SEWERAGE & WATER BOARD OF NEW ORLEANS

PENSION COMMITTEE MEETING
MONDAY, FEBRUARY 15, 2016
TIME: 3:00 PM
625 ST. JOSEPH STREET
2ND FLOOR BOARD ROOM

COMMITTEE MEMBERS

Mr. Joseph Peychaud, Chair • Mr. Scott Jacobs, Vice-Chair • Mr. Alan Arnold • Eric Blue •
Mr. Harold Heller, Jr. • Mr. Marvin Russell • Mr. Gerald Tilton • Mr. John Wilson

FINAL AGENDA

ACTION ITEMS

PRESENTATION ITEMS

1. Asset Allocations Currently Used by Top 10 U.S. Public Pensions
2. Asset Allocation Studies that are Available from Wilshire or Cambridge from their Research on Public Pensions
3. Review of the FFC December 2015 Flash Performance Report

INFORMATION ITEMS

4. Review of Previous Report
5. SWBNO Employee' Retirement System Investment Policy Statement
6. SWBNO Asset Allocation Assumptions (SWBNOERS 2016 Global Asset Allocation Recommendation)
7. Any Other Matters

"RE-BUILDING THE CITY'S WATER SYSTEMS FOR THE 21ST CENTURY"

Sewerage & Water Board OF NEW ORLEANS

MITCHELL J. LANDRIEU, President

625 ST. JOSEPH STREET
NEW ORLEANS, LA 70165 • 504-529-2837 OR 52W-ATER
www.swbno.org

January 14, 2016

The Pension Committee of Sewerage and Water Board of New Orleans met on Wednesday, January 14, 2016 at 8:15AM in the Board Room at 625 St. Joseph Street.

ATTENDANCE:

PRESENT: Mr. Joseph Peychaud (Chairperson)
Mr. Eric Blue
Mr. Scott Jacobs
Mr. Marvin R Russell, Jr.
Mr. Gerald Tilton
Mr. John H. Wilson III

ABSENT: Mr. Alan Arnold
Mr. Harold Heller, Jr.

Also in attendance were Cedric S. Grant, Executive Director; Robert K. Miller, Deputy Director; Nolan P. Lambert, Special Counsel, Director's Office, Continuous Improvement, Finance and Personnel Department staff; Octave Francis, Steven Daste and Melanie Parent of FFC Capital Management and John Weiler of Weiler & Rees.

MR.GRANT'S READING INTO THE COMMITTEE MEETING'S RECORD:

Mr. Grant read into the record a letter from Mr. Alan Arnold. Mr. Arnold's letter addressed his feeling that there is no reason to rush to judgement on the January 14, 2016 ACTION ITEM 1.

ACTION ITEM 1: RECEIPT OF SWBNO 20 YEAR CAPITAL MARKET ASSUMPTIONS

Mr. Francis presented FFC's analysis of SWBNO Capital Market Assumptions - under 20 Year Capital Market Assumptions

Mr. Wilson motioned to receive FFC's SWBNO Capital Market Assumptions. Upon a second by Mr. Russel, the motion passed

ACTION ITEM 2: RECOMMEDATION TO REMOVE AD HOC LEGACY REPORTS FROM FUTURE AGENDAS

Mr. Miller presented staff's position that the following reports no longer serve their original value added objectives to the Committee and should no longer be included on future Pension Committee Agendas.

- Voluntary Retirements
- Investment Managers Report for actively managed investment funds
- LAMP Summary Statement of Activity
- Security Lending Report
- Money Managers Report
- Pension Employer/Employee Contribution and Distribution Statement

Mr. Wilson motioned to remove the aforementioned reports from future Pension Committee Agendas. Upon a second by Mr. Jacob, the motion passed.

ADJOURNMENT:

There being no further business to come before the Committee, the meeting adjourned at approximately 11:03AM

Respectfully Submitted,

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Joseph Peychaud
Chairman

Largest Pension Funds

Portfolio Number	1	2	3	4	5	6	7	8
	SWBNO Proposed Allocation	***CALPERS***	***CALSTRS***	***NY Public Pension***	***NY Comptroller Office***	***Florida State Board***	***Texas Teachers***	***NY Teachers Retirement***
Mandate	**Proposed**	**Current**	**Current**	**Current**	**Current**	**Current**	**Current**	**Current**
EQUITY	**61.50**	**62.30**	**64.90**	**59.00**	**59.00**	**62.10**	**57.80**	**60.54**
US Equity	*46.50*	*52.20*	*55.70*	*33.00*	*36.00*	*55.90*	*20.60*	*44.53*
Intl Equity	*10.00*			*17.00*	*15.00*		*24.70*	*16.01*
Private Equity		*10.10*	*9.20*	*7.00*	*8.00*	*6.20*	*12.50*	
REITS	*5.00*			*2.00*				
FIXED INCOME	**28.50**	**24.70**	**19.40**	**36.00**	**29.00**	**21.40**	**15.90**	**31.26**
Fixed Income	*28.50*	*19.80*	*16.20*	*33.00*	*26.00*	*20.90*	*8.70*	*25.87*
Cash & Cash Equivalents	1*	*1.00*	*2.30*	*3.00*	*3.00*	*0.50*	*0.50*	*5.39*
Inflation Sensitive		*3.90*	*0.90*				*4.60*	
Risk Parity							*2.10*	
ALTERNATIVES	**10.00**	**13.70**	**15.70**	**6.00**	**13.00**	**16.50**	**26.30**	**8.20**
Commodities		*1.30*					*2.00*	
Multi-Strategy/Absolute/Hedge Funds	*10.00*	*1.20*	*1.80*	*2.00*	*5.00*		*11.40* 7*	
Real Asset/Real Estate		*9.60*	*13.90*	*4.00*	*7.00*	*9.00*	*12.90*	
Infrastructure/Forestland		*1.60*						
Opportunistic Fund/Strategic Investments					*1.00*	*7.50*		
	100.00							
Total Actual Invested	207.917(M)	283.90(B)	186.1(B)	155.120(B)	184.502(B)	139.231(B)	127.042(B)	73.227(B)
Funded Ratio (2014)	78%	77%	69%	68%	97.9%/99% 5*	87%	80%	68%

2 CALPERS asset allocation data is as of Sept 2015 <https://www.calpers.ca.gov/page/investments/asset-classes/asset-allocation-performance>
3 CALSTERS asset allocation data is as of Dec 2015 <http://www.calstrs.com/current-investment-portfolio>
4 NYC Public Pension asset allocation is as of Sept 2015 <http://comptroller.nyc.gov/general-information/pension-funds-asset-allocation/>
4 NYC Public Pension is a composite of the NY Teachers, employees, police, fire, and board of education
5 NY State Comptroller asset allocation is as of Mar 2015 <http://www.osc.state.ny.us/retire/word_and_pdf_documents/publications/cafr/cafr_15.pdf>
6 Florida State Board asset allocation is as of Sept 2015 <http://www.sbafla.com/fsb/Portals/Internet/Reports/Trustees/20150930_Trustees_Performance_Report.pdf>
7 Texas Teachers asset allocation is as of Aug 2015 <http://www.trs.state.tx.us/about/documents/cafr.pdf>
8 New York Teachers Retirement asset allocation is as of June 2015 <https://www.trsnyc.org/WebContent/publications/cafr.pdf>
9 State of Wisconsin Investment Board - Total Core Fund asset allocation is as of Dec 2014 <http://www.swib.state.wi.us/assetclasses.aspx>
10 North Carolina Department of State Treasurer asset allocation is as of Sept 2015 <https://www.nctreasurer.com/inv/IAC%20Resources/IACPerformanceReview-111815.pdf>
11 New Orleans Municipal Employees' Retirement System asset allocation are target allocations in the IPS
12 Louisiana State Employees' Retirement System asset allocation are target allocations in the CAFR <http://www.lasersonline.org/uploads/2015_CAFR_webFinal.pdf>
13 Teachers' Retirement System of Louisiana asset allocation are target allocations in the CAFR <https://www.trsl.org/uploads/File/Annual%20Reports/2015_CAFR_web.pdf>

1* SWBNO Current Allocation for Cash & Cash Equivalents includes residual assets
2* Trust Level includes: Absolute Return Strategy; Multi-Asset Class; and Overlay, Transition, and Plan Level
5* The fund is split into two NY State & Local Employees' Retirement System (ERS) and NY State & Local Police & Fire Retirement System (PFRS); ratios are shown respectively. It is noted "In the years ahead, this ratio will be volatile."
7* Two types of hedge funds directional hedge funds (in equity) and stable value hedge funds (in stable value)
8* International Investments merged into equity, no specific delineations in international investments
8** Did not delineate alternatives
9* Self-calculated using the most recent annual report stating that "The unfunded capital commitments for private equity, real estate and multi asset investments not reported on the Core Fund's Statement of the Net Investment Position totaled $6.2B as of December 31,2014.
10* Opportunistic Fixed Income
11* Total fund value as of 6/30/2015
11** Funded ratio gathered from Conefry & Company, LLC 2015 report <http://www.nola.gov/nomers/documents/annual-actuarial-valuations/2015-annual-actuarial-valuation/>
12* Represented in the CAFR as Global Asset Allocation
12** Funded ratio gathered from Foster & Foster 2015 report actuarial report <http://www.lasersonline.org/uploads/LASERSValuation2015.pdf>
13* Market Value is as of 12/31/2015 <https://www.trsl.org/uploads/File/Investments/Perform_Dec2015.pdf>

Most of the funded ratio's come from http://pension360.org/dashboard/

Louisiana Pension Funds

Portfolio Number	1	11	12	13
	SWBNO Proposed Allocation	***NOMERS***	***LASERS***	***TRSL***
Mandate	**Proposed**	**Current**	**Current**	**Current**
EQUITY	**61.50**	**68.00**	**70.00**	**50.00**
US Equity	*46.50*	*44.00*	*27.00*	*31.00*
Intl Equity	*10.00*	*14.00*	*30.00*	*19.00*
Private Equity		*5.00*	*13.00*	
REITS	*5.00*	*5.00*		
FIXED INCOME	**28.50**	**27.00**	**12.00**	**21.00**
Fixed Income	*28.50*	*25.00*	*12.00*	*21.00*
Cash & Cash Equivalents	1*	*2.00*		
Inflation Sensitive				
Risk Parity				
ALTERNATIVES	**10.00**	**5.00**	**18.00**	**29.00**
Commodities				
Multi-Strategy/Absolute/Hedge Funds	*10.00*	*5.00*	*8.00*	
Real Asset/Real Estate			*3.00*	*7.00*
Infrastructure/Forestland				
Opportunistic Fund/Strategic Investments			***7.00*** 12**	
	100.00	*100.00*	*100.00*	*100.00*
Total Actual Invested	207.917(M)	364.054(M) 11*	11.290(B)	16.291(B)
Funded Ratio (2014)	78%	72% 11**	62% 12*	61%

2 CALPERS asset allocation data is as of Sept 2015 <https://www.calpers.ca.gov/page/investments/asset-classes/asset-allocation-performance>
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8 New York Teachers Retirement asset allocation is as of June 2015 <https://www.trsnyc.org/WebContent/publications/cafr.pdf>
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13* Market Value is as of 12/31/2015 <https://www.trsl.org/uploads/File/Investments/Perform_Dec2015.pdf>

Most of the funded ratio's come from http://pension360.org/dashboard/

Wilshire

Wilshire Consulting

2015 Report on State Retirement Systems: Funding Levels and Asset Allocation

February 25, 2015

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Summary of Findings

- The following study includes 131 state retirement systems. Of these 131 retirement systems, 92 systems reported actuarial values on or after June 30, 2014 and 39 systems last reported prior to that date.
- Wilshire Consulting estimates that the ratio of pension assets-to-liabilities, or *funding ratio*, for all 131 state pension plans was 80% in 2014, up from 74% in 2013. Global stock markets rallied strongly over the twelve months ended June 30, 2014, augmenting the positive performance of global fixed income and allowing pension asset growth to outdistance the growth in pension liabilities over fiscal 2014. (Exhibit 1)
- For the 92 state retirement systems that reported actuarial data for 2014, pension assets and liabilities were $2,046.5 billion and $2,672.0 billion, respectively. The funding ratio for these 92 state pension plans was 77% in 2014, up from 70% for the same plans in 2013. (Exhibit 2)
- For the 92 state retirement systems that reported actuarial data for 2014, pension assets grew by 13.7%, or $247.0 billion, from $1,799.5 billion in 2013 to $2,046.5 billion in 2014 while liabilities grew 4.7%, or $118.8 billion, from $2,553.2 billion in 2013 to $2,672.0 billion in 2014. These 92 plans saw their aggregate shortfall, or net pension liability, decrease $128.2 billion over fiscal 2014 from -$753.7 billion to -$625.6 billion. (Exhibit 2)
- For the 131 state retirement systems that reported actuarial data for 2013, pension assets and liabilities in that year were $2,726.8 billion and $3,704.5 billion, respectively. The funding ratio for these 131 state pension plans was 74% in 2013. (Exhibit 1)
- Of the 92 state retirement systems that reported actuarial data for 2014, 87% have market value of assets less than pension liabilities, or are *underfunded*. The average underfunded plan has a ratio of assets-to-liabilities equal to 73%.
- Of the 131 state retirement systems that reported actuarial data for 2013, 93% were *underfunded*. The average underfunded plan in FY2013 had a ratio of assets-to-liabilities equal to 71%.
- State pension portfolios have, on average, a 66.1% allocation to equities – including real estate and private equity – and a 33.9% allocation to fixed income and other non-equity assets. The 66.1% equity allocation is somewhat lower than the 67.0% equity allocation in 2004; a more notable trend over the ten-year period has been the rotation out of U.S. equities into other growth assets such as non-U.S. equities, real estate and private equity. (Exhibit 13)
- Asset allocation varies by retirement system. Nineteen of 131 retirement systems have allocations to equity that equal or exceed 75%, and 11 systems have an equity allocation below 50%. The 25th and 75th percentile range for equity allocation is 61.4% to 72.0%.
- Wilshire forecasts a long-term median plan return equal to 5.99% per annum, which is 1.66 percentage points below the median actuarial interest rate assumption of 7.65%. One should note that Wilshire's assumptions range over a conservative 10+-year time horizon, while pension plan interest rate assumptions typically project over 20 to 30 years.

Financial Overview

This is Wilshire Consulting's nineteenth report on the financial condition of state-sponsored defined benefit retirement systems and is based upon data gathered from the most recent financial and actuarial reports provided by 131 retirement systems sponsored by the 50 states and the District of Columbia. Appendix A lists the 131 retirement systems included in this year's study.

The Data

Financial data on public retirement systems historically have lacked the timeliness and uniform disclosure governing pension plans sponsored by publicly traded companies, making it difficult to conclude a study with data that are both current and consistent across systems. For this reason, our study methodology involves collecting data during the first one and a half months of each calendar year with the objective of acquiring as many reports as possible with a June 30 valuation date from the previous year. Even for systems with the desire to report in a timely manner, it often takes six months to a year for actuaries to determine liability values. Ninety-two systems reported actuarial values on or after June 30, 2014 and the remaining 39 systems last reported prior to June 30, 2014.

