Sewerage & Water Board of New Orleans

Chief Investment Officer's Presentation to the Pension Committee

January 17, 2018

January Meeting Agenda

- Ensure Compliance with Target Asset Allocation & Ranges
- Investment Philosophy
- Prioritizing and Clarifying Investment Objectives
- Investment Consultant Search
  - Role of Investment Operations Consultant
  - Custody Presentation by Janice Leaumont, Capital One
- Communication (Follow-Up From December)

ERS Mission Statement

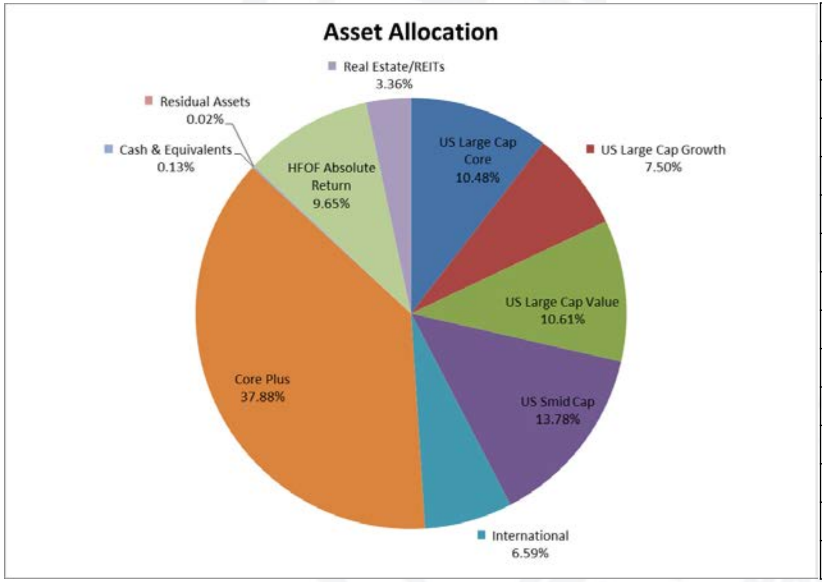
- ***Prudently manage an actuarially sound pension fund***
- ***solely in the interest of participants and beneficiaries***
- ***in a cost-effective manner.***

