

Spokane Employees' Retirement System (SERS)
Board Meeting, 11:00 a.m. October 28, 2015
City Hall - Conference Room 5A

AGENDA

Open Session

1. Minutes of the September 30, 2015 Meeting
 - Motion
2. Director's Report
 - a. Retirements
 - Motion
 - b. Withdrawals
 - Motion
 - c. Vesting
 - Information
 - d. Deaths
 - Information
 - e. Expenditure Summary Report – September 2015
 - Motion
 - f. Schedule of Investments – September 2015
 - Information
 - g. Auditor Contract
 - Motion
 - h. Other Business
3. Other Business
4. Investment Consultant Presentations – Starting at Noon

Closed Session

5. Investment Consulting Scoring – Starting at 4:00 PM

Open Session

6. Investment Consulting Selection
 - Motion
7. Next Meeting – Note special date and time

Wednesday, December 2, 2015 at 12:30 p.m.

Jayson Davidson will present the 2015 3rd quarter performance report

**Spokane Employees' Retirement System (SERS)
Board Meeting Minutes
September 30, 2015**

Mike Coster called the regular monthly meeting to order at 1:29 p.m. in the 5th Floor Conference Room at City Hall.

Present: Mike Coster, Mike Cavanaugh, Jim Tieken, Jerry McFarlane, Dean Kiefer, and Brian Brill

Absent: Jon Snyder

Staff: Phill Tencick, Christine Shisler, Donald Brown, and Tim Szambelan

Guests: Joe Cavanaugh, Richard Czernik, Joan Hamilton, Natalie Hilderbrand, and John Bjork

Minutes of the August 26, 2015 Meeting

Jerry McFarlane moved and Mike Cavanaugh seconded the motion to approve the minutes of the August 26, 2015 meeting as presented. The motion passed unanimously.

Jim Tieken arrived at 1:33 p.m.

**Director's Report
Service Retirements**

<i>Name</i>	<i>Age</i>	<i>Retirement Date</i>	<i>Years of Service</i>	<i>Option</i>
Karrie L. Duncan	52	09/12/2015	18.8	E
Douglas C. Lewis	60	09/24/2015	11.9	ST
Ronald E. Triplett	63	10/02/2015	30.7	ST
Edward W. Robinson	67	10/03/2015	10.0	D
June E. Watson	58	10/03/2015	17.8	D
George A. Worn	58	11/03/2015	30.4	E
Janice L. Campbell	66	11/03/2015	9.1	E
Randal L. Peterson	59	11/07/2015	22.7	ST
Susan Creed	65	11/08/2015	18.3	ST
Dale E. Arnold	62	01/01/2016	39.9	E
Dennis C. Fredrickson	63	01/03/2016	30.0	D

Mike Cavanaugh moved and Dean Kiefer seconded the motion to approve the service retirements as amended on the September Retirement Transaction Report. The motion passed unanimously.

Withdrawals for September 2015

<i>Name</i>	<i>Years of Service</i>	<i>Department</i>	<i>Termination Date</i>
Dwight C. Davey	0.71	Solid Waste Disposal	08/01/2015
Jennie E. Anderson	7.38	Library	08/18/2015

Dean Kiefer moved and Jerry McFarlane seconded the motion to approve the requests for withdrawal as presented on the September Retirement Transaction Report. The motion passed unanimously.

Vesting

<i>Name</i>	<i>Department</i>	<i>Years of Service</i>
Lynn M. Schmidt	Sewer Maintenance	3.8 (Portability)

Deaths

<i>Name</i>	<i>Date Retired</i>	<i>Age</i>	<i>Date of Death</i>	<i>Information</i>
Verdelle G. O'Neill	04/05/1980	89	08/18/2015	No Further Benefits
Darwan R. Platz	01/09/1985	93	08/23/2015	No Further Benefits

Vesting and death information provided to the Board for review.

Expenditure Summary Report – August 2015

The Expenditure Summary Report was presented to the Board and discussed.