The Governmental Accounting Standards Board (GASB) is the agency tasked with developing accounting and financial reporting standards for state and local governments[1]. GASB and the financial industry have taken major steps to increase transparency and comparability of pension plan accounting. GASB's Statement 67, "Financial Reporting for Pension Plans", impacts the annual pension reporting for plans as of June 2014; Statement 68, "Accounting and Financial Reporting for Pensions", impacts the annual pension reporting for the employers contributing into government agency-sponsored pensions, and is scheduled to be applicable to employers' financial reporting starting in June 2015. Key policy requirements contained in GASB 67 and 68 include:

- Governmental employers and plan sponsors will have to show the Net Pension Liability (NPL) of their retirement systems on their balance sheets; the NPL of a given pension is defined as the excess of its accrued Total Pension Liability over the Plan Fiduciary Net Position, or the fair market value of assets available for payment of pension benefits. Additionally, the employers and plan sponsors must present a detailed reconciliation of the change in NPL (i.e., pension expense) over the preceding twelve months in the balance sheets. The reliance on the Plan Fiduciary Net Position (i.e., total assets available for pension benefits, priced at market) to calculate NPL is a key difference from previous reporting standards, which allowed plans to use a smoothed actuarial value of assets to calculate their total actuarial liability and unfunded actuarial liability. This will make

[1] GASB maintains a repository of its statements as well as analysis and guidance for their implementation on its website, http://www.gasb.org.

NPL potentially a more volatile measure of these pensions' financial health than the unfunded actuarial liability permitted by prior GASB rules.

- The only accepted actuarial cost method for calculating net pension liability will be individual level-percent-of-pay entry-age normal method.
- If current and expected future plan assets are projected to fully cover plan benefits, NPL can be computed using a discount rate equal to the expected long-term return on plan assets (see below for additional reporting requirements). If current and expected future assets are not projected to fully cover plan benefits, the unfunded-benefit portion of NPL must be computed using a discount rate derived from the yield or index rate for 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. In our research for this year's funding report, we have found very few plans that utilized discount rates different from their assumed return on assets.
- The NPL must be reported using discount rates 1% higher and 1% lower than the discount rate (defined above) used in the primary disclosures.
- Disclosure of target asset allocation levels will now be required in the Notes to the Financial Statements included in pension plans' Comprehensive Annual Financial Reports (CAFRs.
- Pension plans are required to detail the asset classes used to calculate their long-term expected rate of return as well as the expected real rate of return for each.
- In the Required Supplementary Information section, pension plans will be required to provide a schedule of the last ten fiscal years' annual money-weighted rates of return on plan assets, net of investment expenses. Most plans were not able to supply this information, nor ten years of Net Pension Liability schedules, in their fiscal 2014 CAFRs.

Most plans for whom fiscal 2014 CAFRs are available have reported plan assets and liabilities conforming to GASB 67; a few agent multi-employer plans should see their net positions reported by participating employers in GASB 68-compliant annual reporting as of June 2015.

Assets versus Liabilities

Exhibit 1 shows the market value of assets, actuarial value of assets, and pension liability values for all state retirement systems for which Wilshire has data. With the exception of the two rows identifying Wilshire's estimated funded ratios, the data presented in each column of Exhibit 1 are limited to only those systems that reported on or after June of that year. For example, all 131 retirement systems in our survey reported actuarial values for 2013, while only 92 systems reported actuarial values for 2014. Note that Exhibit 1 includes both market value and actuarial value of assets. Unless otherwise noted, "assets" will refer to market value of assets for the remainder of this report.

Exhibit 1
Financial Overview of State Retirement Systems[2] ($ billions)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Pension Assets:											
Market Value	$2,017.6	$2,181.4	$2,378.8	$2,695.1	$2,402.4	$2,015.5	$2,210.9	$2,493.0	$2,506.2	$2,726.8	$2,046.5
Actuarial Value	$2,053.5	$2,141.8	$2,280.1	$2,465.9	$2,516.7	$2,471.1	$2,499.3	$2,544.3	$2,580.3	$2,675.8	$2,043.7
Total Pension Liabilities:	$2,343.1	$2,486.8	$2,646.9	$2,833.2	$2,976.1	$3,132.7	$3,233.3	$3,349.0	$3,499.0	$3,704.5	$2,672.0
Difference:											
Market Value	-$325.5	-$305.4	-$268.0	-$138.1	-$573.7	-$1,117.2	-$1,022.4	-$856.0	-$992.8	-$977.8	-$625.6
Actuarial Value	-$289.5	-$345.0	-$366.7	-$367.3	-$459.4	-$661.6	-$734.1	-$804.7	-$918.7	-$1,028.8	-$628.3
Market Value of Assets as a % of Liabilities:											
All Plans (estimate)*	86%	88%	90%	95%	81%	64%	68%	74%	72%	74%	**80%**
Reported Plans (actual)	86%	88%	90%	95%	81%	64%	68%	74%	72%	74%	77%
Actuarial Value of Assets as a % of Liabilities:											
All Plans (estimate)*	88%	86%	86%	87%	85%	79%	77%	76%	74%	72%	**78%**
Reported Plans (actual)	88%	86%	86%	87%	85%	79%	77%	76%	74%	72%	76%
Total No. of Retirement Systems:	131	131	131	131	131	131	131	131	131	131	92

***The estimation process is explained later in the report (exhibit 3 and its preceding text).**

The aggregate pension asset and liability values in Exhibit 1 are not directly comparable across columns because of the different number of retirement systems included for each year. As such, in the case of the most recent year that does not yet include data for the complete set of plans, we include an estimate of the funding ratios across all 131 plans. By combining these estimates with the historical funding ratios for the complete set of plans we can better evaluate the financial health for these 131 retirement systems over the last ten years. Market value funding ratios rose steadily in tandem with global stock markets from 86% at fiscal year-end 2004 to the recent-period best 95% funded ratio as of fiscal year-end 2007. Over the next two years, funded ratios fell precipitously, reaching a nadir of 64% by fiscal year-end 2009. However, rebounding capital markets have allowed funding ratios to recover to an estimated 80% at fiscal year-end 2014. Asset growth has faced various headwinds over this period, including global economic and political turmoil in 2012 and rising U.S. interest rates in the first half of 2013. Pension liabilities have also steadily risen over the last ten years; many plans have lowered the assumed rate of return on assets used to value their liabilities, which may partially explain the overall increase in the accumulated pension liability. The median discount rate for the plans in our survey decreased from 8.0% to 7.75% in fiscal 2012, and fell to 7.65% for fiscal 2014.

Actuarial value funding ratios declined fairly steadily over the ten year period between fiscal year-end 2003 and fiscal year-end 2013, from 89% to an estimated 73%. Actuarial accounting practices incorporate smoothing procedures to mitigate asset valuation volatility in plan projections; one product of these accounting conventions is notably lower variability of actuarial value-based funding ratios. However, with the adoption of GASB 67 and 68, most plans have begun reporting their Fiduciary Net Position, which by definition is priced at market; statistics using this metric will increase in overall volatility in subsequent reporting periods.

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[2] As disclosed in annual reports (most annual reports use a June 30 or December 31 fiscal year). Liabilities are the reported actuarial accrued liabilities and assets are the current market and actuarial values as of the same valuation date as liabilities.

Exhibit 2 shows asset and liability values for the 92 retirement systems which reported actuarial values for 2014 and compares them with the same totals from the previous ten fiscal years.

Exhibit 2
Financial Overview of 92 State Retirement Systems ($ billions)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annualized Growth % 2004-2014	2013-2014
Total Pension Assets:													
- Market Value	$1,325.0	$1,438.6	$1,562.9	$1,808.2	$1,689.6	$1,308.4	$1,432.9	$1,683.8	$1,658.3	$1,799.5	$2,046.5	4.4%	13.7%
- Actuarial Value	$1,351.8	$1,409.0	$1,496.2	$1,620.8	$1,673.3	$1,642.5	$1,661.1	$1,698.5	$1,730.4	$1,797.7	$2,043.7	4.2%	13.7%
Total Pension Liabilities:	$1,571.1	$1,667.0	$1,775.1	$1,904.0	$2,005.3	$2,120.0	$2,181.3	$2,265.0	$2,382.8	$2,553.2	$2,672.0	5.5%	4.7%
Difference:													
- Market Value	-$246.1	-$228.4	-$212.2	-$95.8	-$315.7	-$811.6	-$748.4	-$581.2	-$724.5	-$753.7	-$625.6		
- Actuarial Value	-$219.3	-$258.0	-$278.9	-$283.1	-$332.0	-$477.5	-$520.2	-$566.5	-$652.4	-$755.5	-$628.3		
Assets as a % of Liabilities:													
- Market Value	84%	86%	88%	95%	84%	62%	66%	74%	70%	70%	77%		
- Actuarial Value	86%	85%	84%	85%	83%	77%	76%	75%	73%	70%	76%		
Underfunded Plans as %													
- Market Value	89%	88%	83%	67%	88%	100%	98%	90%	96%	96%	87%		
- Actuarial Value	79%	85%	85%	85%	87%	93%	93%	95%	97%	96%	88%		
Total No. of Systems:	92	92	92	92	92	92	92	92	92	92	92		

In 2013, pension liabilities for these 92 plans exceeded assets by $753.7 billion and the funding ratio, or ratio of assets-to-liabilities, one measure of pension fund health, stood at 70%. One year later, assets have risen to $2,046.5 billion, a change of 13.7%, while liabilities have grown to $2672.0 billion, a change of 4.7%. The result has been a decrease in the shortfall between assets and liabilities from -$753.7 billion to -$625.6 billion, a $128.2 billion[3] decrease, and a rise in the funding ratio for these 92 plans from 70% to 77%.

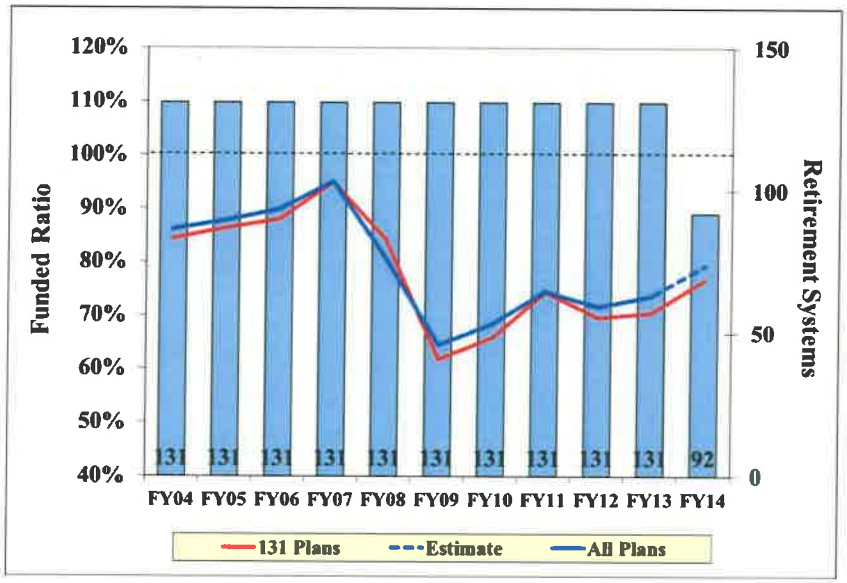
In 2004, after the equity market declines of 2000 through 2002 and subsequent recovery in 2003 and 2004, pension liabilities for these 92 plans exceeded assets by $246.1 billion and the funding ratio stood at 84%. During the next three years, assets grew at an average annual rate of 10.9% while liabilities grew by an annualized 6.6%. This difference in growth rates is reflected in the increasing funding ratio of the market value of assets to liabilities through the year 2007. In 2008 however, the shortfall between assets and liabilities widened dramatically from -$95.8 billion to -$315.7 billion, leading to a fall in the funding ratio for these 92 plans from 95% to 84%. 2009, as mentioned above, extended this trend as the effects of the global market dislocations of 2007 and 2008 fully impacted fund performance. Funding ratios recovered from the 2009 low of 62% through fiscal year-end 2011's 74% level; after a pullback in fiscal 2012 to 70%, funding ratios jumped to an aggregate 77% as of fiscal 2014.

It is important to note, as with any sample, there exists some level of statistical error. Although the 92 funds with 2013 fiscal year data constitute a sizable majority of the state plans in our survey, one will find some transient variance in sample data from the entire plan cohort. Exhibit 3 provides a graphical comparison between the historical data of all plans versus the subset of 92 plans with more recently reported data. The dotted line represents Wilshire's estimated funding ratio for the complete set of 131 plans, which is derived from the historical relationship between

[3] Some statistics cited in this report may not add up to stated totals due to rounding.

the 92-plan sample and the complete set of 131 plans. Using this approach one can reasonably expect a fiscal 2014 funding ratio of approximately 80% once all plans have reported 2014 actuarial data. This estimation approach and graphical representation of estimated data will be used throughout the remainder of this report.

Exhibit 3
Funding Ratio Comparison of 92 Plan Sample vs. Complete Set of 131 Plans



Funding Ratios

Expanding on Exhibit 3, Exhibit 4 shows the aggregate, average, median, 25th, and 75th percentile market value funding ratios for the 131 state pension systems over the last ten fiscal years. Historically, the market value funding ratios for our sample experienced a fairly steady improvement between fiscal 2004 and fiscal 2007. In fiscal 2008 and 2009 however, funding ratios broke trend and rapidly declined. Fiscal 2010 saw funding ratios reverse course and stage a moderate recovery that continued into fiscal 2011, reversed course in fiscal 2012, then resumed through fiscal 2014.

Exhibit 4
Market Value Funding Ratios by Fiscal Year for 131 Plans

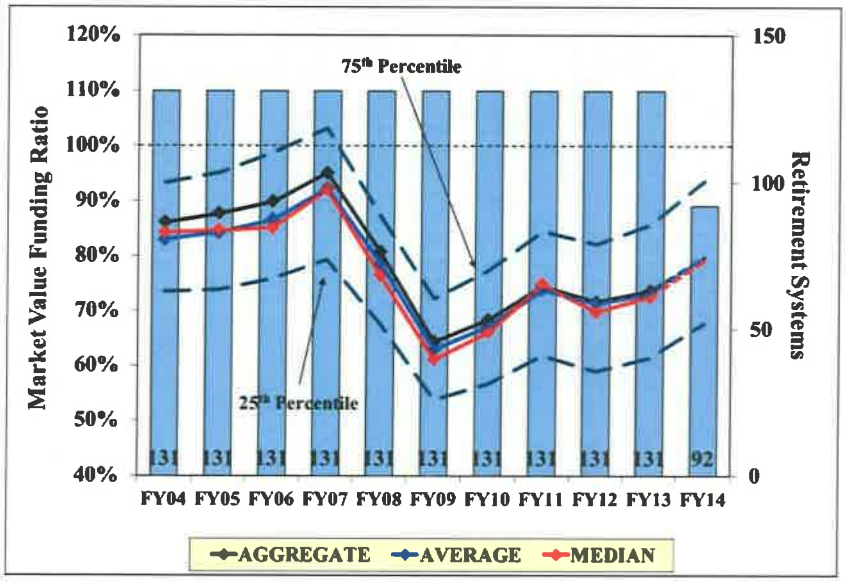


Exhibit 5 shows the same information as Exhibit 4, except it uses the actuarial value of assets and/or Plan Fiduciary Net Position to determine funding ratios. In contrast with Exhibit 4's more volatile market value-based funding ratio time series, Exhibit 5 shows an essentially steady, gradual decline in funding ratios through fiscal 2013, then improves in fiscal 2014. As noted above, accounting conventions prior to fiscal 2014 reporting allow plan sponsors to smooth actuarial values of assets over forecast periods in order to reduce the volatility of projected sponsor contributions to the pension plan.