Governance

MONITORING ASSET ALLOCATION

Asset Allocation

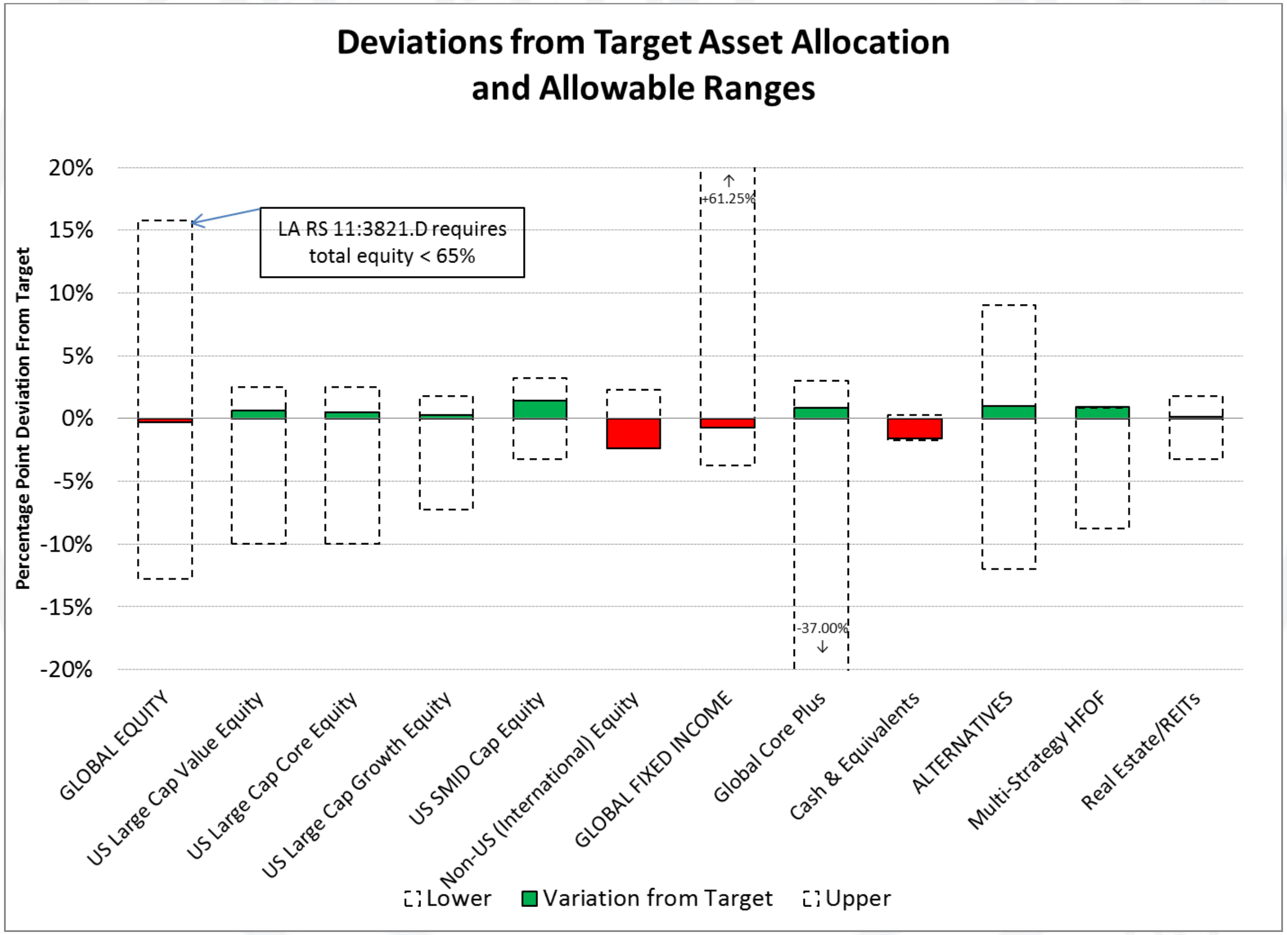
November 30, 2017



Asset Class / Sub Asset Class	Value	Actual	Target	Difference
US Large Cap Core	22,470,902	10.48%	10.00%	0.48%
US Large Cap Growth	16,076,568	7.50%	7.25%	0.25%
US Large Cap Value	22,745,946	10.61%	10.00%	0.61%
US Smid Cap	29,540,196	13.78%	13.00%	0.78%
International	14,136,867	6.59%	9.00%	-2.41%
Total EQUITY	**104,970,479**	**48.97%**	**49.25%**	**-0.28%**
Core Plus	81,195,127	37.88%	37.00%	0.88%
Cash & Equivalents	274,977	0.13%	1.75%	-1.62%
Residual Assets	43,072	0.02%	0.00%	0.02%
Total FIXED INCOME	**81,513,176**	**38.02%**	**38.75%**	**-0.73%**
HFOF Absolute Return	20,689,081	9.65%	8.75%	0.90%
Real Estate/REITs	7,199,412	3.36%	3.25%	0.11%
Total ALTERNATIVES	**27,888,493**	**13.01%**	**12.00%**	**1.01%**
TOTAL	**214,372,148**	**100.00%**	**100.00%**	**0.00%**

Compliance with Asset Allocation Policy

November 30, 2017



Compliance with Policy
Asset Allocation

- The IPS states that the Plan's allocation status be reviewed "at least quarterly. It is anticipated that active rebalancing will occur at least annually."
- A rebalance to target was undertaken and the last trade was completed on December 6th.
- In November,
  - Multi-strategy Fund of Hedge Funds was 3 bps over its range maximum and
  - International Equity was 16 bps below its range minimum.
  - Otherwise, the fund was compliant with statute and IPS.
- The inability to approve trades in a timely manner caused two passive accounts to *underperform* their benchmarks. That cost to the total fund was less than previously estimated but still -9 bps or -$193,445.

Recommendation

INVESTMENT PHILOSOPHY

Investment Philosophy

- The goal of investing is to earn enough to meet your objectives.
- Understand what you can control (in descending order: costs, liquidity, risk, and returns).
  - While you cannot control returns, you can decide to buy low and sell high.
- We have met the enemy, and he is us.
- There are limits to prediction:
  - The future is unknowable, so diversify.
  - Market timing is generally unrewarding.
  - Markets don't just mean revert, they overshoot.
- There are trade-offs in investing:
  - More risk must be assumed to gain higher expected returns.
  - Excess returns and market efficiency are inversely related and often cyclical.
  - Too much capital is the enemy of good returns.
- Performance cannot be guaranteed, but there are some predictions:
  - Philosophy, processes, and organizational resources drive excess returns. Culture and alignment of interest can enhance or detract.
  - IR is a function of skills, breadth, and freedom.

The future is unknowable, so diversify.