Mike Cavanaugh moved and Jerry McFarlane seconded the motion to approve the August 2015 Expenditure Summary Report. The motion passed unanimously.

Schedule of Investments – August 2015

The monthly investment report was presented to the Board for review. The estimated market value of the SERS portfolio on August 31, 2015 was \$277.5 million with an estimated rate of return for July of -3.60%.

RFP Updates

Mr. Tencick updated the Board on the status of the two RFPs. The RFP for the Audit Services will have a review committee that currently consists of Phill Tencick, Christine Shisler, Jon Snyder, Dean Kiefer, and Kim Bustos (Accounting Director). Three firms will be conducting on-site presentations October 13 and 14, 2015. Mr. Tencick invited other members of the Board to attend the presentations. Board Members were asked to RSVP so that a special meeting notice could be posted if necessary.

Mr. Tencick also gave an update on the RFP for Investment Consulting Services. A white paper authored by Mr. Tencick was included with the Board packets that outlined

the process thus far, listed the firms who responded to the RFP and the scoring process that was used. The four finalists are scheduled to present at the October Board meeting with the Board awarding the engagement following the presentations.

Mr. Tencick informed the Board about the recent meeting he and Ms. Shisler had with the State Auditor's Office (SAO) regarding SAO's audit of the City's financials. There is currently a draft finding that the City did not comply with GASB 67. The finding is related to the presentation of the LEOFF financials, not SERS, since SERS' financials were audited. The retirement department is working on resolving the finding. Mr. Tencick noted that he wanted to disclose the draft finding since it was related to the retirement department even though it was not related to SERS specifically.

Ms. Shisler updated the Board on the progress of the self-service calculator in PeopleSoft. She thanked Donald Brown for the work done to create job history, so that the calculator could work correctly. Staff has been working to get this component tested and set up. The plan to open it up to all employees shortly after IT has completed the work they are currently doing to update PeopleSoft. The calculator that is currently Excel-based on the SERS website will then be discontinued.

Other Business

There being no other business, the meeting adjourned at 1:56 p.m.

Phillip Tencick, Retirement Director

SERS Retirement Transaction Report

October 2015

Retirements

	Name	Age	Retirement Date	Years of Service	Department	Option
1	Michael R. Jobe	53	10/02/2015	18.3	Adv. Wastewater	ST
2	Steven G. Anderson	66	10/24/2015	11.2	Solid Waste	D
3	Susan R. Arneson	66	12/05/2015	20.7	Library (portability)	E
4	George M. Hoagland	66	01/05/2016	42.0	Library	E
5	Stephen D. Weathermon	65	01/09/2016	35.2	Water	C-5

Retirements YTD 71

Withdrawals

	Name	Years of Service	Department	Termination Date
1	Heather A. Greene-Beloit	3.4	Library	08/11/2015

Vesting

	Name	Department	Years of Service
1	Jeffrey A. Beegle	Solid Waste Management	13.3

Deaths

	Name	Date Retired	Age	Date of Death	Information
1	Marjorie S. Atwood	04/02/1988	92	10/13/2015	No Further Benefits
2	Winnie G. Kreitz	05/04/1993	84	10/13/2015	No Further Benefits