Exhibit 5
Actuarial Value Funding Ratios by Fiscal Year for 131 Plans

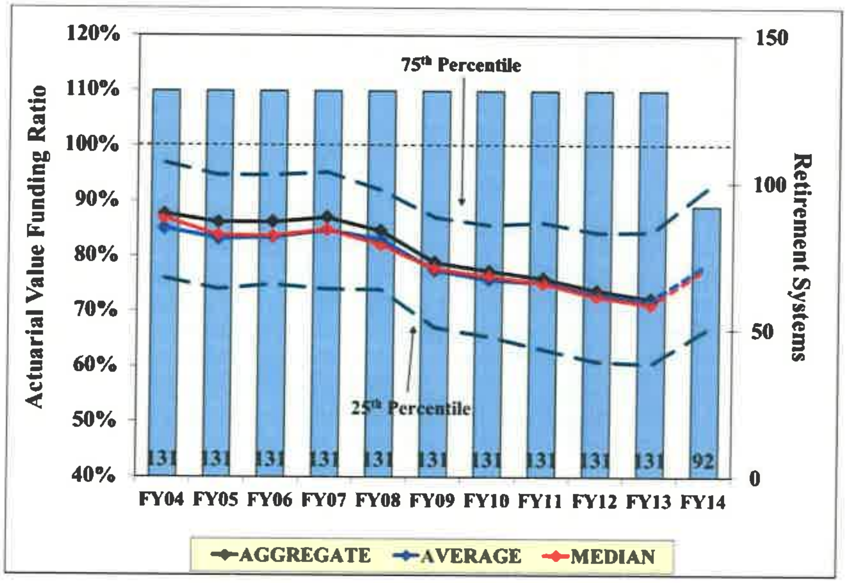
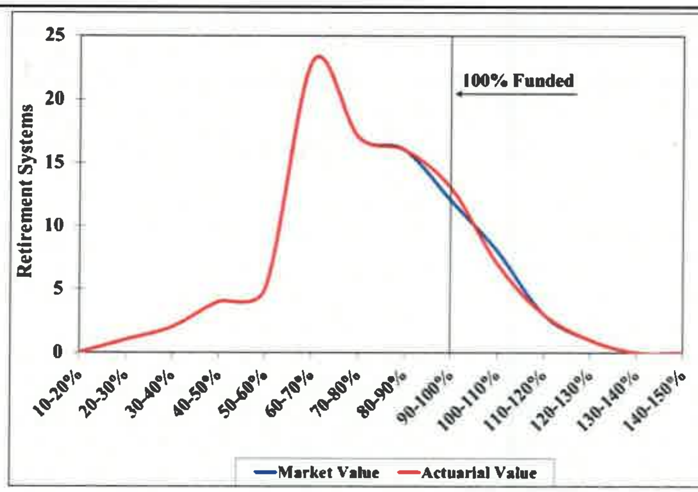


Exhibit 6 gives a more detailed picture of the fiscal condition for the 92 state retirement systems that reported actuarial values for 2014.

Exhibit 6
Distribution of 92 State Pension Systems by Fiscal Year 2014 Funding Ratio

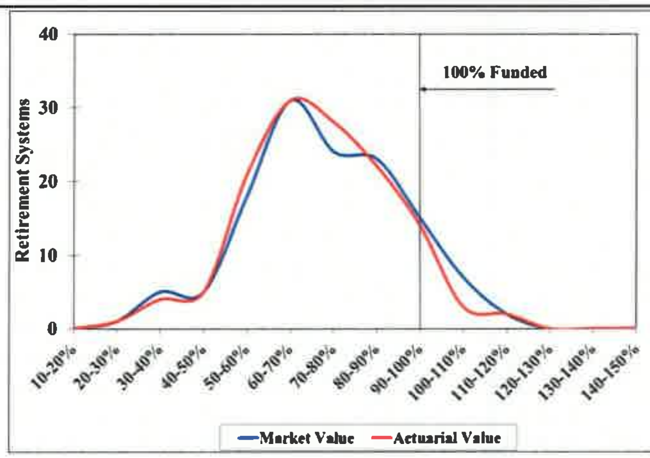


	Bucket Count					Cumulative Count			
Distribution	Market Value		Actuarial Value		Distribution	Market Value		Actuarial Value	
	Count	% of Total	Count	% of Total		Count	% of Total	Count	% of Total
0-50%	7	8%	7	8%	0-50%	7	8%	7	8%
50-60%	5	5%	5	5%	0-60%	12	13%	12	13%
60-70%	23	25%	23	25%	0-70%	35	38%	35	38%
70-80%	17	18%	17	18%	0-80%	52	57%	52	57%
80-90%	16	17%	16	17%	0-90%	68	74%	68	74%
90-100%	12	13%	13	14%	0-100%	80	87%	81	88%
100-110%	8	9%	7	8%	0-110%	88	96%	88	96%
110-120%	3	3%	3	3%	0-120%	91	99%	91	99%
120-130%	1	1%	1	1%	0-130%	92	100%	92	100%
130-140%	0	0%	0	0%	0-140%	92	100%	92	100%
140-150%	0	0%	0	0%	0-150%	92	100%	92	100%
Total	92	100%	92	100%	Total	92	100%	92	100%

We have noted above that 87% of these 92 plans with 2014 actuarial data, or 80 plans, are underfunded; Exhibit 6 demonstrates the extent of the shortfall. Seven plans have assets less than 50% of liabilities; 35 plans have assets less than 70% of liabilities; and 52 plans have assets less than 80% of liabilities. Using the actuarial value of assets to determine funding ratios, 81 plans have assets below liabilities. Seven plans have assets less than 50% of liabilities; 35 plans have assets less than 70% of liabilities; and 76 plans have assets less than 80% of liabilities.

Similar to Exhibit 6, Exhibit 7 examines the fiscal condition of the 131 state retirement systems that reported actuarial values for 2013.

Exhibit 7
Distribution of 131 State Pension Systems by Fiscal Year 2013 Funding Ratio



	Bucket Count					Cumulative Count			
	Market Value		Actuarial Value			Market Value		Actuarial Value	
Distribution	Count	% of Total	Count	% of Total	Distribution	Count	% of Total	Count	% of Total
0-50%	11	8%	10	8%	0-50%	11	8%	10	8%
50-60%	18	14%	21	16%	0-60%	29	22%	31	24%
60-70%	31	24%	31	24%	0-70%	60	46%	62	47%
70-80%	24	18%	28	21%	0-80%	84	64%	90	69%
80-90%	23	18%	22	17%	0-90%	107	82%	112	85%
90-100%	15	11%	14	11%	0-100%	122	93%	126	96%
100-110%	7	5%	3	2%	0-110%	129	98%	129	98%
110-120%	2	2%	2	2%	0-120%	131	100%	131	100%
120-130%	0	0%	0	0%	0-130%	131	100%	131	100%
130-140%	0	0%	0	0%	0-140%	131	100%	131	100%
140-150%	0	0%	0	0%	0-150%	131	100%	131	100%
Total	131	100%	131	100%	Total	131	100%	131	100%

Using the market value of assets to determine funding ratios, 122 of the 131 plans, or 93%, had assets less than liabilities. Eleven plans had assets less than 50% of liabilities; 60 plans had assets less than 70% of liabilities; and 84 plans had assets less than 80% of liabilities. Using the actuarial value of assets to determine funding ratios, 126 of the 131 plans, or 96%, had assets less than liabilities. Ten plans had assets less than 50% of liabilities; 62 plans had assets less than 70% of liabilities; and 90 plans had assets less than 80% of liabilities.

Plan Net Pension Liability/Unfunded Actuarial Accrued Liability

The financial health of retirement systems can also be measured by comparing the size of the Plan Net Pension Liability (NPL), or in pre-GASB 67/68 terms the unfunded actuarial accrued liability (UAAL), to relevant metrics. Since assets under Governmental Accounting Standards

Board (GASB) Statement No. 25[4] are based on actuarial values, this section calculates the UAAL using actuarial value of assets for periods prior to fiscal 2014, when GASB 67 takes effect.

Exhibit 8 shows the median size of the UAAL relative to the covered payroll during the last eleven fiscal years for the 131 retirement systems. Exhibit 8 also shows the 25th and 75th percentile for each year. UAAL has increased over the past decade, with an especially steep climb during the most recent recession. However, with the adoption of GASB 67 and the strong performance of global equities in fiscal 2014, the ratio of Net Pension Liability to Payroll fell markedly year-over-year:

Exhibit 8
NPL/UAAL as a % of Covered Payroll by Fiscal Year for 131 Plans

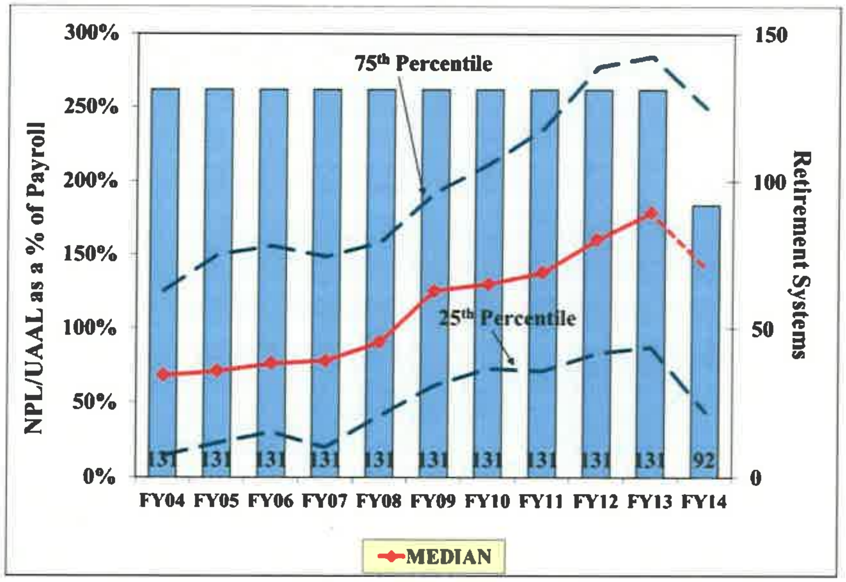


Exhibit 9 shows the median size of the UAAL through 2013 and the NPL for 2014 relative to the actuarial value of assets during the last eleven fiscal years for the 131 plans. Exhibit 9 also shows the 25th and 75th percentile for each year.

[4] GASB No. 25, "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans".

Exhibit 9
NPL/UAAL as a % of Actuarial Value of Assets by Fiscal Year for 131 Plans

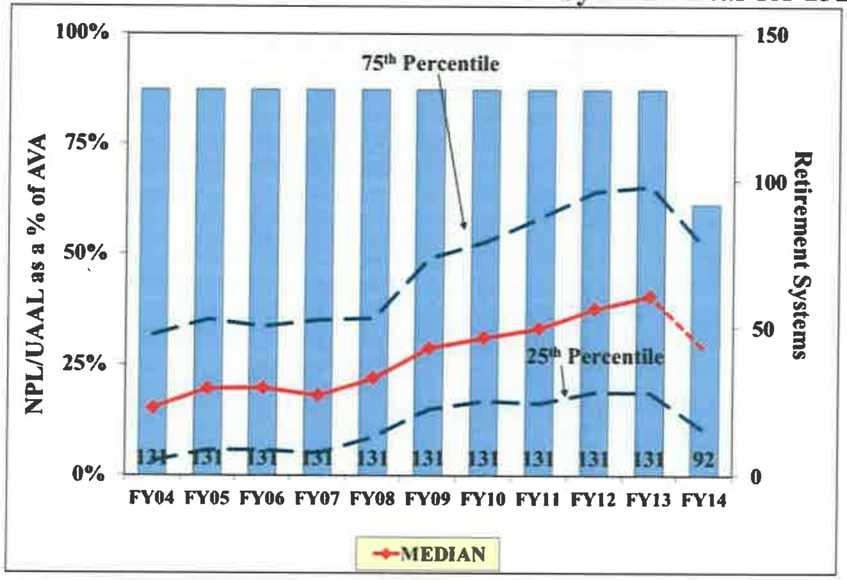
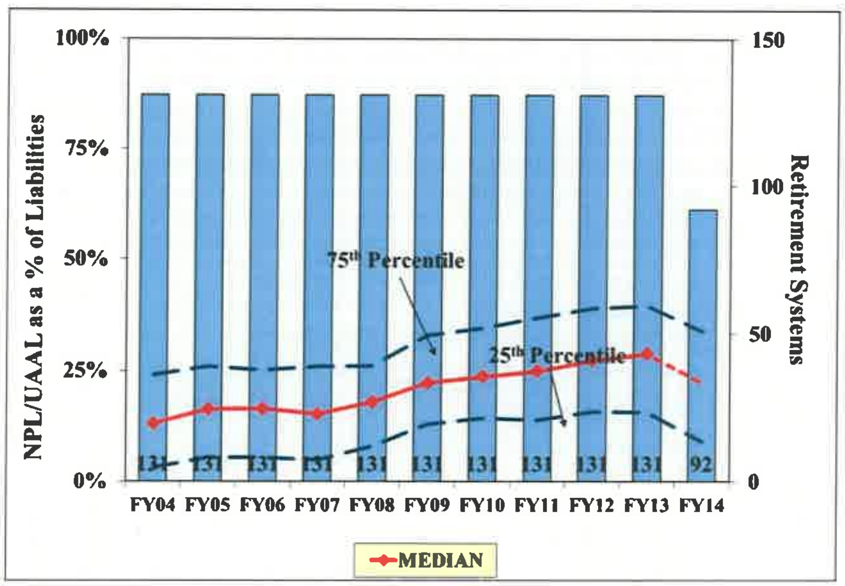


Exhibit 10 shows the median size of the UAAL through 2013 and the NPL for 2014 relative to the actuarial accrued liability during the last eleven years for all 131 retirement systems. Exhibit 10 also shows the 25th and 75th percentile for each year.

Exhibit 10
NPL/UAAL as a % of Accrued Liabilities by Fiscal Year for 131 Plans



From 2005 to 2008, the UAAL had generally stabilized relative to all metrics. Over 2008 and 2009, however, poor market performance pushed the covered payroll ratio and the 25th and 75th percentiles of the actuarial value of assets and accrued liability higher. It bears repeating that prior to June 2014 actuarial valuation methodology typically employs smoothing formulae in order to reduce the impact of market fluctuations when determining pension fund contributions. If the UAAL were calculated using the market value of assets (or if the NPL were calculated as per GASB 67 during that period), the negative market returns experienced during fiscal 2008 and 2009 would have led to a much larger increase in the UAAL relative to these metrics, indicating a more substantial deterioration in the financial health of most state retirement systems. Due to the strong markets experienced during fiscal 2010 and 2011, UAAL as a percent of asset market value fell sharply over those two years. Fiscal 2012 found UAAL growth outpacing asset market value growth, reversing the trend of the prior two years. However, asset market value growth again outpaced the growth in UAAL in fiscal 2013, and as noted above, the growth in these plans' Net Plan Fiduciary Position also surpassed that of the Net Pension Liability in fiscal 2014.

Asset Allocation

In this section we examine the investment strategies employed by the state retirement systems. Exhibit 11 provides a snapshot of the average asset allocation as of the latest reported fiscal year-end across all 131 state retirement systems.