Economic/Investment Regimes

Real Returns for 136 3-Year Periods Ending 1873-2008

INFLATION

GROWTH		HI	MED	LO
HI		Overheating	Happier Medium - A	Best of All Worlds
	Count	8	23	23
	Stocks	-0.6 %	11.3 %	13.4 %
	T-Bonds	-2.9	2.0	4.3
	Corps	-1.3	3.4	6.5
	PPI Com	3.2	-0.4	-0.3
	GDP	9.0	6.0	6.2
	CPI	7.7	2.3	-1.0
4%				
MED		Undermining	Happy Medium	Happier Medium - B
	Count	12	21	14
	Stocks	1.7 %	8.6 %	12.1 %
	T-Bonds	-0.2	2.7	3.3
	Corps	1.8	4.2	5.2
	PPI Com	-0.8	-0.3	-0.6
	GDP	3.0	3.1	3.0
	CPI	7.5	2.4	-4.0
2%				
LO		Stagflation	Sluggish	Deflation
	Count	12	8	15
	Stocks	1.9 %	1.1 %	1.0 %
	T-Bonds	-0.7	2.3	6.2
	Corps	1.1	3.4	9.0
	PPI Com	-0.2	0.1	-1.8
	GDP	nil	0.7	-1.1
	CPI	7.5	2.1	-2.7

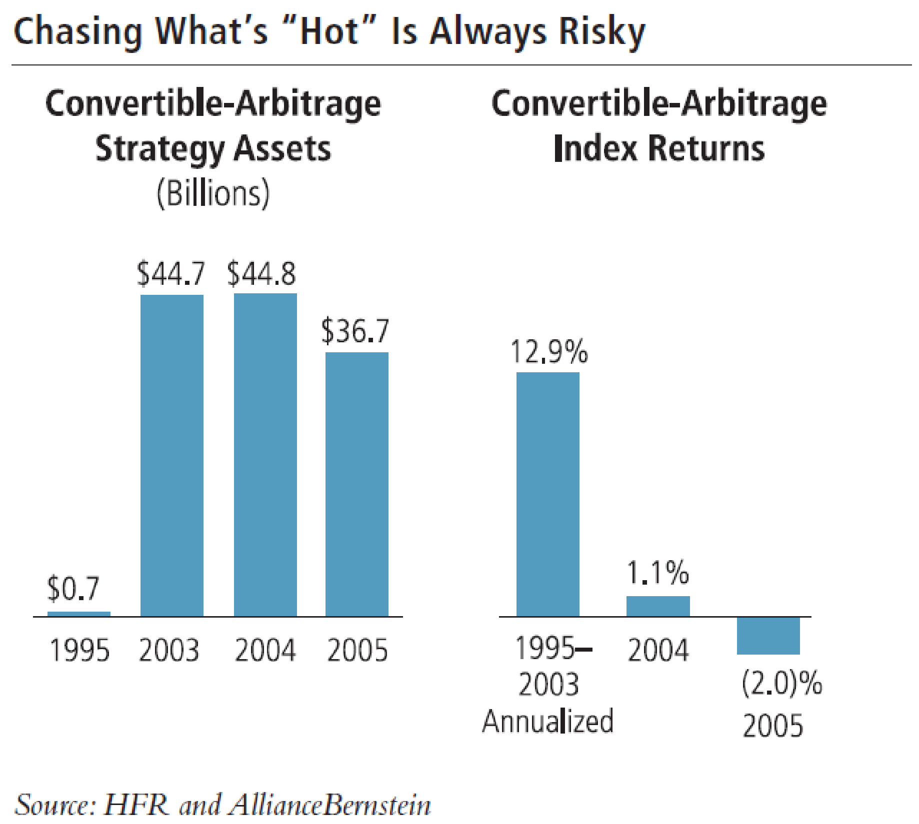
4% 1%

Source: Tom Croft, Tim Viezer, and Brian Coffey, "University of Cincinnati and University of Cincinnati Foundation Investment Committees Review," April 24, 2009.

We have met the enemy, and he is us.

- The term “animal spirits” has been used to describe human emotions (e.g., greed and fear) that drive markets.
- <u>Behavioral finance</u> is a field of field that seeks to combine social and psychological theory with conventional economics and finance to provide explanations for why people make irrational financial decisions.
- <u>Neuroeconomics</u> is an interdisciplinary field that combines neuroscience, economics, and psychology to explain economic decision-making.
  - Our brains have evolved over a couple of million years for primative survival but only a few thousand years in civilization.
  - Our brains are “wired” more to avoid being eaten by a bear than to know how to rationally invest in a bull or bear market.

Too much capital is the enemy of good returns.



Source: AllianceBernstein, "What Lies Beneath: Navigating the Hedge-Fund Market," November 2006, p. 15.

IR is a function of skills, breadth, and freedom.

- “Fundamental Law of Active Management”
- Developed by Richard Grinold in 1989 and extended in 2002 by Roger Clarke and his co-authors
- Attempts to predict an investment manager’s excess return per unit of risk (e.g., their “bang for the buck”) based upon three variables: skill, breadth, and freedom.
- Efficiency = Skill times Breadth times Freedom
  - $IR = IC \times \sqrt{N} \times TC$
  - where IR = information ratio. Skill is measured by the information coefficient (IC). Breadth is measured by the number of independent bets (N). Freedom is measured by the transfer coefficient (TC).