SPOKANE EMPLOYEES' RETIREMENT SYSTEM - 6100
 2015 EXPENDITURE SUMMARY REPORT
SEPTEMBER 30, 2015

	2014 ACTUAL	2015 BUDGET	SEPTEMBER ACTUAL EXPENDITURES	2015 ACTUAL YTD EXPENDITURES	VARIANCE	PERCENTAGE USED
OPERATING EXPENDITURES						
Departmental Salaries	126,543.74	241,313.00	20,534.96	138,868.55	102,444.45	57.5%
Departmental Benefits	45,556.51	79,608.00	6,171.93	45,195.47	34,412.53	56.8%
Reserve for Budget Adjustment	-	20,000.00	-	-	20,000.00	0.0%
Administrative Income	(6,696.46)	(15,000.00)	(6,734.94)	(16,336.89)	1,336.89	
					-	
Postage/Supplies/Other	11,773.73	18,700.00	1,073.24	9,630.80	9,069.20	51.5%
State Audit Charges	10,375.50	10,000.00	1,019.50	4,344.57	5,655.43	43.4%
Contractual Services	142,938.52	200,000.00	130.50	89,478.08	110,521.92	44.7%
Travel	2,559.37	15,000.00	-	257.50	14,742.50	1.7%
Registration/Schooling	400.00	10,000.00	300.00	700.00	9,300.00	7.0%
Other Dues/Subscriptions/Membership	1,013.20	2,500.00	-	538.20	1,961.80	21.5%
Other Miscellaneous Charges	2,837.20	4,370.00	57.00	4,286.84	83.16	98.1%
Depreciation & Amortization	18,525.92	-	-	-	-	
TOTAL OPERATING EXPENDITURES	355,827.23	586,491.00	22,552.19	276,963.12	309,527.88	47.2%
INTERFUND EXPENDITURES						
Interfund - Accounting Central Services	3,150.20	3,052.00	-	2,086.35	965.65	68.4%
Interfund - IT Phones	1,935.21	1,512.00	127.77	1,028.72	483.28	68.0%
Interfund - IT Communications Replacement	288.96	241.00	20.08	160.64	80.36	66.7%
Interfund - Motor Pool	-	500.00	-	-	500.00	0.0%
Interfund - Risk Management	962.00	1,121.00	-	840.75	280.25	75.0%
Interfund - Unemployment	500.00	500.00	-	375.00	125.00	75.0%
Interfund - Worker's Compensation	86.00	78.00	-	58.50	19.50	75.0%
Interfund - IT	16,422.69	13,892.00	1,157.67	9,261.36	4,630.64	66.7%
Interfund - IT Replacement	4,209.00	3,584.00	298.67	2,389.36	1,194.64	66.7%
Interfund - Reprographics	2,346.95	2,000.00	155.06	2,018.83	(18.83)	100.9%
Interfund - Warrant Costs	986.00	1,500.00	-	-	1,500.00	0.0%
TOTAL INTERFUND EXPENDITURES	30,887.01	27,980.00	1,759.25	18,219.51	9,760.49	65.1%
TOTAL ADMINISTRATIVE EXPENDITURES	386,714.24	614,471.00	24,311.44	295,182.63	319,288.37	48.0%

SPOKANE EMPLOYEES' RETIREMENT SYSTEM - 6100
 2015 EXPENDITURE SUMMARY REPORT
SEPTEMBER 30, 2015

	2014 ACTUAL	2015 BUDGET	SEPTEMBER ACTUAL EXPENDITURES	2015 ACTUAL YTD EXPENDITURES	VARIANCE	PERCENTAGE USED
PENSIONS						
Pensions-Annuity Benefit Payments	125,328.48	160,000.00	10,444.04	93,996.36	66,003.64	58.7%
Pensions-Disability Payments	20,659,575.08	21,800,000.00	1,875,797.79	16,498,229.43	5,301,770.57	75.7%
Pensions-Survivor Annuity Benefits Payments	1,473,938.36	1,500,000.00	139,305.73	1,220,454.88	279,545.12	81.4%
TOTAL PENSIONS	<u>22,258,841.92</u>	<u>23,460,000.00</u>	<u>2,025,547.56</u>	<u>17,812,680.67</u>	<u>5,647,319.33</u>	
Refunds	625,184.41	1,200,000.00	25,233.39	629,456.51	570,543.49	52.5%
TOTAL EXPENSES	<u><u>23,270,740.57</u></u>	<u><u>25,274,471.00</u></u>	<u><u>2,075,092.39</u></u>	<u><u>18,737,319.81</u></u>	<u><u>6,537,151.19</u></u>	74.1%
INVESTMENT EXPENSE*						
Advisory Technical Service	373,109.86	500,000.00	8,826.68	269,049.65	230,950.35	53.8%

* investment expenses are netted against investment income in the statement of changes of plan net assets to arrive at a net investment income amount.