Exhibit 11
Average Asset Allocation for State Pension Plans

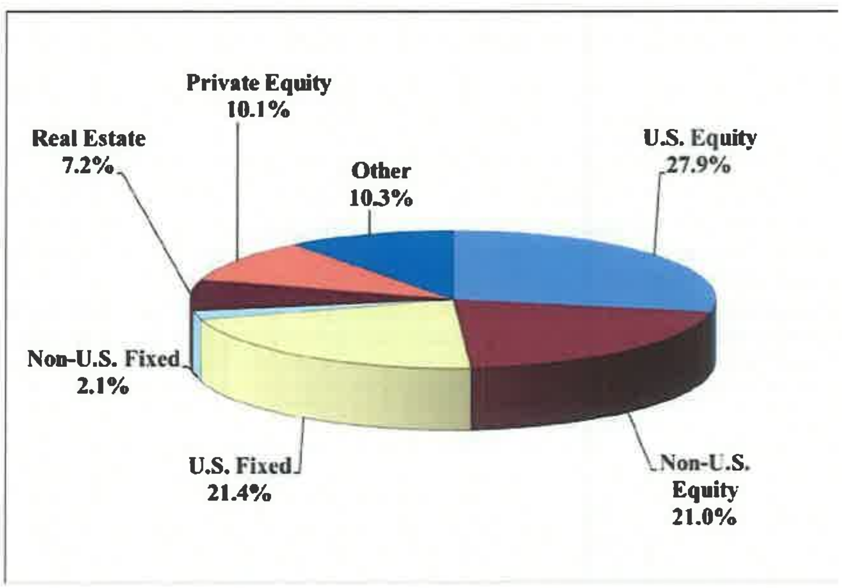


Exhibit 12 examines the change in average asset allocation over the last ten years. During this period, the average allocations to Non-U.S. equities increased from 14.4% to 21.0% while allocations to U.S. bonds decreased from 29.1% to 21.4%.

Exhibit 12
Change in Average Asset Allocation for State Pension Plans

				Change in Exposure	
Equity	2004	2009	2014	04-14	09-14
U.S. Equity	44.5 %	34.7 %	27.9 %	-16.6 %	-6.8 %
Non-U.S. Equity	14.4	18.2	21.0	6.6	2.8
Real Estate	3.8	6.5	7.2	3.4	0.7
Private Equity	4.3	7.4	10.1	5.8	2.7
Equity Subtotal	67.0	66.7	66.1	-0.9	-0.6
Debt					
U.S. Fixed	29.1	27.1	21.4	-7.7	-5.7
Non-U.S. Fixed	1.3	1.2	2.1	0.8	0.9
Other	2.6	5.0	10.4	7.8	5.4
Debt Subtotal	33.0	33.3	33.9	0.9	0.6
Return *	5.7	5.9	6.0	0.3	0.1
Risk *	11.4	12.1	12.5	1.1	0.4

** Return and Risk are based on Wilshire Consulting's current asset class assumptions (Exhibit 14).*

Overall equity exposure, comprised of U.S. and non-U.S. public market equities along with real estate and private equity, decreased 0.9% over the past decade, while overall debt exposure, comprised of U.S. and non-U.S. fixed income and other non-equity assets (consisting of cash and cash equivalents as well as commodities, hedge funds and other absolute return/zero net-beta strategies), increased. However, it must be noted that plans' exposures to U.S. public market equity and U.S. fixed income over this period fell while allocations to non-U.S. assets, real estate, private market equity and other risk asset strategies (including hedge funds and commodities) increased. One can propose several possible explanations for these phenomena, alone or in combination:

- Rotation out of the relatively efficient U.S. stock and bond markets into less-efficient asset spaces;
- Plan sponsors reducing the home-market bias in their fund holdings;
- Plan sponsors increasing asset diversification in an attempt to de-risk the Total Fund;
- Plan sponsors increasing their exposures to more leveraged strategies, such as private market equity, in an effort to meet return targets.

Portfolio expected return and risk are calculated by combining Wilshire's assumptions for the major asset classes and each retirement system's actual asset allocation. Exhibit 12 calculates the expected return and risk based on the average asset allocations from 2004, 2009 and 2014 using Wilshire's current long-term return and risk assumptions illustrated in Exhibit 13. The redeployment of assets over the past decade out of U.S. public markets and into offshore and alternative assets has caused the average state pension plan to move towards a somewhat higher expected risk profile along the efficient frontier, with the expected return increasing a smaller amount. This projected decrease in risk-adjusted performance suggests that these plans' allocations to return-enhancing asset strategies are not simultaneously delivering notable diversification benefits.

Exhibit 13
Wilshire's 2015 Capital Market Assumptions

	Expected Return	Risk
U.S. Equity	6.25 %	17.0 %
Non-U.S. Equity	6.25	18.0
Private Equity	8.80	27.5
Real Estate	4.85	17.0
U.S. Bonds	3.35	5.0
Non-U.S Bonds	1.65	3.5

Exhibit 14 contains summary statistics on asset allocation for all state retirement systems. The median allocation[5] is 25.3% to U.S. equities and 20.0% to Non-U.S. equities. However, as the lowest and highest columns suggest, there is considerable variability in allocations among individual systems. Wilshire estimates that the median state pension fund has an expected return of 5.99%. This result is 1.66% less than the current median liability discount rate of 7.65%. It is important to note that Wilshire's long-term asset assumptions do not include any expectations from active management and are targeted at a 10-year time horizon. By contrast, the actuarial discount rate assumed by plans is typically geared at a longer-term horizon and includes all anticipated sources of return. As such, while we present these data for illustrative purposes, they are not directly comparable (i.e. Wilshire's assumptions are primarily derived to assist in conducting asset allocation studies and are not put forth as a metric to formulate an assumed actuarial rate of return).

[5] The "Median" column in Exhibit 14 represents the median for each asset class and therefore does not sum to 100%. The median expected return is based on the median fund return, not on the median asset mix.

Exhibit 14
Summary Asset Allocation Statistics for State Pension Plans

	Lowest (%)	Median (%)	Highest (%)
U.S. Equity	0.0 %	25.3 %	77.2 %
Non-U.S. Equity	0.3	20.0	58.4
Private Equity	0.0	9.2	56.3
Real Estate	0.0	7.4	16.8
U.S. Bonds	1.7	21.2	50.6
Non-U.S Bonds	0.0	0.5	9.5
Hedge Funds	0.0	1.5	24.6
Other	0.0	5.0	24.5
Expected Returns	**5.0 %**	**6.0 %**	**7.5 %**

Exhibit 15 plots the expected return and risk for each of the 131 state retirement systems based upon their actual asset allocation. Systems that plot in the upper right employ more aggressive asset mixes while systems that plot in the lower left represent those with more conservative mixes. The dashed horizontal line, equal to 7.65%, represents the current median actuarial interest rate assumption employed by state pension plans.

Using Wilshire's return forecasts, none of the 131 state retirement systems are expected to earn long-term asset returns that equal or exceed the median liability discount rate assumption. It is again important to note that Wilshire return assumptions represent beta only, with no projection of alpha from active management, and may differ in time horizon (10+ years) from the methodologies underlying actuarial interest rate assumptions (20 to 30+ years).

Exhibit 15
Projected Return & Risk Forecasts for State Pension Plans

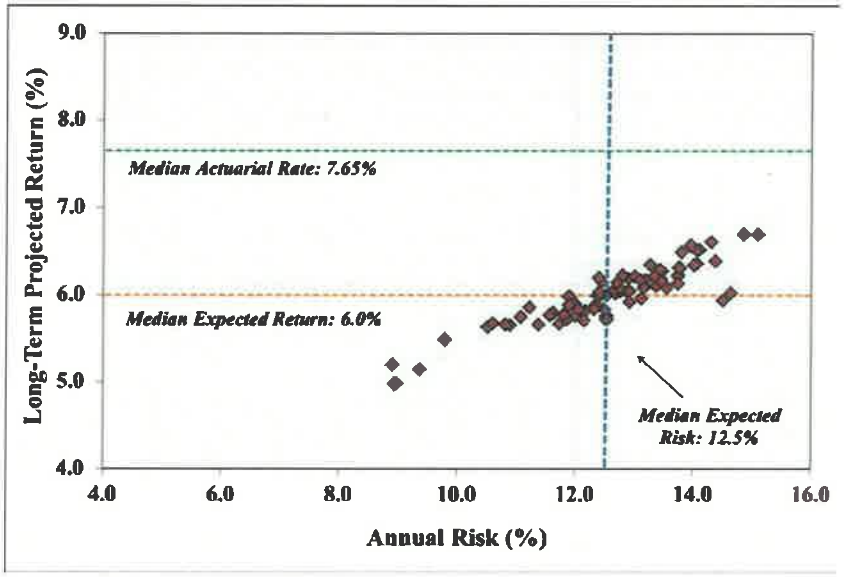
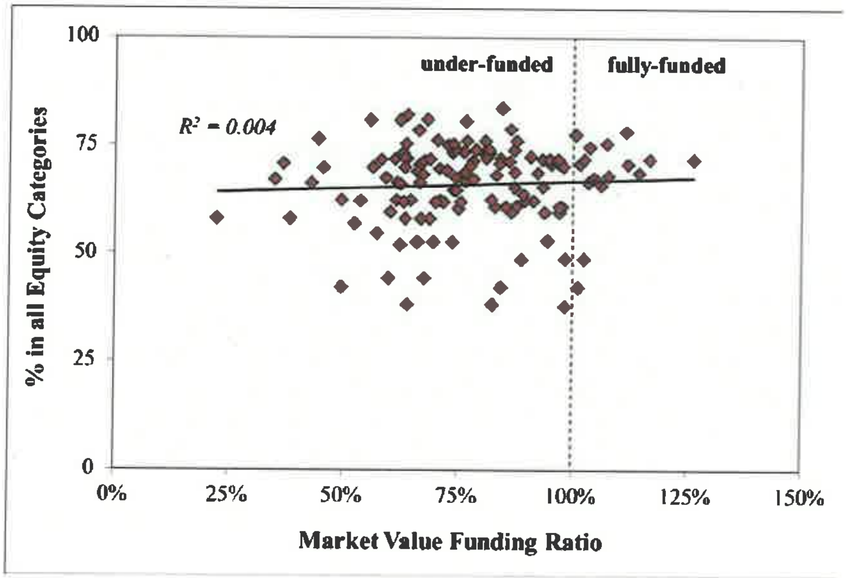


Exhibit 16 addresses the relationship between asset allocation and funding for all state systems. The allocation to equity asset classes, a proxy for investment aggressiveness, is plotted on the vertical scale. The market value funding ratio is on the horizontal scale.

Exhibit 16
Asset Allocation & Actuarial Funding Ratios for State Pension Plans



The vertical line in Exhibit 16 separates overfunded plans from underfunded plans. Casual observation uncovers no pattern connecting funded ratio to equity exposure, and in fact the R-squared between the total equity exposures and funding ratios of these plans is basically zero. In other words, there is no discernable relationship between asset allocation and funding. State retirement systems show a broad spectrum of asset allocations that appear to be unrelated to the size of their unfunded liabilities.

Appendix A: State Retirement Systems[6]

Retirement System	Retirement System	Report Date
Alabama ERS	Alabama Employees' Retirement System	9/30/2013
Alabama TRS	Alabama Teachers' Retirement System	9/30/2013
Alaska PERS	Alaska Public Employees' Retirement System	6/30/2014
Alaska TRS	Alaska Teachers' Retirement System	6/30/2014
Arizona PSPRS	Arizona Public Safety Personnel Retirement System	6/30/2013
Arizona SRS	Arizona State Retirement System	6/30/2014
Arkansas Highway ERS	Arkansas Highway Employees Retirement System	6/30/2014
Arkansas PERS	Arkansas Public Employees Retirement System	6/30/2014
Arkansas TRS	Arkansas Teachers Retirement System	6/30/2013
California PERS	California Public Employees' Retirement System	6/30/2014
California Regents	The Regents of the University of California	6/30/2014
California STRS	California State Teachers' Retirement System	6/30/2014
Colorado Fire & Police	Colorado Fire & Police Pension Association	12/31/2013
Colorado PERA: Municipal	Colorado PERA: Municipal Division Trust Fund	12/31/2013
Colorado PERA: State & School	Colorado PERA: State & School Division Trust Fund	12/31/2013
Connecticut SERS	Connecticut State Employees' Retirement System	6/30/2013
Connecticut TRS	Connecticut State Teacher's Retirement System	6/30/2013
DC Police & Fire	District of Columbia Police Officers & Fire Fighters' Retirement System	9/30/2013
DC TRS	District of Columbia Teachers Retirement System	9/30/2013
Delaware PERS	Delaware Public Employees' Retirement System	6/30/2014
Florida RS	Florida Retirement Systems	6/30/2013
Georgia ERS	Georgia Employees Retirement System	6/30/2014
Georgia TRS	Georgia Teachers Retirement System	6/30/2014
Hawaii ERS	Hawaii Employees' Retirement System	6/30/2014
Idaho FRF	Idaho Firefighters' Retirement Fund	6/30/2014
Idaho PERSI	Idaho Public Employee Retirement Fund Base Plan	6/30/2014
Illinois Muni Ret Fund	Illinois Municipal Retirement Fund	12/31/2013
Illinois SERS	Illinois State Employees' Retirement System	6/30/2014
Illinois SURS	Illinois State Universities Retirement System	6/30/2014
Illinois TRS	Illinois State Teachers' Retirement System	6/30/2014
Indiana PERF: Employees	Indiana Public Employees' Retirement Fund: Employees	6/30/2014
Indiana PERF: Police & Fire	Indiana PERF: Police Officers' & Firefighters' Pension & Disability Fund	6/30/2014
Indiana TRF	Indiana State Teachers Retirement Fund	6/30/2014
Iowa Fire & Police	Iowa Municipal Fire & Police Retirement System	6/30/2014
Iowa PERS	Iowa Public Employees Retirement System	6/30/2014
Kansas PERS	Kansas Public Employees Retirement System	6/30/2014
Kentucky RS: CERS Hazardous	Kentucky Employees Retirement System: County Hazardous Employees	6/30/2014
Kentucky RS: CERS Non-Hazardous	Kentucky Employees Retirement System: County Non-Hazardous Employees	6/30/2014
Kentucky RS: KERS Hazardous	Kentucky Employees Retirement System: State Hazardous Employees	6/30/2014
Kentucky RS: KERS Non-Hazardous	Kentucky Employees Retirement System: State Non-Hazardous Employees	6/30/2014
Kentucky RS: State Police	Kentucky Employees Retirement System: State Police Retirement System	6/30/2014
Kentucky TRS	Kentucky Teachers' Retirement System	6/30/2014
Louisiana School ERS	Louisiana School Employees' Retirement System	6/30/2014
Louisiana SERS	Louisiana State Employees' Retirement Systems	6/30/2014
Louisiana State Police	Louisiana State Police Pension & Retirement System	6/30/2014

[6] All state plan information is obtained from public information sources.

Appendix A: (cont.)