Discussion

PRIORITIZING INVESTMENT OBJECTIVES

Investment Policy Statement contains the following objectives

1. Have the ability to pay all benefit and expense obligations when due.
2. Achieve a fully funded status with regard to the Accumulated Benefit Obligation and 100% of the Projected Benefit Obligation.
3. Maintain the purchasing power of current assets and all future contributions by producing positive real rates of return on Plan assets.
4. Maximize returns within reasonable and prudent levels of risk in order to minimize contributions.
5. Control costs of administering the plan and managing the investments.
6. Maintain flexibility in determining the future level of contributions.

Working Group

- Decide whether to amend the current investment objective #6
  - From "*maintain flexibility in determining the future level of contributions*"
  - To "*provide a stable funding environment which mitigates the effect of large changes in investment performance on funding contribution volatility*."
- Develop a "funding policy" (GFOA Best Practice) which contain these three core elements:
  - Actuarial cost method
  - Asset smoothing method
  - Amortization policy

Discussion

INVESTMENT OPERATIONS CONSULTANT SEARCH

Investment Operations Governance: Preliminary Discussion of Roles

- Board of Trustees/Board of Directors*
  - Approves benefit, contribution, and asset allocation policies; appoints/removes custodian, consultant.
- Pension Committee
  - Makes recommendations to the Board of Trustees
- Chief Investment Officer
  - *Ideally, works with general investment consultant, recommends investments, negotiates and executes contracts with approved vendors, directs funds <u>between</u> approved managers in accordance with IPS, executes (signs) trade orders to <u>external managers</u>.*
- S&WB Finance
  - Tells CIO/consultant how much is needed to pay benefits, approves movement of funds <u>in and out of bank</u>, reconciles accounts, prepares financial reports.
- Investment (Operations) Consultant
  - Facilitates, monitors, ensures the flow of quality information through and between external managers, custodian, external performance and analytics reporter (general investment consultant), S&WB Finance, and Chief Investment Officer for: (a) changes in fund allocation, (b) reporting, and (c) compliance.
- Custodian
  - Safeguards assets, settles trades, effectuates transfers of funds in, out, and within the bank account(s).
- External Investment Managers
  - Buys and sells securities within separate or commingled accounts. *Ideally, takes direction from the Chief Investment Officer on timing and amounts of additions/withdrawals.* Works with Custodian, S&WB Finance, and Operations. Requests fee payments to S&WB Finance which validates and approves release of funds.

Presentation by Janice Leaumont

CUSTODY

Discussion

COMMUNICATION WITH PARTICIPANTS & BENEFICIARIES

Communication with Participants and Beneficiaries

- CFA Code of Conduct for Members of a Pension Scheme Governing Body: "Communicate with participants, beneficiaries, and supervisory authorities in a timely, accurate, and transparent manner."
- Methods of Communication
  - ✓ Managers' Meeting
  - ✓ Pipeliner
  - ✓ Intranet
  - ❑ Mass Meetings
    - Who will set up? When? Message?
  - ❑ Letter to Retirees
    - Who will set up? When? Message?

Pension Fund Intranet

February Meeting Agenda

- Actuarial Fundamentals
  - **It is important that <u>all</u> Trustees attend this session.**
  - *Resolution R-140-2017 states that no new board member shall be permitted to vote on any matter until he/she has completed two hours of fiduciary and ethics education and one hour of education in each of investments, actuarial science, and laws, rules, and regulations.*
- Quarterly and Year-End Performance Review
- Formally adopt investment philosophy.

Appendix A
CFA Institute's Code of Conduct for Members of a Pension Scheme Governing Body

1. Act in good faith and in the best interest of the scheme participants and beneficiaries.
2. Act with prudence and reasonable care.
3. Act with skill, competence, and diligence.
4. Maintain independence and objectivity by, among other actions, avoiding conflicts of interest, refraining from self-dealing, and refusing any gift that could reasonably be expected to affect their loyalty.
5. Abide by all applicable laws, rules, and regulations, including the terms of the scheme documents.
6. Deal fairly, objectively, and impartially with all participants and beneficiaries.
7. Take actions that are consistent with the established mission of the scheme and the policies that support that mission.
8. Review on a regular basis the efficiency and effectiveness of the scheme's success in meeting its goals, including assessing the performance and actions of scheme service providers, such as investment managers, consultants, and actuaries.
9. Maintain confidentiality of scheme, participant, and beneficiary information.
10. Communicate with participants, beneficiaries, and supervisory authorities in a timely, accurate, and transparent manner.

Appendix B
Committee & Board Decisions

I. **FOUNDATIONAL DECISIONS** (October 2017 – December 2017)

A. Clarify governance focus

- ✓ Amend the current IPS to reflect 2015 decisions.
- ✓ Adopt an ERS Mission Statement
- ✓ Adopt the CFA Code of Conduct for Members of a Pension Governing Body
- ✓ Adopt a resolution to strongly encourage BOT to adhere to LA RS 11:185 Trustee Education requirements starting September 2018.