SERS Schedule of Cash and Investments
September 30, 2015

10/21/2015	Type	Market	Actual Allocation	Approved Allocation
Cash and Short-term Investments:				
Cash Held by Treasurer	Cash	\$ 114,873		
US Bank	Short-term Inv	<u>1,886,471</u>		
Total Cash and Short-term Investments		2,001,344	0.7%	1.0%
Fixed Income:				
Vanguard Short-Term	Total Return - Mutual Fund	9,469,270		
Hotchkis & Wiley	High Yield - Mutual Fund	10,367,770		
PIMCO Global	International- Mutual Fund	<u>11,319,432</u>		
Total Fixed Income		31,156,472	11.6%	15.0%
U.S. Equities:				
Hotchkis & Wiley	LC Value - Mutual Fund	14,237,912		
Delaware	LC Growth - Mutual Fund	14,386,663		
MFS Heritage	LC Core	15,425,700		
Vanguard S&P 500 Index	LC Core - Mutual Fund	7,463,041		
Sterling	MC Value	7,680,727		
Vanguard MC Growth	MC Growth - Mutual Fund	7,480,375		
Vanguard MC Index	MC Core - Mutual Fund	4,918,458		
Champlain	SC Core	4,602,081		
Phocas	SC Value - Mutual Fund	4,162,860		
Bridgecity	SC Growth	4,469,065		
Vanguard SC Index	SC Core - Mutual Fund	<u>2,219,951</u>		
Total U.S. Equities		87,046,833	32.3%	
International:				
Berens	Ltd Partnership	9,496,102		
Vanguard International	LC Index - Mutual Fund	858,462		
Euro Pacific	LC Blend - Mutual Fund	11,564,381		
Artisan	SMID Value - Mutual Fund	13,938,111		
Trivalent	SC Value - Mutual Fund	<u>8,163,100</u>		
Total International		44,020,156	16.3%	
Total Global Equities			48.6%	50.0%
Alt Absolute Return Hedge:				
Altairis	LLC	5,807,785		
American Beacon	Mutual Fund	9,665,516		
Castine Capital I	Ltd Partnership	5,900,458		
Post Limited Term High Yield	Ltd Partnership	5,549,822		
Rimrock Low Volatility	Ltd Partnership	<u>9,037,506</u>		
Total Alt Absolute Return Hedge		35,961,087	13.3%	10.0%
Alt Long-Short Growth & Special Opps:				
Weatherlow Offshore	Ltd Partnership	14,710,646		
Caduceus (OrbiMed)	Ltd Partnership	9,593,674		
Royalty Opportunities I	Ltd Partnership	4,677,672		
Royalty Opportunities II	Ltd Partnership	298,190		
Troob	Ltd Partnership	3,948,903		
Beach Point	Ltd Partnership	<u>7,765,773</u>		
Total Alt Long-Short Growth & Special Opps		40,994,858	15.2%	14.0%
Real Estate:				
Legacy Partners Realty Fund III	Ltd Partnership	1,323,469		
Metropolitan Real Estate Partners	Ltd Partnership	917,193		
Morrison Street Fund IV	LLC	2,999,204		
Morrison Street Fund V	LLC	4,769,153		
Principal (REITs)	REITs	<u>8,701,276</u>		
Total Real Estate		18,710,295	6.9%	6.0%
PIMCO Commodites PLUS	Commodities - Mutual Fund	9,581,899	3.6%	4.0%
Total Cash and Investments		<u>\$ 269,472,944</u>	<u>100.0%</u>	<u>100.0%</u>
		withdrawals		
as of August 31, 2015		\$ 277,547,310		
		estimated rate of return		-2.60%

Audit RFP Scoring Committee Recommendation

Audit RFP Scoring Committee: Kim Bustos, Dean Kiefer, Christine Shisler, Jon Snyder, Phillip Tencick