Retirement System	Retirement System	Report Date
Louisiana TRS	Louisiana Teachers Retirement System	6/30/2014
Maine SRS	Maine State Retirement System	6/30/2014
Maryland SRPS: Employees	Maryland State Retirement & Pension System: Employees	6/30/2014
Maryland SRPS: State Police	Maryland State Retirement & Pension System: State Police	6/30/2014
Maryland SRPS: Teachers	Maryland State Retirement & Pension System: Teachers	6/30/2014
Massachusetts SRB	Massachusetts Public Employee Retirement Administration Commission: SRB	6/30/2014
Massachusetts Teachers	Massachusetts Public Employee Retirement Administration Commission: Teachers	6/30/2014
Michigan Municipal	Michigan Municipal Employees Retirement System	12/31/2013
Michigan Public School ERS	Michigan Public School Employees Retirement System	9/30/2013
Michigan SERS	Michigan State Employees Retirement System	9/30/2013
Michigan State Police	Michigan State Police Retirement System	9/30/2013
Minnesota PERA: Employees	Minnesota Public Employees Retirement Association: Employees	6/30/2014
Minnesota PERA: Police & Fire	Minnesota Public Employees Retirement Association: Police & Fire	6/30/2014
Minnesota SRS: Employees	Minnesota State Retirement System: Employees	6/30/2014
Minnesota SRS: State Patrol	Minnesota State Retirement System: State Patrol	6/30/2014
Minnesota TRA	Minnesota Teachers Retirement Association	6/30/2014
Mississippi PERS	Mississippi Public Employees' Retirement System	6/30/2014
Missouri ERS	Missouri State Employee Retirement System	6/30/2014
Missouri Highway ERS	Missouri Highway & Transportation Employees and Highway Patrol Retirement System	6/30/2014
Missouri PEERS	Missouri Public Education Employee Retirement System	6/30/2014
Missouri PSRS	Missouri Public School Retirement System	6/30/2014
Montana PERB	Montana Public Employees Retirement Board	6/30/2013
Montana TRS	Montana Teachers' Retirement System	6/30/2014
Nebraska RS	Nebraska Retirement System	6/30/2014
Nevada PERS	Nevada Public Employees' Retirement System	6/30/2014
New Hampshire Retirement System	New Hampshire Retirement System	6/30/2014
New Jersey PERS	New Jersey Public Employees Retirement System	6/30/2013
New Jersey Police & Fire	New Jersey Police & Firemen's Retirement System	6/30/2013
New Jersey State Police	New Jersey State Police Retirement System	6/30/2013
New Jersey TPAF	New Jersey Teachers' Pension & Annuity Fund	6/30/2013
New Mexico ERB	New Mexico Educational Retirement System	6/30/2013
New Mexico PERA	New Mexico Public Employees Retirement Association	6/30/2013
New York STRS	New York State Teachers Retirement System	6/30/2014
New York: ERS	New York State & Local Employees' Retirement System	3/31/2014
New York: Police & Fire	New York Police & Fire Retirement System	3/31/2014
North Carolina Local ERS	North Carolina Local Governmental Employees' Retirement System	6/30/2014
North Carolina TSERS	North Carolina Teachers' & State Employees' Retirement System	6/30/2014
North Dakota PERS	North Dakota Public Employees Retirement System	6/30/2014
North Dakota TFFR	North Dakota Teachers' Fund for Retirement	6/30/2014
Ohio PERS	Ohio Public Employees Retirement System	12/31/2013
Ohio Police & Fire	Ohio Police & Fire Pension Fund	12/31/2013
Ohio School Employees RS	Ohio School Employees Retirement System	6/30/2014
Ohio STRS	Ohio State Teachers Retirement System	6/30/2014
Oklahoma Firefighters	Oklahoma Firefighters Pension & Retirement System	6/30/2014
Oklahoma PERS	Oklahoma Public Employees Retirement System	6/30/2014

Appendix A: (cont.)

Retirement System	Retirement System	Report Date
Oklahoma Police	Oklahoma Police Pension & Retirement System	6/30/2014
Oklahoma TRS	Oklahoma Teachers Retirement System	6/30/2014
Oregon PERS	Oregon Public Employees Retirement System	6/30/2014
Pennsylvania PSERS	Pennsylvania Public School Employees' Retirement System	6/30/2014
Pennsylvania SERS	Pennsylvania State Employees' Retirement System	12/31/2013
Rhode Island ERS	Rhode Island Employees Retirement System	6/30/2014
Rhode Island JRBT	Rhode Island Judicial Retirement Benefits Trust	6/30/2014
Rhode Island MERS	Rhode Island Municipal Employees Retirement System	6/30/2014
Rhode Island SPRBT	Rhode Island State Police Retirement Benefits Trust	6/30/2014
South Carolina Police	South Carolina Police Officers Retirement System	6/30/2014
South Carolina RS	South Carolina Retirement System	6/30/2014
South Dakota RS	South Dakota Retirement System	6/30/2014
Tennessee Consolidated RS	Tennessee Consolidated Retirement System	6/30/2014
Texas CDRS	Texas County & District Retirement System	12/31/2013
Texas ERS	Texas Employees Retirement System	8/31/2014
Texas LECOSRF	Texas Law Enforcement & Custodial Officers Supplemental Retirement Fund	8/31/2014
Texas Municipal	Texas Municipal Retirement System	12/31/2013
Texas TRS	Texas Teachers Retirement System	8/31/2014
Utah Contributory RS	Utah Contributory Retirement System	12/31/2013
Utah Firefighters RS	Utah Firefighters Retirement System	12/31/2013
Utah Noncontributory RS	Utah Noncontributory Retirement System	12/31/2013
Utah Public Safety RS	Utah Public Safety Retirement System	12/31/2013
Vermont MERS	Vermont Municipal Employees' Retirement System	6/30/2014
Vermont SERS	Vermont State Employees' Retirement System	6/30/2014
Vermont TRS	Vermont State Teacher's Retirement System	6/30/2014
Virginia JRS	Virginia Judicial Retirement System	6/30/2014
Virginia LORS	Virginia Law Officers' Retirement System	6/30/2014
Virginia RS	Virginia Retirement System	6/30/2014
Virginia SPORS	Virginia State Police Officers' Retirement System	6/30/2014
Washington LEOFF 1	Washington Law Enforcement Officers & Fire Fighters' Retirement System 1	6/30/2014
Washington LEOFF 2	Washington Law Enforcement Officers & Fire Fighters' Retirement System 2	6/30/2014
Washington PERS 1	Washington Public Employees' Retirement System Plan 1	6/30/2014
Washington PERS 2/3	Washington Public Employees' Retirement System Plan 2	6/30/2014
Washington SERS 2 & 3	Washington School Employees' Retirement System Plan 2 & 3	6/30/2014
Washington TRS 1	Washington Teachers' Retirement System Plan 1	6/30/2014
Washington TRS 2 & 3	Washington Teachers' Retirement System Plan 2 & 3	6/30/2014
Washington WSPRS 1 & 2	Washington State Patrol Retirement System	6/30/2014
West Virginia PERS	West Virginia Public Employees Retirement System	6/30/2013
West Virginia TRS	West Virginia Teachers Retirement System	6/30/2013
Wisconsin RS	Wisconsin Retirement System	12/31/2013
Wyoming RS	Wyoming Retirement System	12/31/2013

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Sewerage & Water Board
of New Orleans
Employees' Retirement System
Investment Policy Statement

Original Draft Adopted - November 4, 2004

As Amended – January 14, 2016

Document Prepared By:

FFC Capital Management

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Name of Plan:	SWBNO Employees' Retirement System ("the Plan")
Type of Plan:	Defined Benefit Plan, IRS Qualified
Plan Sponsor:	Sewerage and Water Board of New Orleans (SWBNO)
Time Horizon:	Greater than 5 years (Long Term)
Assumed ROR:	7.00% (Actuarial Assumption[1])
Strategic Allocation:	56.50% Global Equities / 28.50% Global Fixed Income / 15.00% Alternatives

Mandate	***Minimum***	***Target***	***Maximum***
GLOBAL EQUITY	***20***	***56.5***	***65***
U.S. Large Cap Stocks	*20*	***24***	*35*
Large Cap Value	*0*	*4*	*20*
Large Cap Enhanced Core	*0*	*10*	*35*
Large Cap Growth	*0*	*10*	*20*
U.S. Small/Mid Cap Stocks	*7.5*	***22.5***	*22.5*
SMID Cap Core	*0*	*12.5*	*22.5*
Other Small, MID or SMID Cap (tbd)	*0*	*10*	*22.5*
Non US Stocks	*5*	***10***	*10*
International Developed Equity	*5*	*10*	*10*
GLOBAL FIXED INCOME	***15***	***28.5***	***100***
U.S. Core	*15*	*18.50*	*100*
Global Plus	*0*	*10.00*	*10*
ALTERNATIVES	***0***	***15***	***30***
Commodities	*0*	*0*	*10*
Multi-Strategy HFOF	*0*	*10*	*10*
Real Estate/REITs	*0*	*5*	*10*
Private Equity	*0*	*0*	*10*

[1] As determined by 2014Actuarial Assumption.

The Investment Policy Statement (IPS) should be reviewed and updated at least annually. Any change to this policy should be communicated in writing on a timely basis to all parties of interest.

STATEMENT OF PURPOSE

The purpose of this Investment Policy Statement (IPS) is to guide the Board of Trustees (the members of the Sewerage & Water Board and the elected employee members to the Board of Trustees) [Appendix A] in effectively supervising, monitoring and evaluating the investment of the SWBNO Employees' Retirement System assets. The Plan's investment program is defined in the various sections of the IPS by:

1. Stating in a written document the Board of Trustees' attitudes, expectations, objectives, and guidelines for the investment of all Plan assets.
2. Setting forth an investment structure for managing all Plan assets. This structure includes various asset classes, investment management styles, asset allocation, and acceptable ranges that, in total, are expected to produce a sufficient level of overall diversification and total investment return over the long-term.
3. Providing guidelines for each investment portfolio that when viewed in conjunction with each individual investment manager's contract, control the level of overall risk and liquidity assumed in that portfolio.
4. Providing policy concurrent rate-of-return and risk characteristics for various investment options utilized in developing asset allocation. [Appendix B].
5. Encouraging effective communications between the Board of Trustees, the investment consultant and hired money managers.
6. Establishing formal criteria to monitor, evaluate, and compare the performance results achieved by the money managers on a regular basis.
7. Complying with all fiduciary, prudence and due diligence requirements experienced investment professionals would utilize; and with all applicable laws, rules and regulations from various local, state, federal, and international political entities that may impact Plan assets.

This IPS has been formulated, based upon consideration by the Board of Trustees, of the financial implications of a wide range of policies, and describes the prudent investment process the Board of Trustees deems appropriate.

INTRODUCTION

This document establishes the Investment Policy Statement for the SWBNO Employees' Retirement System for the management of the assets held for the benefit of the participants and beneficiaries in the System. The Board of Trustees is responsible for managing the investment process of the Retirement System in a prudent manner with regard to preserving principal while providing reasonable returns.

The Board of Trustees has arrived at this IPS through careful study of the returns and risks associated with various investment strategies in relation to the current and projected liabilities of the Retirement System. This policy has been chosen as the most appropriate policy for achieving the financial objectives of the Retirement System which are described in the Objectives section of this document.

The Board of Trustees has adopted a long-term investment horizon such that the chances and duration of investment losses are carefully weighted against the long term potential for appreciation of assets.

In addition to the policy defined herein, the management of the SWBNO Employees' Retirement System will be in strict compliance with all relevant and applicable legislation.

STATEMENT OF OBJECTIVES

The assets of the SWBNO Employees' Retirement System shall be invested in accordance with all relevant legislation. Specifically:

1. Investment shall be in accordance with the Louisiana Revised Statues, R.S. 11:3821.
2. Investments shall be made solely in the interest of the participants and beneficiaries of the pension plan and for the exclusive purpose of providing benefits to such participants and their beneficiaries and defraying the reasonable expenses of administering the plan.
3. The Board of Trustees and its investments advisors shall exercise the judgment and care under the circumstances then prevailing which an institutional investor of ordinary prudence, discretion and intelligence exercises in the management of large investments entrusted to it not in regard to speculation but in regard to the permanent disposition of funds considering probable safety of capital as well as probable income.

The primary investment objective shall be to achieve full funding of the actuarial accrued liability so that such assets are preserved for the providing of benefits to participants and their beneficiaries and such long-term return (either in the form of income or capital appreciation or both) may without undue risk maximize the amounts available to provide such benefits. These objectives have been established in conjunction with a comprehensive review of both the current and projected financial requirements and investment returns by asset class.

While there cannot be complete assurance that these objectives will be realized, it is believed that the likelihood of their realization is reasonably high based upon this Investment Policy and historical performance of the asset classes discussed herein. The objectives have been based on a five-year investment horizon, so that short-term fluctuation should be viewed secondary to long-term investment results.

Relative performance benchmarks for the System's investment managers are set forth in the Control Procedures section of this document.

This IPS has been arrived at upon consideration by the Board by a wide range of policies, and describes the prudent investment process the Board deems appropriate. This process includes seeking various asset classes and investment management styles that, in total, are expected to offer participants a sufficient level of overall diversification and total investment return over the long-term. The objectives are:

1. Have the ability to pay all benefit and expense obligations when due;
2. Maintain the purchasing power of the current assets and all future contributions by producing positive real rates of return on Plan asset;
3. Achieve a fully funded status with regard to the Accumulated Benefit Obligation and 100% of the Projected Benefit Obligation;
4. Maintain flexibility in determining the future level of contributions;

5. Maximize return within reasonable and prudent levels of risk in order to minimize contribution; and
6. Control costs of administering the plan and managing the investments.

Keys to achieving objectives include maximizing investment returns within prudent levels of risk, while minimizing the Plan's reliance on contributions.

Time Horizon

The investment guidelines are based upon the Plan's investment time horizon of (>5) greater than five years. Interim fluctuations should be viewed with appropriate perspective. Similarly, the Plan's, strategic asset allocation is based on this long-term perspective. Short-term liquidity requirements are anticipated to be non-existent, or at least should be covered by the annual contribution.

Risk Tolerances

The Board recognizes the difficulty of achieving the Plan's investment objectives in light of the uncertainties and complexities of contemporary investment markets. The Board also recognizes some risk must be assumed to achieve the Plan's long-term investment objectives. In establishing the risk tolerances of the IPS, the ability to withstand short- and intermediate-term variability were considered. These factors were:

- The SWBNO Employees' Retirement System's strong financial condition enables the Board to adopt a long-term investment perspective, allowing for a less aggressive risk tolerance.
- Demographic characteristics of participants suggest an average risk tolerance due to the moderate to aging work force.

In summary, the SWBNO Employees' Retirement System's prospects for the future, current financial condition and several other factors suggest collectively the Plan can tolerate some interim fluctuations in market value and rates of return in order to achieve long-term objectives.

Performance Target

The desired investment objective is a long-term rate of return on assets that is at least 7.00%, as defined by current[2] actuarial assumptions. Annually, the Plan's overall total return, after deducting for advisory, money management, and custodial fees, as well as total transaction costs; should perform above a customized index comprised of market indices weighted by the strategic asset allocation of the Plan.

[2] Based upon 2014 actuarial report

ASSET ALLOCATION POLICY

<u>Targets and Ranges</u>

It shall be the policy of the SWBNO Employees' Retirement System to invest in each style based asset class ranging between a minimum and a maximum of total plan assets as indicated below:

Stated Ranges are as a Percent of Total Plan Assets

Mandate	*Minimum*	*Target*	*Maximum*
GLOBAL EQUITY	*20*	*56.5*	*65*
U.S. Large Cap Stocks	20	**24**	35
Large Cap Value	0	4	20
Large Cap Enhanced Core	0	10	35
Large Cap Growth	0	10	20
U.S. Small/Mid Cap Stocks	7.5	**22.5**	22.5
SMID Cap Core	0	12.5	22.5
Other Small, MID or SMID Cap (tbd)	0	10	22.5
Non US Stocks	5	**10**	10
International Developed Equity	5	10	10
GLOBAL FIXED INCOME	*15*	*28.5*	*100*
U.S. Core	15	18.50	100
Global Plus	0	10.00	10
ALTERNATIVES	*0*	*15*	*30*
Commodities	0	0	10
Multi-Strategy HFOF	0	10	10
Real Estate/REITs	0	5	10
Private Equity	0	0	10

During the investment manager selection process, the Board of Trustees will communicate specific manager guidelines regarding capitalization and stylistic characteristics such that the total portfolio conforms to policy. It is expected that these guidelines will be strategic in nature and not change frequently.

Asset Class Guidelines

The Board of Trustees believes long-term investment performance, in large part, is primarily a function of asset class mix. The Board of Trustees has reviewed the long-term performance characteristics of the broad asset classes, focusing on balancing the risks and rewards.