B. Decisions needed to complete Asset-Liability Study By June 2018

5. Amend and prioritize investment objectives
- ✓ Hire Asset-Liability Consultant

C. Decisions needed to issue RFP for General Investment Consultant

7. Adopt Investment Philosophy
8. Agree upon an investment manager search process (based upon philosophy & policies)
9. Agree upon investment consultant duties and governance matrix

Appendix B
Committee & Board Decisions

II. <u>MAJOR DECISIONS</u> (May 2018 – September 2018)*

D. Preparation

10. Governance Matrix:
    a. Who decides (and how) benefits?
    b. Who decides (and how) employer contributions?
    c. Who decides (and how) employee contributions?
    d. Who decides (and how) investment policy?
11. Hire General Investment Consultant
12. Adopt Statement of Risk Capacity and Risk Appetite

E. The BIG THREE Decision-Making

13. Benefit Policy
14. Contribution Policy
    a. Employee
    b. Employer
15. Investment Policy – Asset Allocation

Appendix B
Committee & Board Decisions

III. <u>FORMALIZE CUMULATIVE DECISIONS</u> (September 2018 – December 2018)*

F. Update Documents

16. Amend Investment Policy Statement
17. Amend Bylaws
18. Amend Rules and Regulations

IV. <u>IMPLEMENT ASSET ALLOCATION</u> (September 2018 – March 2019)*

G. Portfolio Construction

H. Investment Managers

*Dates are tentative and subject to revision.

Appendix C
PRMIA Principles of Good Governance*

- Key Competencies
- Resources and Processes
- Ongoing Education and Development
- Compensation Architecture
- Independence of Key Parties
- Risk Appetite
- External Validation
- Clear Accountability
- Disclosure and Transparency
- Trust, honesty and fairness of key people

*Professional Risk Managers' International Association, 2009

Sewerage & Water Board of New Orleans

Re-Building the City's Water Systems for the 21st Century

Wealth and Asset Management Overview

January 17th , 2018

Presented to: Sewerage & Water Board of New Orleans

Presented by: **Janice M. Leaumont**
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Wealth and Asset Management
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WEALTH AND ASSET MANAGEMENT

WHY CAPITAL ONE?

THE RIGHT PARTNER

Proven Strength and Reputation

- Headquartered in McLean, Virginia
- Capital One Financial ranks as a Fortune 200 company
- $350 billion in total assets*
- Capital One Bank is one of the ten largest banks in the U.S.
- 130+ years of banking experience, including its predecessors

Wealth and Asset Management Heritage

- Over 80 years experience in wealth and asset management, including its predecessors
- Partnership approach equips us to develop lasting relationships
- Experienced local talent with a global perspective
- A consultative, hands-on approach that delivers consistent results
- Skills and expertise in investment management
- Over $10.7 billion in assets under administration*
- Over $4.1 billion in assets under management*

** As of 6/30/2017*

CONSULTATIVE SOLUTIONS

The Wealth and Asset Management group at Capital One N.A. (CONA) provides a consultative, hands-on approach with customized solutions to help non-profits, individuals, businesses and their owners and institutions grow, manage, protect and transfer wealth. Those solutions include:

Institutional Client Services

- Investment Management
- Outsourced CIO Services
- Foundation and Endowment Services
- Custody & Escrow Services

Retirement Benefits Consulting

- Plan Consultation
- Plan Governance
- Investment Advice
- Education and Enrollment
- Cost Analysis
- RFP Process

Personal Client Services

- Investment Management
- Trust Administration
- Real Estate and Mineral Management
- Wealth Planning
- Estate Settlement
- Individual Retirement Planning

Please see accompanying disclosures

Capital One®

ADMINISTRATION AND REPORTING

INVESTMENT AND ADMINISTRATION SERVICES

As one of the nation's ten largest banks, Capital One, N.A. offers the following custodial solutions:

- Safekeeping of securities
- Trade settlements
- Transaction management
- Accounting & reporting (including online reporting)
- Collection and crediting of interest and dividends
- Securing electronic transfers

Clients have entrusted over $10.7 billion* to Capital One N.A.'s care and custody. Our professionals have provided customized solutions for institutional clients for more than 80 years, including predecessors.

** As of 6/30/217*

CUSTOMIZATION TO MATCH CLIENT NEEDS

In an increasingly consolidated, one-size-fits-all industry, Capital One Wealth and Asset Management provides customized services tailored to our clients' needs. As a Capital One Wealth and Asset Management client, you decide the following:

- Cost basis reporting – you select the reporting method you prefer, including the average cost or specific lots methods
- Trade date/settlement date – you select the reporting you prefer
- Real time access to data – you have access to asset and transaction data via download from Portfolio On Line ™
- Reporting on accrual or cash basis – you select the reporting basis you prefer
- Statement frequency* – you select the frequency of accounting of all assets and transactions – monthly, quarterly, annually, or any combination thereof.