The scoring committee reviewed all of the RFP submissions provided by the firms. Ms. Bustos, Ms. Shisler, and Mr. Tencick attended the final presentations for the three firms. The committee developed a single consensus score based on the input provided by all members. Each firm was scored from 1-5 based on their relative strength in each category. The four scoring categories and their weights:

- Fees 30% – Fees included the base audit fee and out of pocket expenses. A five year projection was used for scoring that included any price increases over the life of the contract.
- Firm Resources 10% – The resources represents the support available outside of the assigned audit team. These secondary resources are not widely used so they have the lowest weighting.
- Skill of Assigned Personnel 30% – The qualifications, composition, and expected turnover of the proposed audit team.
- Audit Process 30% – The process used to test the financial statements and the processes used to put the statements together as well as the sample Provided By Client (PBC) listing submitted.

Below are the committee's scores for each firm:

Clifton Larson Allen

- Fees (3) – Second highest audit fee, but highest total cost due to out of pocket expenses required to pay for team to travel from Seattle. Estimated 5-yr total: \$243,250
- Firm Resources (5) - Dedicated pension practice with associates specializing in benefit plans; Largest pension practice
- Skill of Assigned Personnel (3) – Sr. Associate lead on-site; References felt lead was “hit and miss” and they had to train up the team; During presentation, implied transition of partner review to local director who is a relationship manager and not part of dedicated pension practice
- Audit Process (5) – Best process which is based on best practices from overall pension practice
- Other – Rigid audit process is expected to have the highest transition costs, with things not running smoothly until third year
- **Total (3.8)** – The strongest audit process and firm resources for pension audits were offset by the highest expected cost and the weakest proposed team.

Eide Bailly

- Fees (5) – The lowest proposed audit fees, with the submission specifically noting that the fees included all out of pocket expenses despite partner in Boise. Estimated 5-yr total: \$215,100
- Firm Resources (3) – Least involved with outside governing bodies (GASB, GFOA). Approached GASB rule implementation on a client by client basis versus providing firmwide guidance and training
- Skill of Assigned Personnel (4) – Senior members of team were experienced with plan audits (PERSI, South Dakota), but on-site team had limited experience and was recently acquired by Eide Bailly
- Audit Process (3) – Client specific process based on previous auditor's PBC list; smallest practice
- Other – References noted weakness in GASB 67 implementations
- **Total (3.9)** – The lowest cost option, but it is unclear how they will improve the current audit process with a weaker on-site team and fewer firm resources

Moss Adams

- Fees (4) – The highest proposed audit fee, but by having a local team the out of pocket expenses are lower. Estimated 5-yr total: \$227,500
- Firm Resources (4) – Good relationship with GASB and GFOA, including partner rotations with each organization; Proposal includes webinars and conferences on emerging issues
- Skill of Assigned Personnel (5) – Top to bottom, the most experienced team with plan audits
- Audit Process (4) – Good; not as strong as Clifton Larson Allen, but better than Eide Bailly
- Other – During the last RFP, Moss Adams fees were negotiated down
- **Total (4.3)** – The best proposed team, which is who ultimately conducts the audit. In the middle of the other two firms in all other categories.