History suggest, that while interest-generating investments, such as bond portfolios, have the advantage of relative stability of principal value; they provide little opportunity for real long- term capital growth due to their susceptibility to inflation. On the other hand, equity investments, such as common stocks, clearly have a significantly higher expected return but have the disadvantage of much greater year-by-year variability of return. From an investment decision-making point of view, this year-by-year variability may be worth accepting, provided the time horizon for the equity portion of the portfolio is sufficiently long (greater than five years).

Adherence to Policy

The Board of Trustees is guided by the philosophy that asset allocation is the most significant determinant of long term investment return. The Retirement System asset allocation will be maintained as close to the target allocations as reasonably possible. Contributions to the Plan and withdrawals to pay benefits and expenses shall be allocated across portfolios to bring the asset mix as close to the target allocation as possible.

Rapid, substantive and unanticipated market shifts or changes in economic conditions may cause the asset mix to fall outside of the policy range. Any divergence caused by these factors should be of a short-term nature.

The Board of Trustees or its designee will review the Plan's allocation status at least quarterly. It is anticipated that active rebalancing will occur at least annually.

Cash Holdings

It shall be the policy of The Employees' Retirement System of The Sewerage & Water Board of New Orleans to be fully invested to the maximum extent possible. Any cash holdings in separate short term accounts should be kept as small as possible.

However, the Board of Trustees may from time to time authorize the use of cash equivalent(s)[7] and or money market fund(s)[8] as interim investment vehicle(s) for assets being transitioned from one manager/product to another.

For equity and fixed income portfolios, cash and short term instruments maturing in less than 360 days shall be restricted to a maximum of 5% of each portfolio except for brief periods or when building liquidity in anticipation of a large withdrawal.

Cash equivalent reserves shall consist of cash instruments having a quality rating by at least two rating agencies[9] of A-2, P-2, F-2, or higher.

Investment managers shall have discretion to invest up to 5% of assets under management in cash reserves when they deem it appropriate. However, the Investment

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[7] Fixed Income instrument maturing in 360 days or less
[8] Very liquid mutual fund that invests solely in cash equivalents
[9] Standard & Poor's, Moody's, or Fitch

Managers will be evaluated against their peers on the performance of the total funds under their direct management.

Non-Individual Securities

The Board of Trustees may authorize the use of non-individual securities such as indexed instruments[10] (interchangeably referred to as passive instruments), mutual funds, and other pooled (interchangeably referred to as commingled) investment vehicles.

Rebalancing

The percentage allocation to each asset class may vary as much as plus or minus 5% from the strategic allocation (policy), depending upon market conditions. When necessary and/or available, cash inflows/outflows will be deployed in a manner consistent with the strategic asset allocation of the Plan. If there are no cash flows, the allocation of the Plan will be reviewed quarterly.

If the Board of Trustees judges cash flows to be insufficient to bring the Plan within the strategic allocation ranges, the Board of Trustees shall decide whether to effect transactions to bring the strategic allocation within the threshold ranges.

[10] Also commonly referred to index funds, exchange traded funds, or ETFs.

GUIDELINES FOR INDIVIDUAL SECURITY HOLDINGS

	Equities	Fixed Income & Cash	Alternatives
Minimum Diversification Standards:			
Single Investment	(a) Maximum 6% *ϕ	(a) Maximum 10% *ϕ except U.S. Treasury Notes and Bonds	Not Applicable
	(b) Maximum of 5% of outstanding shares of any company		
Single Industry	(c) Maximum 25% *	(b) Maximum 25% *	
Single Sector	(d) Maximum of 2 times the appropriate style index	(c) Maximum of 2 times the appropriate style index. *	
Minimum Liquidity Standards	(a) Readily marketable securities of U.S corporations, foreign securities or ADRs	(a) Readily marketable U.S. Corporate and Government debt obligations, including mortgage pass-through, CMOs, convertible bonds and foreign securities.	Not Applicable
	(b) Traded on one or more domestic or international exchanges.	(b) Remaining outstanding principal value of the issue must be (and remain) at least $100 million unless Plan Trustees approve.	
Minimum Quality Standards	(a) At least 3 years of earnings history **	Minimum Quality Ratings: Cash & Equivalents – S&P A-2, Moody's P-2, Fitch F-2 S&P – BBB** Moody's – Baa** Only Core Plus portfolio is allowed to buy and/or hold bonds rated below BBB/Baa.	Not Applicable
	(b) Profitable (from continuing operations) in at least 3 of the last 5 years	BBB/Baa bonds not to exceed 15% of portfolio*, † For Core Plus only, bonds rated below BBB/Baa are not to exceed 15% of portfolio; non-rated bonds are not to exceed 1% of portfolio *	
Bond Maturities		(a) Minimum (single issue) maturity: None, but maturities under 12 months will be viewed as "cash" under this policy (b) Maximum remaining, term to maturity (single issue) at purchase: 30 years	Not Applicable

	Equities	Fixed Income & Cash	Alternatives
Foreign Securities	(a) Foreign securities to a maximum of 5%*	Foreign debt issues to a maximum of 5%*† Foreign debt issues to a maximum of 15% for Core Plus portfolio	Foreign debt issues to a maximum of 5%
Prohibited Categories	(a) Preferred stock (b) Lettered stock and other unregistered equity securities (c) Margin purchases (d) Short sales or warrants (e) Issuer related to the investment manager (f) Options, except as noted below (g) Commodity contracts, except stock index futures	(a) issuer related to the investment manager (b) Issues traded flat (not currently accruing interest) c) Debt obligations of either the Sewerage & Water Board of New Orleans or the City of New Orleans (d) Commodity contracts, except bond futures	(a) Direct Investments
Portfolio Turnover (maximum expected in one quarter without prior consultation)	35%	35%	Not Applicable
Reports to the Pension Committee	At least quarterly	At least quarterly	At least quarterly
Written Reports to the Committee	Monthly	Monthly	Quarterly

* Percentages refer to the market value of any single investment manager's portfolio, not the total fund. Small/Mid Cap Manager(s) is allowed a maximum of 10% in a single position. Foreign securities limitations do not apply to International Equity Manager(s) or Core Plus Bond Manager(s).

** Either as a stand alone company or as a separately identifiable subsidiary, division or line of business. Not applicable to Core Bond Plus, Private Equity, Real Estate/REIT, or Absolute Return. Refer to individual manager guidelines.

ϕ Exception given for index funds.

†With the exception of Convertible Bonds and Core Bond Plus. Refer to individual manager guidelines.

DUTIES AND RESPONSIBILITIES

The Board of Trustees is responsible for overseeing the Retirement Systems' investments. This includes, but is not limited to, the selection of acceptable asset classes, allowable ranges of holdings between asset classes and individual investment managers as a percent of assets, the definition of acceptable securities within each asset class, investment performance expectations, and monitoring compliance with state investment regulations.
The Board of Trustees selects, retains and replaces investment managers and custodians, and controls the asset allocation within policy limits.

The Board of Trustees will communicate the policy and performance expectations to the Investment Managers. The Board of Trustees will also review investment performance regularly to assure the policy is being followed and progress is being made toward achieving the objectives.

Board of Trustees

As fiduciaries under the Plan, the primary responsibilities of the Board of Trustees are:

1. Prepare and maintain this investment policy statement
2. Prudently diversify the Plan's assets to meet an agreed upon risk/return profile
3. Prudently select both actively managed and indexed (passive) investment products
4. Control and account for all investment, record keeping, and administrative expenses associated with the Plan
5. Monitor and supervise all service vendors and investment options
6. Avoid prohibited transactions and conflicts of interest.

Pension Consultant

The Board of Trustees will retain a third-party Consultant to assist the Board of Trustees in managing the overall investment process. The Consultant will be responsible for guiding the Board of Trustees through a disciplined and rigorous investment process to enable the Board of Trustees to meet the fiduciary responsibilities outlined herein.

Investment Managers

Distinguishable from the Board of Trustees and Pension Consultant, who are responsible for managing the investment process, investment managers are responsible for making investment decisions (security selection and price decisions). The Investment Managers shall be responsible for determining investment strategy and implementing security selection and the timing of purchases and sales within the policy guidelines set forth in this statement and as otherwise provided by the Board of Trustees. The specific duties and responsibilities of each investment manager are:

1. Manage the assets under their supervision in accordance with the guidelines and objectives outlined in their respective contracts, prospectus, or trust agreement.

2. Exercise full investment discretion with regards to buying, managing, and selling assets held in the portfolios.
3. If managing a separate account (as opposed to a mutual fund or a commingled account), seek approval from the Board of Trustees prior to purchasing and/or implementing the following securities and transactions, <u>unless otherwise stated in manager's contract with Board of Trustees</u>:
    - Letter stock and other unregistered securities; commodities or other commodity contracts; and short sales or margin transactions. Securities lending; pledging or hypothecating securities.
    - Investments in the equity securities of any company with a record of less than three years continuous operation, including the operation of any predecessor
    - Investments for the purpose of exercising control of management,
4. Vote promptly all proxies and related actions in a manner consistent with the long-term interest and objectives of the Plan as described in this IPS. Each investment manager shall keep detailed records of the voting of proxies and related actions and will comply with all applicable regulatory obligations.
5. Communicate with the Board of Trustees all significant changes pertaining to the fund it manages or the firm itself. Changes in ownership, organizational structure, financial condition, and professional staff are examples of changes to the firm in which the Board is interested.
6. Effect all transactions for the Plan subject to best price and execution. If a manager utilizes brokerage commission generated from Plan assets to effect soft-dollar transactions, records detailing all activity (brokerage and soft-dollar use) will be kept and communicated to the Board of Trustees on a monthly basis.
7. If applicable (i.e. for active equity managers), to direct its trading to designated commission recapture broker(s) at or near target level of 35% of total trades placed on behalf of Plan. Again, records detailing the level of participation will be kept and communicated to the Board of Trustees on a monthly basis.
8. Use the same care, skill, prudence, and due diligence under the circumstances then prevailing that experienced investment professionals, acting in a like capacity and fully familiar with such matters, would use in like activities for like retirement Plans with like aims in accordance and compliance with ERISA and all applicable laws, rules, and regulations.
9. If managing a separate account[11] (as opposed to an indexed product, mutual fund or commingled account), **<u>acknowledge co-fiduciary responsibility by signing and returning a copy of this IPS.</u>**

[11] Also referred to as SMA or separately managed account

Custodian

Custodians are responsible for the safekeeping of the Plan's assets. The specific duties and responsibilities of the custodian are:

1. Maintain separate accounts by legal registration
2. Value the holdings
3. Collect all income and dividends owed to the Plan
4. Settle all transactions (buy-sell orders) initiated by the Investment Manager
5. Provide monthly reports that detail transactions, cash flows, securities held and their current value, and change in value of each security and the overall portfolio since the previous report.

INVESTMENT PRODUCT AND MANAGER SELECTION

The process for selecting both indexed strategy products, as well as alternative strategy managers will consist of the Consultant's pre-search development of criterion which consider both quantitative and qualitative characteristics for the specific class and style of indexed or alternative strategy. The Board of Trustees will adopt and diligently apply this criterion in its selection of each passive product or alternative strategy manager.

With exception given to indexed products, for example an iShares or SPDR S&P 500 ETF, as well as alternative strategy managers, for example Private Equity, Absolute Return/HFOFs and/or Real Estate/REIT managers, the Board of Trustees will apply the following due diligence criteria in selecting each (active) equity and fixed income manager.

1. Regulatory oversight: Each investment manager should be a regulated bank, an insurance company, a mutual fund organization, or an SEC registered investment adviser.
2. Correlation to style or peer group: The product should be highly correlated to the asset class of the investment option. This is one of the most critical parts of the analysis, since most of the remaining due diligence involves comparisons of the manager to the appropriate peer group.
3. Performance relative to a peer group: The product's performance should be evaluated against the peer group's median manager return, for 1-, 3-, and 5-year cumulative periods.
4. Performance relative to assumed risk: The product's risk-adjusted performance (standard deviation, alpha and/or Sharpe Ratio) should be evaluated against the peer group's median manager's risk-adjusted performance.
5. Minimum track record: The product's inception date should be greater than three years.
6. Assets under management: The product should have at least $75 million under management.

7. Holdings consistent with style: The screened product should have no more than 20% of the portfolio invested in "unrelated" asset class securities.
8. Stability of the organization: i.e. *Manager Tenure* - no material organizational or investment team changes in the past two years.

Volatility

Consistent with the desire for adequate diversification, the investment policy is based on the assumption that the volatility of the combined portfolios will be similar to that of the market opportunity available to institutional investors with similar return objectives.

The volatility of each investment managers' portfolio will be compared to the volatility of appropriate market indices and peer groups. Above median volatility is acceptable only so long as performance is commensurately above median.

Liquidity

Based on current actuarial assumptions, it is expected that contributions will exceed benefit payments for the foreseeable future. Therefore, there is no need for Investment Managers to maintain liquid reserves for payment of pension benefits.

If benefit payments are projected to exceed contributions in some future period, the Board of Trustees or its designee will notify the investment managers well in advance of any withdrawal orders to allow them sufficient time to build up necessary liquid reserves. The managers will be expected to review the cash flow requirements with the Pension Committee at least annually.

Voting of Proxies

Voting of proxy ballots shall be for the exclusive benefits of the participants and beneficiaries of the Retirement System. Unless the Board of Trustees provides information on how to vote a proxy, the investment managers shall vote the proxies in accordance with its own policy for shareholder issues. Managers will communicate their proxy voting record to the Board of Trustees in writing every quarter and will provide a written summary of all proxies voted on an annual basis.

Execution of Security Trades

The Board of Trustees expects the purchase and sale of securities to be made in a manner designed to receive the combination of best price and execution. The Board of Trustees may implement a Directed Brokerage Program in the future. In June of 2001, the Board of Trustees implemented a Commission Recapture Program.

Securities Lending Guidelines

The Plan may engage in the lending of securities subject to the following guidelines:

1. Collateral on loans is set at 102% of the market value of the security plus accrued interest.
2. Collateral should be marked to market daily.
3. Securities of the System are not released until the custodian bank receives payment for the book entry withdrawal of the loaned security.

4. Eligible securities can include the lending of all U.S. Treasury and other government guaranteed securities, corporate securities, and common stock.

CONTROL PROCEDURES

Conflicts of Interest

The Investment Manager (and any persons acting on its behalf) who enters into a contract with the Plan must reasonably believe, immediately prior to entering into the contract, that the contract represents an arm's length arrangement between the parties and that the Board of Trustees, alone or together with the Board of Trustee's independent agents, understands the proposed method of compensation and its risks. In addition to the requirements of Form ADV, the Investment Manager shall disclose to the Board of Trustees, or to the Board of Trustee's independent agent, prior to entering into an advisory contract, all material information concerning the proposed advisory arrangement including the following:

1. The periods which will be used to measure investment performance throughout the contract and their significance in the computation of the manager's fee.
2. The nature of any index which will be used as a comparative measure of investment performance, the significance of the index, and the reason the Investment Manager believes the index is appropriate.
3. How the securities will be valued and the extent to which the valuation will be determined independently where the Investment Manager's compensation is based in part on the unrealized appreciation of securities for which market quotations are not readily available.

Review of Liabilities

All major liability assumptions regarding number of participants, compensation, benefit levels, and actuarial assumptions will be subject to an annual review by the Board. This review will focus on an analysis of major differences between the Retirement System's assumptions and actual experience.

Review of Investment Policy Statement

The IPS will be reviewed annually and updated with pertinent or substantive changes as frequent as necessary.

Review of Investment Objectives

Investment performance will be reviewed annually to determine the continued feasibility of achieving the investment objectives and the appropriateness of the investment policy for achieving these objectives.