**For discretionary investment management accounts, minimum statement frequency is quarterly.*

BMO Securities Lending overview

– BMO Securities Lending offers institutional clients the opportunity to enhance market returns on securities held in their portfolio. BMO develops a customized program in partnership with clients that aligns with the client's objectives and risk tolerance. Clients look at securities lending as an extension of their overall investment strategy.

– BMO's client base includes corporate retirement plans, foundations and endowments, health care providers, insurance companies, mutual funds, public funds and Taft-Hartley funds.

– The client retains all rights of ownership except the ability to vote proxies. Client has the ability to recall securities for proxy voting.

– The client's account(s) at the custody bank is credited with the monthly earnings.

– Sewerage & Water Board has earned $1.87 million in securities lending revenue since 2001 ($71,000 YTD through July).

BIOS

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Senior Institutional Trust Officer

Ms. Leaumont has more than 25 years of trust and banking experience. Ms. Leaumont is responsible for the daily management and administration of large institutional client relationships. In this role, she provides client service, reviews new business opportunities and documentation, assists in closing new business, and administers institutional investment management, custody, and escrow accounts. Prior to joining Capital One, she was a institutional trust officer for Hancock/Whitney Bank, JPMorgan and it's predecessors' and Hibernia National Bank, all in the greater New Orleans area. Ms. Leaumont earned her B.S. in Business Administration from Louisiana State University.

BEST PRACTICE

Core Elements of a Pension Funding Policy (CORBA) (2013)

Background. The Government Finance Officers Association (GFOA) has recommended that every state and local government that offers defined benefit pensions formally adopt a funding policy that provides reasonable assurance that the cost of those benefits will be funded in an equitable and sustainable manner.[1] To provide the desired degree of assurance, a pension funding policy would need to incorporate the following principles and objectives:

1. Every government employer that offers defined benefit pensions should obtain no less than biennially an actuarially determined contribution (ADC) to serve as the basis for its contributions;
2. The ADC should be calculated in a manner that fully funds the long-term costs of promised benefits, while balancing the goals of 1) keeping contributions relatively stable and 2) equitably allocating the costs over the employees' period of active service;
3. Every government employer that offers defined benefit pensions should make a commitment to fund the full amount of the ADC each period. (For some government employers, a reasonable transition period will be necessary before this objective can be accomplished);
4. Every government employer that offers defined benefit pensions should demonstrate accountability and transparency by communicating all of the information necessary for assessing the government's progress toward meeting its pension funding objectives.

These principles and objectives necessarily will affect decisions related to the treatment of three core elements of a comprehensive pension funding policy:

- *Actuarial cost method* - the technique used to allocate the total present value of future benefits over an employee's working career (*normal cost*/*service cost*).
- *Asset smoothing method* - the technique used to recognize gains or losses in pension assets over some period of time so as to reduce the effects of market volatility and stabilize contributions.
- *Amortization policy* - The length of time and the structure selected for increasing or decreasing contributions to systematically eliminate any unfunded actuarial accrued liability or surplus.

Recommendations. To ensure consistency with the principles and objectives described above, the GFOA recommends that a pension funding policy treat each of its core elements as follows:

[1] "Guidelines for Funding Defined Benefit Pensions" (2013) (CORBA).

Actuarial cost method. The actuarial cost method selected for funding purposes should conform to actuarial standards of practice and allocate normal costs over a period beginning no earlier than the date of employment and should not exceed the last assumed retirement age. Moreover, the selected actuarial cost method should be designed to fully fund the long-term costs of promised benefits, consistent with the objective of keeping contributions relatively stable and equitably allocating the costs over the employees' period of active service.[2] While not the only method that would satisfy this criterion, the entry age method—level percentage of pay normal cost—is especially well suited to achieving this purpose.

Asset smoothing. The method used for asset smoothing should:

- Be unbiased relative to market. Thus, for example:
    - The same smoothing period should be used for both gains and losses, and
    - Market corridors (a range beyond which deviations are *not* smoothed), if used, should be symmetrical[3], and
- Provide for smoothing to occur over fixed periods (the use of rolling periods normally should be avoided), ideally of five years or less, but never longer than ten years.
    - Provide for a market corridor if smoothing is to occur over a period longer than five years.

Amortization. Amortization of the unfunded actuarial accrued liability[4] should:

- Use fixed (closed) periods that
    - Are selected so as to balance the twin goals of demographic matching (equitable allocation of cost among generations) and volatility management (funding at a level percentage of payroll) and
    - Never exceed 25 years, but ideally fall in the 15-20 year range;
- Use a layered approach for the various components to be amortized (that is, an approach that separately tracks the different components to be amortized); and emerge as a level percentage of member compensation or as a level dollar amount.

Additional considerations for plans closed to new entrants. When a plan is closed to new participants, the aggregate actuarial cost method – level percentage of pay normal cost – is especially well suited for funding.

