapidly:

- (a) respond to several requests/inquiries made by the Investment Committee over the past year;
- (b) continue formalizing and developing the processes that have evolved during the transition period;
- (c) solicit outside expertise in the formalization, development, and documentation of processes, utilizing the same process used by City Council and the Boards in the past.