It is not expected that the investment policy will change frequently. In particular, short-term changes in the financial markets should not require an adjustment in the investment policy.

Review of Investments

The Board will review in addition to the total fund; each active manager's and indexed product's performance at least quarterly with its Consultant. The total fund will be measured against a composite index of asset class proxies or benchmarks blended in the same percentages as the IPS asset allocation targets contained herein. Each active investment manager will be measured against an appropriate benchmark(s) as stated in their respective contract(s). Each indexed product will be measured against its appropriate tracking index.

Market Indices

Available benchmarking opportunities for the capital markets include the Dow Jones 30 Industrial Average, S&P 500, Russell 1000 Indexes for large cap equities, the Russell 2000 Index for small cap equities, the MSCI ACWI Index for global equities, the MSCI ACWI ex-U.S. Index for international equities, the Barclays Aggregate Bond Index for investment grade fixed income securities, Venture Economics Index for Private Equity, HFRI Fund-of-Funds Index for Absolute Return and/or other comparable indices appropriate for monitoring individual portfolio investment strategies. Some of the other comparable indices include style indices such as the Russell 1000 Growth or Value Index for large cap growth or value, and the Russell 2000 Growth or Value Index for small cap growth or value.

Performance reviews will focus on:

1. Total Retirement System and investment manager compliance with the IPS guidelines and stated investment regulations.
2. Material changes in the manager organizations, such as in investment philosophy, personnel, acquisitions or losses of major accounts, etc.
3. Comparison of managers' results to a universe of funds using a similar investment style and similar asset classes.
4. Comparison of managers' results to style specific benchmarks established for each individual manager's portfolio. Where multiple asset classes are employed in a portfolio, a customized benchmark index may be developed to mirror the asset classes utilized by the manager.
5. The appropriate market index will be stated in each investment manager's contract.

Compliance

On an ongoing basis, the Board of Trustees and its Consultant will review each investment manager's relative compliance with, and adherence to the principles, guidelines and benchmarks established in this IPS. Annually, each investment manager will be formally examined and graded individually. If, in the opinion of the Board of Trustees, there is concern for remedial action to be taken by the investment manager, it will be expressed and communicated by the Board of Trustees to the Investment Manager at that time.

The investment managers will be responsible for keeping the Board of Trustees advised of any material changes in personnel, investment strategy, or other pertinent information potentially affecting performance of all managers. The investment managers will be responsible for reconciliation with Custodian Bank.

Performance Expectations

The Board of Trustees recognizes that real return objectives may not be meaningful during some time periods. In order to ensure that investment opportunities available over a specific time period are fairly evaluated, the Board of Trustees will use comparative performance statistics to evaluate investment results. Each investment manager (whether equity, fixed income or alternative manager) and the total Retirement System, will be expected to achieve minimum performance standards as follows:

1) Rank in the top forty percent (40%) of an appropriate style peer group of actively managed portfolios over rolling three-year periods.
2) Exceed an appropriate benchmark index, net of management fees over rolling three-year periods.

The Board of Trustees is keenly aware that ongoing review and analysis of the Plan's investment products and managers is just as important as the due diligence implemented during the selection process. The net performance of all indexed products and investment managers will be monitored on an ongoing basis; and at the sole discretion of the Board of Trustees, corrective (probation, termination) or progressive (new hire, add funds) action may be taken if it is deemed appropriate at any time.

On a timely basis, but not less than quarterly, the Board of Trustees will meet to review whether or not individual active investment managers as well as indexed products achieve and maintain the Board's performance expectations as outlined above; specifically:

- The manager's adherence to the Plan's investment guidelines
- Material changes in the manager's organization, investment philosophy, and/or personnel
- Any legal, SEC, and/or other regulatory agency proceedings affecting the manager.

While these performance standards should be achieved over a three to five year period complete market cycle, the Board of Trustees will also monitor performance on a shorter-term basis.

The Investment Managers are requested to be aware at all times of the pension plan's actuarial assumption of seven percent (7%) overall annual return.

Probationary Period

Investment managers should be advised that the Board of Trustees intends to track interim progress toward multi-year (3 to 5-year) goals. However, if in the opinion of the Board of Trustees an investment manager's performance is deemed to be deficient, the Board of Trustees will inform the investment manager in writing that the firm has been placed on probation (*Watch List*). The length of an investment manager's probation period will be determined by the Board of Trustees on a case-by-case basis. If the Board of Trustees' concerns are not sufficiently addressed during this probationary period, or if the investment manager is unable to remedy deficiencies in performance, this would constitute grounds for termination of the investment manager.

An Investment Manager may be removed from probation if, in the opinion of the Board of Trustees, the factors which caused the probationary review have been eliminated, mitigated or otherwise appropriately and sufficiently addressed to the complete and total satisfaction of the Board of Trustees.

Specifically, a manager may be placed on the Watch List and a thorough review and analysis of the investment manager may be conducted, when:

1. A manager performs below median for their peer group over 1, 3, and/or 5 year cumulative period(s); or over any period deemed relevant by the Board of Trustees.

2. A manager's 1 to 3 year risk adjusted return (alpha and/or Sharpe) falls below the peer group's median risk adjusted return.

3. There is a change in the professionals managing the portfolio.

4. There is a significant decrease in the product's assets.

5. There is an indication the manager is deviating from his/her stated style and/or strategy.

6. There is an increase in the product's fees and expenses.

7. Any extraordinary event such as a substantive change in firm ownership occurs that may interfere with the manager's ability to fulfill their role in the future.

The Board of Trustees has determined it is in the best interest of the Plan's participants that performance objectives be established for each investment manager. Manager performance will be evaluated in terms of an appropriate market index (e.g. the S&P 500 stock index for large cap domestic equity manager) and the relevant peer group (e.g. the PSN[12] Large Cap Universe for large cap domestic managers).

A manager evaluation may include the following steps:

1. A letter to the manager asking for an analysis/explanation of their performance (underperformance) for the period(s) under review.
2. An analysis of recent transactions, holdings, and portfolio characteristics to determine the cause for underperformance or to check for a change in style.
3. A meeting with the manager, which may be conducted on-site, to gain insight into organizational changes and any changes in strategy or discipline.

[12] PSN Enterprise is a software application licensed by Plan's Consultant; powered by the PSN investment manager database. The PSN database provides connectivity to separately managed accounts, open ended mutual funds, closed end funds, exchange traded funds, hedge funds, fund-of-funds, stocks, variable annuities, and other investment content A proprietary platform of Informa Investment Solutions, the PSN database was fully integrated into the former Check Free Systems Mobius investment manager database in September 2006.

Style Benchmarks

Style Based Asset Class	**Index/Benchmark**	**Peer Group Universe**
Global Equity	***Russell 3000 Index***	***PSN All Cap***
Large Cap Value	Russell 1000 Value Index	PSN Large Cap Value
LC Enhanced Core	Russell 1000 Index	PSN Large Cap
Large Cap Growth	Russell 1000 Growth Index	*PSN Large Cap Growth*
Mid Cap Core	Russell Mid Cap Index	*PSN Mid Cap*
SMID Cap Core	Russell 2500 Index	PSN Small/Mid Cap
Small Cap Core	Russell 2000 Index	PSN Small Cap
International Equity	***MSCI ACWI-EX US Index***	***PSN Int'l Equity***
Global Fixed Income	***Barclays Aggregate Bond***	***PSN Core Plus Fixed***
Core Bond	Barclays Aggregate Bond Index	PSN Core Fixed
U.S. High Yield	Barclays HY US Index	PSN High Yield
Core-Plus Bond	1) Barclays Aggregate Bond Index 2) Barclays Agg Bond Index + 50 bps	PSN Core Plus Fixed
Global TIPS	Barclays World Inflation Linked Bond Index	PSN Global TIPS
Convertible Bonds	BofA ML Inv. Grade Convertible Bond Index	PSN Convertibles
Alternative Investments	***Custom Blended Index***	
Multi-Strat/Multi-Manager FOFs/Absolute Return	HFRI Fund-of-Funds Index	PSN Fund-of-Funds
Domestic REITs International REITs	MSCI REIT FTSE/EPRA NAREIT ex US	PSN REIT/Real Estate PSN Global/Int'l REIT
Commodities	S&P GSCI	PSN Commodities & Energy

Cause for Termination

While the Board of Trustees intends to fairly evaluate both indexed (passive) products and active investment managers over time; the Board reserves the right to terminate its relationship with a product sponsor or investment manager at any time without a probationary period if there is:

1. Failure to meet the Board of Trustees' communication and reporting requirements.
2. A significant change in the personnel managing the investment decisions of the Fund, or a change in the ownership of the Investment Manager that could be deemed to adversely impact the management of Fund assets.
3. A lack of confidence that the Investment Manager or his organization can produce acceptable results in the future.
4. Unacceptable justification for poor performance results.
5. Lack of responsiveness to the Board of Trustees.
6. A change in asset allocation which may result in the termination of an Investment Manager for reasons other than for cause.
7. In the Board of Trustees' opinion, a change of Investment Manager would be beneficial to the Plan.

There is no implied contract for a fixed time period, or otherwise, between the SWBNO Employees' Retirement System and any of its Investment Managers, and the relationship between the parties may be terminated at any time for any reason with prior written notification.

Measuring Costs

The Board of Trustees will review, at least annually, all costs associated with the management of the Plan's investments including:

1. Fees and expense reimbursements of pension consultant
2. Fees and expense ratios of each investment manager
3. Custody Fees: Encompassing the holding of the assets, the collection of income and disbursement of payments.
4. Trading Costs: Evaluating whether or not the manager is demonstrating attention to best execution efforts, commission recapture program targets[13], and other efficiencies in trading securities.

[13] Refer to Page 15, #'s 6 and 7 of this IPS for details

POLICY ADOPTION STATEMENT

This Investment Policy document is hereby adopted by the Board of Trustees of the Sewerage and Water Board of New Orleans on May 20, 2015.

Adopted by: The Board of Trustees of Sewerage and Water Board of New Orleans

______________________________, Trustee
Harold Heller

______________________________, Trustee
Marvin Russell

______________________________, Trustee
Gerald Tilton

______________________________, Trustee
John Wilson

______________________________, Trustee
Alan Arnold

______________________________, Trustee
Robin Barnes

________________________________, Trustee
Eric Blue

________________________________, Trustee
Marion Bracy

________________________________, Trustee
Dr. Tamika Duplessis

________________________________, Trustee
Scott Jacobs

________________________________, Trustee
Kerri Kane

________________________________, Trustee
Joseph Peychaud

________________________________, Trustee
Kimberly Thomas

CO-FIDUCIARY ACKNOWLEDGEMENT

The undersigned hereby acknowledges fiduciary capacity as defined by the Employee Retirement Investment Security Act (ERISA) of 1974.

The undersigned hereby acknowledges that it has read this Investment Policy Statement document and further will comply with the procedural and reporting requirements contained herein; and as amended by the Board of Trustees from time to time.

Acknowledged by:

Print Name:

Title:

Company:

APPENDIX A

Sewerage and Water Board of New Orleans
Board Officers

Mitchell J. Landrieu, President
Suchitra Satpathi, Mayor's Representative
Scott Jacobs, President Pro-Tem

Sewerage and Water Board of New Orleans
Board Members

Alan Arnold
Robin Barnes
Marion Bracy
Eric Blue
Dr. Tamika Duplessis
Scott Jacobs
Kerri Kane
Joseph Peychaud
Kimberly Thomas

Sewerage and Water Board of New Orleans
Employee Trustees

Harold Heller
Marvin Russell
Gerald Tilton
John Wilson

Sewerage and Water Board of New Orleans Management

Cedric S. Grant, Executive Director
Robert K. Miller, Deputy Executive Director

APPENDIX B

SUMMARY OF CAPITAL MARKET ASSUMPTIONS

GLOBAL ASSET CLASS	20 Year Forecast E_R	20 Year Forecast E_σ	Correlation Forecast to LCE
U.S. EQUITY			
LARGE CAP STOCKS	8.9	14.55	1
SMID CAP STOCKS	10.4	17.7	0.873
NON-U.S. EQUITY			
INTERNATIONAL DEVELOPED	9	17.19	0.856
INTERNATIONAL EMERGING	10.88	25	0.76
ILLIQUID EQUITY			
PRIVATE EQUITY	11.5	27	0.263
GLOBAL FIXED INCOME			
CORE BONDS	4.5	3.66	-0.081
US TIPS	6.05	7	0.016
HIGH YIELD	7.05	8.92	0.618
REAL ASSETS			
REAL ESTATE/REITS	7.65	15	0.579
COMMODITIES	4.5	21.36	0.254
DIVERSIFYING STRATEGIES			
HEDGE FUND-OF-FUNDS	6	5.62	0.593
CASH			
CASH & EQUIVALENTS	3	2.5	-0.061
INFLATION	2.2	1.8	0.008

Neither forecasts nor past performance are indicative of future results; therefore there is no implied assurance that any individual asset class will achieve the referenced return, risk or correlation characteristics.
Correlations are to US Large Cap Equity;
E_σ = quantified as a measurement of Standard Deviation or the annual variability of returns; and
E_R = Expected AROR Annualized Rate of Return.

APPENDIX C

GLOSSARY OF TERMS

Absolute Return Strategies: Strategies that are developed by private investment firms that seek to generate high absolute returns taking active positions in a variety of markets employing different financial instruments.

Active Management: (also called *active investing*) refers to a portfolio management strategy wherein the manager makes specific investments with the goal of outperforming an investment benchmark index. Investors or mutual funds that do not aspire to create a return in excess of the market benchmark index will often invest in an index fund that replicates as closely as possible the investment weighting and returns of that index. This is called passive management. Active management is the opposite of passive management, because the manager of a passive management fund does *not* seek to outperform the benchmark index.

Accumulated Benefit Obligation: ABO is an approximate measure of the liability of a pension plan in the event of a termination at the date the calculation is performed.
Alpha: This statistic measures a portfolio's return in excess of the market return adjusted for risk. It is a measure, of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk, which was taken for that level of market exposure.

Asset Allocation: The process of determining the optimal allocation of a fund's portfolio among broad asset classes.

AROR: Annualized rate of return.

Basis Point: 100 bps (basis points) equals 1%.

Best Execution: This is formally defined as the difference between the strike price (the price at which a security is actually bought or sold) and the "fair market price", which involves calculating opportunity costs by examining the security price immediately after the trade is placed. Best execution occurs when the trade involves no lost opportunity cost, for example, when there is no increase in the price of a security shortly after it is sold.

Beta: A statistical measure of the volatility or sensitivity, of rates of return on a portfolio or security in comparison to a market index. The beta value measures the expected change in return per one percent change in the return on the market. Thus, a portfolio with a beta of 1.1 would move 10% more than the market.

Commingled Fund: This is a type of investment fund that is similar to a mutual fund in that investors purchase and redeem units that represent ownership in a pool of securities. Commingled funds usually are offered through a bank- administered plan allowing for broader and more efficient investing.

Commission Recapture: An agreement by which a plan Fiduciary earns credits based upon the amount of brokerage commissions paid. These credits can be used for services that will benefit the plan such as consulting services, custodian fees, or hardware and software expenses.

Convertible Bonds: Securities, usually bonds or preferred shares that can be converted into common stock.

Core Fixed Income - A fixed income approach that applies 90% or more of the securities available in the Lehman Brothers Aggregate Index. MBS issues should be the major component of the portfolio in a core product.

Core Fixed Plus: A debt investment with which the investor loans money to an entity (company or government) that borrows the funds for a defined period of time at a specified interest rate. This fixed-income style permits managers to add instruments with greater risk and greater potential return, such as high yield, global and emerging market debt, to their core portfolios of investment-grade bonds.