For closed plans with no remaining active members:

- Special attention needs to be given to the mix of investments (given the shorter time horizon); and
- In comparison to open plans:

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[2] Employers using some other actuarial cost method should carefully monitor demographic changes and trends in the covered workforce inasmuch as such changes could result in increased employer contributions as a percentage of payroll.

[3] Generally, the appropriate corridor will depend upon the length of the smoothing period, with longer smoothing periods requiring narrower corridors.

[4] Special considerations may apply to the amortization of a surplus (e.g., use of a longer amortization period).

    - Asset smoothing periods should be shorter (typically no longer than three years);
        - Corridors, if used, should be narrower; and
    - Amortization periods should be shorter (typically no longer than 10 years for gains and losses).

For closed plans that still have active members:

- The continued use of level percent of member compensation amortization remains appropriate, but *not* for a long period (i.e., as the number of active members decreases); and
- In comparison to open plans:
    - Asset smoothing periods should be shorter;
        - For asset smoothing periods that exceed five years, a corridor (not to exceed 20 percent) should be used; and
    - Amortization periods should be shorter.

References.

- California Actuarial Advisory Panel, *Actuarial Funding Policies and Practices for Public Pension and OPEB Plans*, February 2013 at: http://www.sco.ca.gov/Files-ARD/BudLeg/CAAP_Funding_Policies_w_letter.pdf

BEST PRACTICE

Sustainable Funding Practices of Defined Benefit Pension Plans (1994, 2005, 2008 and 2009) (CORBA)

Background. The fundamental financial objective of a public employee defined benefit (DB) pension plan is to fund the long-term cost of benefits promised to the plan participants. It is widely acknowledged that the appropriate way to attain reasonable assurance that pension benefits will remain sustainable is for a government to accumulate resources for future benefit payments in a systematic and disciplined manner during the active service life of the benefitting employees.

Long-term funding is accomplished through contributions from the employer and employee, and from investment earnings, which typically provide the largest component of funding. Contributions are often expressed as a percentage of active member payroll, which should remain approximately level from one year to the next. Principles of accrual accounting require that the total cost of employee services be recognized in the period in which those services are rendered. A plan's funding policy codifies the pension system's commitment to fund benefit promises based on regular actuarial valuations. Creating a funding policy that embodies these accounting and funding principles is a prudent governance practice and helps achieve intergenerational equity among those who are called on to financially support the plan, thereby avoiding the transfer of costs to future generations.

Recommendation. The Government Finance Officers Association (GFOA) recommends that state and local government officials ensure that the costs of the benefits promised in public employee DB plans are properly measured and reported, in accordance with generally accepted accounting principles (GAAP)[1]. The GFOA believes sustainability requires that governments that sponsor or participate in a defined benefit pension plan contribute the full amount of their actuarially determined annual required contribution (ARC) each year. Failing to fund the ARC during recessionary periods impairs investment returns by depriving the fund of its opportunity to invest when stock prices are low. Long-term investment performance will suffer and ultimately require higher contributions.

In pursuing these standards and criteria, public officials and retirement system trustees should, at a minimum, adhere to the following best practices:

1. Adopt a funding policy targeting a 100 percent or more funded ratio (full funding). The funding policy should provide for a stable amortization period over time[2], with parameters provided for making changes that are based on specific circumstances. Establish a period for amortization of unfunded actuarial accrued liabilities that does not exceed the parameters established by GAAP[3] and that is consistent with the funding policy of the plan.

2. Discuss the funding and amortization methods with your actuary, and select the one that most closely aligns with the funding policy. The actuarial funding method selected is a key component of the funding

[1] The Governmental Accounting Standards Board (GASB) currently sets GAAP for state and local governments.
[2] Public officials and retirement system trustees should exercise extreme caution when considering the use of "open amortization" since this method can delay full amortization indefinitely, and could even result in the amount to be amortized increasing rather than decreasing.
[3] GASB standards set a maximum amortization period of no longer than 30 years.

policy of the plan[4]. Some funding methods may result in more variations in the ARC (the portion of the present value of projected benefits that is attributable to the current period) than others. Governments should take measures to reduce the volatility in the ARC in order to create a more predictable operating budget and enhance their ability to meet funding obligations.

3. The funding policy should stipulate that employer and employee contributions are to be made at regular intervals, with the contribution amount determined by the results of a recent actuarial valuation of the system. To ensure that this objective can be achieved, the funding policy should be integrated with investment and asset allocation policies. Reductions or postponements in collecting the ARC would typically be inconsistent with the assumptions made in computing the ARC. When contributions fall below the ARC, the board of trustees should prepare a report that analyzes what effect the underfunding has on the system and distribute the report to all stakeholders.