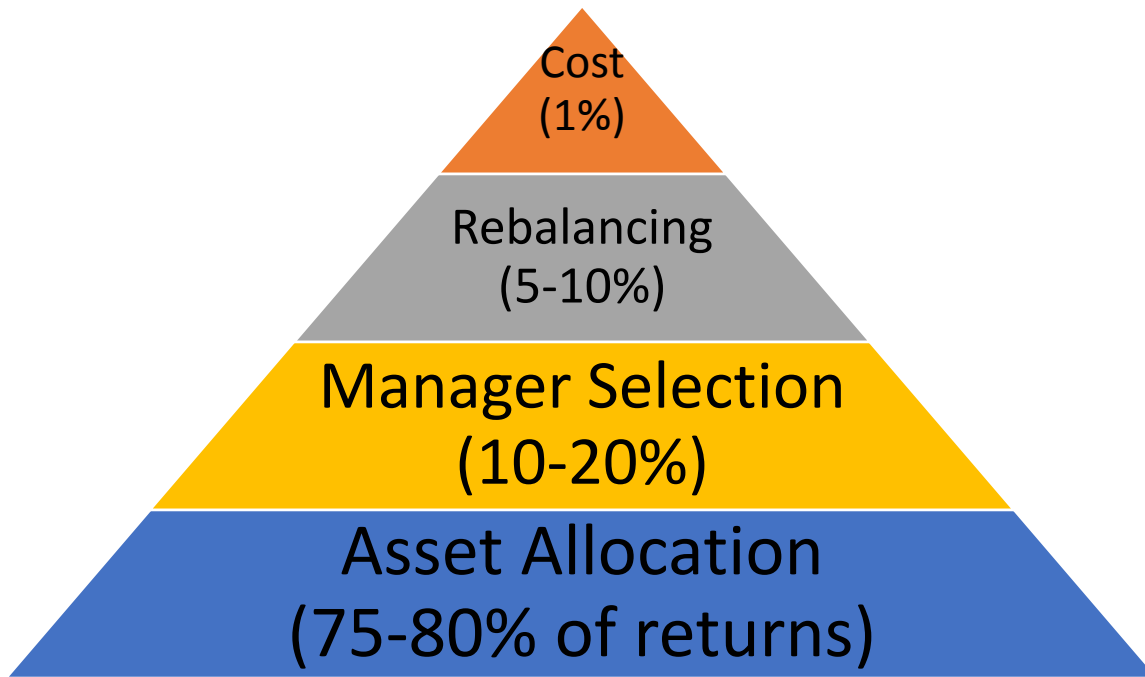
Recommendation

There is no compelling reason to change audit firms. Moss Adam meets all of our needs and we have been satisfied with their performance. Clifton Larson Allen’s potential for an improved audit process is more than offset by the risks posed by a weaker team and transition costs of implementing the new process. Eide Bailly’s proposal was the lowest cost, but the on-site team would be a downgrade and they were unable to demonstrate if they could improve the current audit process. Overall, there is insufficient reward to warrant the risks of hiring a new audit firm.

Generally, the most compelling argument to change auditors is to have the books reviewed with a “fresh set of eyes”. The slate of upcoming GASB pronouncements during the next five-years provides “a fresh set of eyes” with reporting requirements changing so frequently, even with the retaining Moss Adams. Additionally, Moss Adams is willing to rotate partners at the Board’s discretion to provide a new perspective on the financial statements.

The committee recommends selecting Moss Adams for a five-year contract.

Investment Consultant RFP Scoring



A plan's asset allocation decision is the biggest contributor to the long-term performance of the plan. The impact of the asset allocation decision is 4-5x as great as any other investment decision that is made. Since the last asset allocation, the relative impact for SERS is shown below:

Factor	Return	Impact
70/30 Portfolio	4.66%	
Asset Allocation	5.51%	85bp
Selection/Rebalancing	5.60%	9bp
Consultant Fees	(0.05%)	1bp

In addition to having the greatest impact on returns, the asset allocation process is the one thing over which the investment consultant has the greatest authority. Therefore, the selection of the investment consultant is the single most important decision the Board makes. Minor variances in the target allocation can result in significant impacts to the long-term health of the plan and no two consultants will recommend the same allocation.

For example, a 5% change in the weighting of stocks vs. bonds would have resulted in a 16bp increase in annual returns. However, volatility would have been much greater and funding ratios would have been even lower through the end of 2013. How much different would the plan redesign have looked then?

As a result, the investment consultant RFP scoring should reflect the impact that the asset allocation process has on the long-term health of the plan, especially compared to other factors.