Correlation Coefficient: Correlation measures the degree to which two variables are associated with one another. Correlation is a commonly used tool for constructing a well-diversified portfolio. Traditionally, equities and fixed-income asset returns have not moved closely together. The asset returns are not strongly correlated. A balanced fund with equities and fixed-income assets represents a diversified portfolio that attempts to take advantage of the low Correlation between the two asset classes.

Defined Benefit Plan: A DB plan is a type of employee benefit plan in which employees know (through a formula) what they receive upon retirement or after a specified number of years of employment with an employer. The employer is obligated to contribute funds into the defined benefit plan based on an actuarially determined obligation that takes into consideration the age of the workforce, their length of service and the investment earnings that are projected to be achieved from the funds contributed. Defined Benefit Plans are over funded if the present value of the future payment obligations to employees is less than the current value of the assets in the Plan. It is under funded if the obligations exceed the current value of these Plan assets.

Direct Investment: (1). Also referred to as **Direct Stock Plans** are offered by companies that allow you to purchase or sell stock directly through them without your having to engage an investment advisor or pay commissions to a broker. But you may have to pay a fee for using the plan's services. Some companies require that you already own stock in the company or are employed by the company before you may participate in their direct stock plans. You may be able to buy stock by investing a specific dollar amount rather than having to pay for an entire share. DSPs usually will not allow you to buy or sell your securities at a specific market price or at a specific time. Rather, the company will purchase or sell shares for the plan at established times — for example, on a daily, weekly, or monthly basis — and at an average market price. You can find when the company will buy and sell shares and how it determines the price by reading the company's disclosure documents. Depending on the plan, you may be able to have your shares transferred to your broker to have them sold, but the plan may charge you a fee to do so. (2.) Also refers to the prohibited process or transaction type as it relates to alternatives. For this purpose, Direct Investment is defined as an investment made directly by an investor with a private company as it relates to a Private Equity or Absolute Return transaction; without the benefit and discretion of a third party investment manager or advisor.

Directed Brokerage: Circumstances in which a board of trustees or other fiduciary requests that the investment to a particular broker so that the commissions generated can be used for specific services or resources. See ***Soft Dollars***.

Dollar-Weighted Rate of Return: Method of performance measurement that calculates returns based on the cash flows of a security or portfolio. A dollar-weighted return applies a discounted cash flow approach to obtain the return for a period. The discount rate that equates the cash inflow at the end of the period plus any net cash flows within the period with the initial outflow is the dollar-weighted rate of return. This return also is referred to as the internal rate of return (IRR).

Economically-Targeted Investment (ETI): Investments where the goal is to target a certain economic activity, sector, or area in order to produce corollary benefits in addition to the main objective of earning a competitive risk-adjusted rate of return.

Equal Weighted: In a portfolio setting, this is a composite of a manager's return for accounts managed that gives equal consideration to each portfolio's return without regard to size of the portfolio. Compare to ***Size-Weighted Return***. In index context, equal weighted means each stock is given equal consideration to the index return without regard to market capitalization. The Value Line Index is an example of an equal weighted index.

ERISA: Employee Retirement Income Security Act is a 1974 law governing the operation of most private pension and benefit plans. The law eased pension eligibility rules, set up the ***Pension Benefit Guaranty Corporation***, and established guidelines for the management of pension funds.

Fiduciary: Indicates the relationship of trust and confidence where one person (the Fiduciary) holds or controls property for the benefit of another person.

Any person who (1) exercises any discretionary authority or control over the management of a plan or the management or disposition of its assets, (2) renders investment advice for a fee or other compensation with respect to the funds or property of a plan, or has the authority to do so, or (3) has any discretionary authority or responsibility in the administration of a plan.

Foreign Direct Investment (FDI) is defined as a company from one country making a physical investment into building or factory in another country. Its definition can be extended to include investments made to acquire lasting interest in enterprises operating outside of the economy of the investor.

Fund-of-Funds: A fund-of-funds **(FoF)** is an investment fund that uses an investment strategy of holding a portfolio of other investment funds rather than investing directly in shares, bonds or other securities. This type of investing is often referred to as multi-manager investment.

There are different types of 'fund of funds', each investing in a different type of collective investment scheme (typically one type per FoF), eg. Mutual Fund FoF, Hedge Fund FoF, Private Equity FoF or Investment Trust FoF.

Geometric Return: A method of calculating returns which links portfolio results on a quarterly or monthly basis. This method is best illustrated by an example, and a comparison to Arithmetic Returns, which does not utilize a time link. Suppose a $100 portfolio returned +25% in the first quarter (ending value is $125) but lost 20% in the second quarter (ending value is $100). Over the two quarters the return was 0% - this is the geometric return. However, the arithmetic calculation would simply average the two returns: (+25%)(.5) + (-20%)(.5) +2.5%.

Global: This term commonly refers to all countries including the United States. Common benchmarks include the MSCI All Country World Index (ACWI).

Hedge Fund: A hedge fund is a private investment fund open to a limited range of investors that is permitted by regulators to undertake a wider range of activities than other investment funds and also pays a performance fee to its investment manager. Although each fund will have its own strategy which determines the type of investments and the methods of investment it undertakes, hedge funds as a class invest in a broad range of investments, from shares, debt and commodities to works of art.

As the name implies, hedge funds often seek to offset potential losses in the principal markets they invest in by hedging their investments using a variety of methods, most notably short selling. However, the term "hedge fund" has come to be applied to many funds that do not actually hedge their investments, and in particular to funds using short selling and other "hedging" methods to increase rather than reduce risk, with the expectation of increasing return.

Hedge Fund Fund-of-Funds: (HFOFs) An investment fund consisting of multiple hedge funds. HFOFs can be made up of several hedge funds with similar strategic focus or several hedge funds with varying or multiple strategies. The latter would be referred to as a multi-strategy HFOF.

International: This term commonly refers to all countries excluding the United States. Common benchmarks include the MSCI All Country World Index (ACWI) ex US and the MSCI EAFE Index.

Large Cap (LC) Enhanced Core: An investment seeking to provide a total return that exceeds that of typically the S&P 500 index. The fund normally invests at least 80% of net assets in common stocks that comprise the S&P 500 Index, convertible securities that are convertible into stocks included in that index, and derivatives whose returns are closely equivalent to the returns of the S&P 500 Index or its components. It generally holds fewer stocks than the index and may hold securities that are not in the index.

Large Cap Growth: Large-Cap Growth funds seek to invest in large companies with good growth prospects. According to Morningstar, large-cap funds invest in companies with market capitalizations of more than $11 billion. Other organizations may use different definitions. Large-cap funds typically are less volatile than mid-cap and small-cap funds because large companies are more established and more predictably successful than smaller companies. Large companies also are more likely to pay dividends. Growth funds often have high P/E ratios because managers are willing to pay a premium for stocks of fast-growing companies.

Large Cap Value: Large-Cap Value funds seek capital appreciation by investing primarily in large companies with market capitalizations of $5 billion or more. In selecting stocks, managers of value funds target companies that appear undervalued in terms of price-earnings ratios, price-to-book ratios or other such measures. Large-cap funds tend to be less volatile than those that invest in smaller companies.

Liquidity Risk: The risk that there will be insufficient cash to meet the fund's disbursement and expense requirements.

Market Capitalization: The market cap of a stock is its current price multiplied by the number of shares outstanding. It is the measure of a company's total value on a stock exchange.

Market Timing: A form of ***Active Management*** that moves funds between asset classes based on short-term expectations of movements in the capital markets. (Not recommended as a prudent process). It is very difficult to improve investment performance by attempting to forecast market peaks and troughs. A forecasting accuracy of at least 71% is required to outperform a buy and hold strategy.

Market-Weighted: Typically used in an index composite. The stocks in the index are weighted based on the total ***Market Capitalization*** of the issue. Thus, more consideration is given to the index's return for higher market capitalized issues than smaller market capitalized issues.

Money Markets: Financial markets in which financial assets with a maturity of less than one year are traded. Money market funds also. Refer to open-end mutual funds that invest in low-risk, highly liquid, short-term financial instruments and whose net asset value is kept stable at $1 per share. The average portfolio maturity is 30 to 60 days.

Passive Management: (also called **passive investing**) is a financial strategy in which a fund manager makes as few portfolio decisions as possible, in order to minimize transaction costs, including the incidence of capital gains tax. One popular method is to mimic the performance of an externally specified index—called an 'index funds'. Passive management is most common in the equity markets, where index funds track a stock market index, but it is becoming more common in other investment types, including bonds, commodities, and hedge funds.

Private Equity: Equity capital made available to companies or investors, but not quoted on a stock market. The funds raised through private equity can be used to develop new products and technologies, to expand working capital, to make acquisitions, or to strengthen a company's balance sheet.

Profit Sharing Plan: Retirement plan that receives contributions as a percentage of the company's profits.

Projected Benefit Obligation: PBO is a measure of a pension plan's liability at the calculation date assuming that the plan is ongoing and will not terminate in the foreseeable future.

Proxy Voting: A written authorization given by a shareholder to someone else to vote his or her shares at a stockholders annual or special meeting called to elect directors or for some other corporate purpose.

REIT (Real Estate Investment Trust): An investment fund whose objective is to hold real estate-related assets, either through mortgages, construction and development loans, or equity interests.

Residual Risk: Residual risk is the unsystematic, firm-specific, or diversifiable risk of a security or portfolio. It is the portion of the total risk of a security or portfolio that is unique to the security or portfolio itself and is not related to the overall market. The residual risk in a portfolio can be decreased by including assets that do not have similar unique risk.
For example, a company that relies heavily on oil would have the unique risk associated with a sudden cut in the supply of oil. A company that supplies oil would benefit from a cut in another company's supply of oil. A combination of the two assets helps to cancel out the unique risk of the supply of oil. The level of residual risk in a portfolio is a reflection of the "bets" which the manager places in a particular asset class or sector. Diversification of a portfolio can reduce or eliminate the residual risk of a portfolio.

Risk-Adjusted Return: The return on an asset or portfolio, modified to explicitly account for the risk of the asset or portfolio.

Risk-Free Rate-of-Return (R_f): This rate is widely accepted as the return on a 90-day T-Bill. This is used as a proxy for no risk due to its US Government issuance and short-term maturity. The term is really a misnomer since nothing is free of risk. It is utilized since certain economic models require a "risk free" point of departure. See ***Sharpe Ratio***.

R-squared (R^2): Formally called the coefficient of determination, this measures the overall strength or "explanatory power" of a statistical relationship. In general, a higher R^2 means a stronger statistical relationship between the variables that have been estimated, and therefore more confidence in using the estimation for decision-making.

SWBNO: Sewerage and Water Board of New Orleans (Plan Sponsor)

Safe Harbor Rules: A series of guidelines which when in full compliance may limit a fiduciary's liabilities.

Sharpe Ratio: This statistic is a commonly used measure of risk-adjusted return. It is calculated by subtracting the ***Risk-free Return*** (usually the then current 3-Month T-Bill rate) from the portfolio return and dividing the resulting "excess return" by the portfolio's total risk level (standard deviation). The result is a measure of return gained per unit of total risk taken. The Sharpe ratio can be used to compare the relative performance of managers. If two managers have the same level of risk but different levels of excess return, the manager with the higher Sharpe ratio would be preferable. The Sharpe ratio is most helpful when comparing managers with both different returns and different levels of risk. In this case, the Sharpe ratio provides a per-unit measure of the two managers that enables a comparison.

Socially-Targeted Investment: An investment that is undertaken based upon social, rather than purely financial, guidelines. See also ***Economically-Targeted Investment***.

Soft-Dollars: The portion of a plan's commission expense incurred in the buying and selling of securities that is allocated through a ***Directed Brokerage*** arrangement for the purpose of acquiring goods or services for the benefit of the plan. In many soft dollar arrangements, the payment scheme is affected through a brokerage affiliate of the consultant. Broker-consultants servicing smaller plans receive commissions directly from the counseled account. Other soft dollar schemes are effected through brokerages that, while acting as the clearing/transfer agent, also serve as the conduit for the payment of fees between the primary parties to the directed fee arrangement.

Standard Deviation (Risk): A statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns were normally distributed (i.e., has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

Strategic Asset Allocation: Rebalancing back to the normal mix at specified time intervals (quarterly) or when established tolerance bands are violated (±5%).

Tactical Asset Allocation: The "first cousin" to ***Market Timing*** because it uses certain "indicators" to make adjustments in the proportions of portfolio invested in three asset classes - stocks, bonds, and cash.

Time Horizon: *The Plan* or portfolio's investment time horizon is defined as the point in time when disbursements in a given year exceed the sum of contributions, and increase in assets as a result of investment performance. In other words, *the Plan's* time Horizon is the point in time when there is more money going out than there is coming in.

It can also be described as the primary variable in determining the allocation between equities and fixed income. An investment time horizon of less than five years is considered *short*, while five years or more is considered *long*.

Time-Weighted Rate of Return: Method of performance measurement that strips the effect of cash flows on investment performance by calculating sub period returns before and after a cash flow and averaging these sub period returns. Because dollars invested do not depend on the investment manager's choice, it is inappropriate to weight returns within a period by dollars.

Treasury Inflation Protected Securities (TIPS): A special type of Treasury note or bond that offers protection from inflation. As with other Treasuries, when you buy an inflation-indexed security you receive interest payments every six months and a payment of principal when the security matures. The difference is that the coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI).

Trading Costs: Behind investment management fees, trading accounts for the second highest cost of plan administration. Trading costs usually are usually quoted in cents per share. Median institutional trading costs range around 5 to 7 cents per share.

(U.S.) 90-Day T-Bill: The 90-Day or 3-Month T-Bill provides a measure of riskless return. The rate of return is the average interest rate available in the beginning of each month for a T-Bill maturing in 90 days.

(U.S.) Large Cap: Companies based in the United States referred to as domestic companies having market capitalizations between $10 billion and $200 billion.

(U.S.) Mid Cap: Companies based in the United States referred to as domestic companies having a market capitalization of between $2 billion and $10 billion.

(U.S.) SMID Cap: Companies based in the United States referred to as domestic companies having a market capitalization of between $300 million and $10 billion. A term commonly used to refer to an equity style of management which combines both Small Cap and Mid Cap disciplines. A term used to acknowledge both Small and Mid-Cap Stocks collectively.

(U.S.) Small Cap: The definition of (U.S.) small-cap can vary throughout the investment industry, but generally a company based in the United States with a market capitalization between $300 million to $2 billion.

Variance: The Variance is a statistical measure that indicates the spread of values within a set of values. For example, the range of daily prices for a stock will have a variance over a time period that reflects the amount that the stock price varies from the average, or mean price of the stock over the time period. Variance is useful as a risk statistic because it gives an indication of how much the value of a portfolio might fluctuate up or down from the average value over a given time.

This glossary was compiled from various sources including the following:

Eugene B. Burroughs, CFA, Investment Terminology (Revised Edition), International Foundation of Employee Benefit Plans, Inc., 1993;
John Downes, Jordan Elliot Goodman, Dictionary of Finance and Investment Terms (Third Edition), Barron's Educational Series, Inc.;
John W. Guy, How to Invest Someone Else's Money, Irwin Professional Publishing, Burr Ridge, Illinois;
Donald B. Trone, William R. Allbright, Philip R. Taylor, The Management of Investment Decisions, Irwin Professional Publishing, Burr Ridge, Illinois;
Donald B. Trone and William R. Allbright, Procedural Prudence for Fiduciaries, self- published, 1997;
Foundation for Fiduciary Studies, Auditor's Handbook, 2002-2003;
Investment Management Consultants Association (IMCA); and
PSN Enterprise