4. Have an actuarial valuation prepared at least biennially by a qualified actuary in accordance with generally accepted actuarial principles applied in a manner consistent with GAAP. Each valuation should include a gain/loss analysis that identifies the magnitude of actuarial gains and losses, based on variations between actual and assumed experience for each major assumption. Have a comprehensive audit of the plan's actuarial valuations performed by an independent actuary at least once every five to eight years. The purpose of such a review is to provide an independent critique of the reasonableness of the actuarial methods and assumptions in use and the validity of the resulting actuarially computed contributions and liabilities.

5. Actuarial assumptions should be carefully reviewed by retirement system staff, discussed with outside experts (including investment advisors), and explicitly approved by trustees. Assumptions that should be carefully reviewed include the long-term return on assets, salary growth, inflation, mortality tables, age eligibility, and any anticipated changes in the covered population of plan participants. Have an actuarial experience study performed at least once every five years, and update actuarial assumptions as needed.

6. Prepare and widely distribute a comprehensive annual financial report (CAFR) covering retirement system activity, and distribute summary information to all plan participants. The CAFR should be prepared following the guidance provided by the GFOA for the preparation of a public employee retirement system CAFR.

GFOA recommends the following options to reduce ARC volatility:

1. *Smoothing returns on assets.* Smoothing investment returns over several years recognizes that the system's investment portfolio performance does fluctuate, and only by coincidence will it exactly equal the assumed actuarial rate of return for any given year. This approach reduces the volatility within the calculation of the ARC. A smoothing period is used to balance the need for a longer-term investment horizon with the short-term market fluctuations in the value of plan assets. While the smoothing period is typically about five years, it can be longer, if controls are in place to assure that any variation between the market value and actuarial value of assets does not become too large. A common approach is to establish corridors around market value of assets to stipulate the maximum percentage by which the actuarially smoothed value will be allowed to deviate from the actual market value (pension funds commonly limit the actuarial value of assets to no less than 80 percent of market value and no more than 120 percent). Once a smoothing method is established, the retirement board should adhere to it and avoid making arbitrary changes to the methodology.

2. *Diversifying the investment portfolio to reduce volatility in investment returns.* Diversifying assets across and within asset classes is a fundamental risk management tool that also has the effect of reducing the fluctuations in ARC volatility. Although annual changes in the ARC are affected by numerous factors, the

[4] The use of projected unit credit method (one of six actuarial cost allocation methods permitted by GAAP) typically would *not* be consistent with the goal of level funding.

most significant is usually investment return. It is recommended that retirement systems periodically conduct asset-liability studies for use in reviewing their asset allocation policies. (See GFOA's Best Practice, *Asset Allocation Guidance for Defined Benefit Plans,* 2009).

3. *Managing investment returns long term*. Because the investment return assumption is an average long-term expected rate of return, excess earnings in any one year will likely be offset by lower-than-expected rates of return in a future year. Thus, any program that is derived from an excess-earnings concept is detrimental to the funded status of the plan.

4. *Managing growth in liabilities.* Managing growth in liabilities should also be done long term. All benefit increases for members and beneficiaries should be carefully considered and appropriately approved, and be consistent with all Internal Revenue Service requirements. Whether cost of living adjustments (COLAs), benefit formula enhancements, or post-retirement benefit increases, a clear strategy should be developed that integrates benefit enhancements with the funding policy of the plan. Further, all benefit enhancements and COLAs should be actuarially valued and presented to the Board of Trustees, plan sponsor and appropriate legislative body before they are adopted so the effect of the benefit enhancements on the fund's actuarial accrued liability, funded ratio, and contribution rates is fully understood. This step will help ensure that the goal of fully funding member benefits is achieved, and the financial condition of the retirement system remains sustainable. If a benefit enhancement is being considered, a source of funding should be identified that can support the enhancement over the long term.

5. *Maintaining vigilance against ethical violations and benefit calculation abuse.* While affecting only a small percentage of retirement systems, and often only in select instances in these systems, headline-grabbing abuses of retirement benefit enhancements such as salary spiking can create negative public perceptions that are harmful to all retirement systems and can adversely affect the sustainability of the system. Policies to safeguard against these abuses or undesired outcomes should be considered.

Resources.

- *Financing Retirement System Benefits*, Richard G. Roeder, GFOA, 1987.
- *Pension Accounting and Reporting, Second Edition*, William R. Schwartz, GFOA, 1995.
- *Guidelines for the Preparation of a Public Employee Retirement System Comprehensive Annual Financial Report*, Stephen Gauthier, GFOA, 1996.
- *An Elected Officials Guide to Public Retirement Plans*, Cathie G. Eitelberg, GFOA, 1997.
- *A Guide for Selecting Pension Actuarial Consultants: Writing RFPs and Evaluating Proposals*, Robert Pam, GFOA, 1999.
- *Public Pension Systems – Operational Risks of Defined Benefit and Related Plans and Controls Investment Policy Checklist for Pension Fund Assets*, GFOA, May 2003.
- GFOA Best Practice, *Asset Allocation Guidance for Defined Benefit Plans*, 2009.

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