	Weight
Fees	15%
Firm Resources	20%
Skill of Assigned Personnel	20%
Investment Consulting Processes	35%
Potential Conflicts of Interest	10%
Total	100%

Asset Allocation Primer

Asset Allocation: A mathematical model that attempts to minimize risk for a targeted level of return. The model’s output is the target asset class weightings. The output is influenced by the assumptions, constraints, and methodology used.

Output: Asset class weightings

The allocation study models all of the different asset class weightings to determine the combined weighting that will minimize risk for the targeted rate of return.

Asset classes can be defined broadly (e.g. stocks vs. bonds) or narrowly (e.g. large cap US stocks, mid cap US stocks, etc. vs. government bonds, corporate bonds, long duration bonds, etc.). The more narrowly defined the asset classes, the greater the likely forecast error (harder to estimate); the more broadly defined the asset classes, the greater the likely implementation error (harder to meet target returns).

Assumptions: Expected Returns, Expected Risk, Correlations

- Expected Returns – The forecast annualized investment return for each asset class
- Expected Risk – The volatility of the expected returns (e.g. how wide the range of outcomes is likely to be, or more simply, how likely you are to lose money)
- Correlations – How the returns of one asset class are related to all other asset classes. This measures how much diversification each asset class provides in the portfolio

Notes:

- 1) Each firm develops their own estimates for each of the three assumptions. There is no generally accepted standard. Small changes in the assumptions may result in significant impacts on the model’s optimal weighting for each asset class.
- 2) The assumptions are *forward looking*. The allocation model is trying to determine the portfolio that will be optimal *in the future*. Some firms do extensive work trying to build forecasts from fundamental economic and market factors, while others use historic data and assume that future outcomes will match past performance. Without back testing a firm’s assumptions versus actual market results, there is no definitive method to say which practice is better. Only one firm, Wilshire, provided back testing for their historic assumptions.

Constraints: Manual limits built into the model to try and eliminate extreme outcomes.

Asset allocation models will often produce results that conflict with common sense. This is because the model does not fully capture the complexity of the real world. The more constraints required, the greater the limitations of the model. Constraints can also be thought of as the “fudge factor”

Methodologies:

		Liabilities Used?	
		No	Yes
Risk Factors	Single Risk	Mean Variance Optimization (MVO)	Asset Liability Model (ALM)
	Multi Risk	Multi Factor MVO	Multi Factor ALM

- 1) **Mean Variance Optimization (MVO)** – Maximize asset returns using price volatility as the *only* measure of risk.

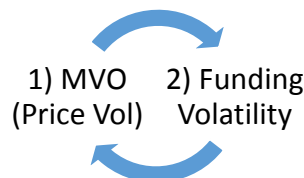
MVO models select the investments that have the highest returns with the lowest price volatility (e.g. largest Sharpe Ratio). This method favors illiquid investments since they don't have as much price volatility as publicly traded investments, even though illiquid investments have many other risks. This preference for high Sharpe investments requires significant constraints to make the model produce a workable solution.

- 2) **Multi Factor MVO** – Maximizes asset returns using multiple risk factors

Multi Factor MVO models incorporate multiple risk factors into a single measure of risk and then seeks the asset allocation that meets the target return while minimizing the consolidated risk factor. This model does not take into account the plan's liabilities and may come up with an allocation that does not minimize funding volatility (e.g. creates a mismatch between the assets and liabilities).

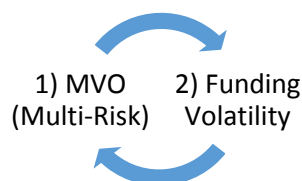
- 3) **Asset Liability Modeling** – Minimize funding volatility using price factor as **only** measure of risk

Asset allocation models can only solve for one risk factor at a time. To try and minimize multiple measures of risk at the same time, the risk factors must be consolidated into a single factor (see #2) or by solving for one risk factor (price volatility) and then seeing how small changes impact the second risk factor (funding volatility). The model is rerun until both measures of risk are at the lowest combined level that can be found.

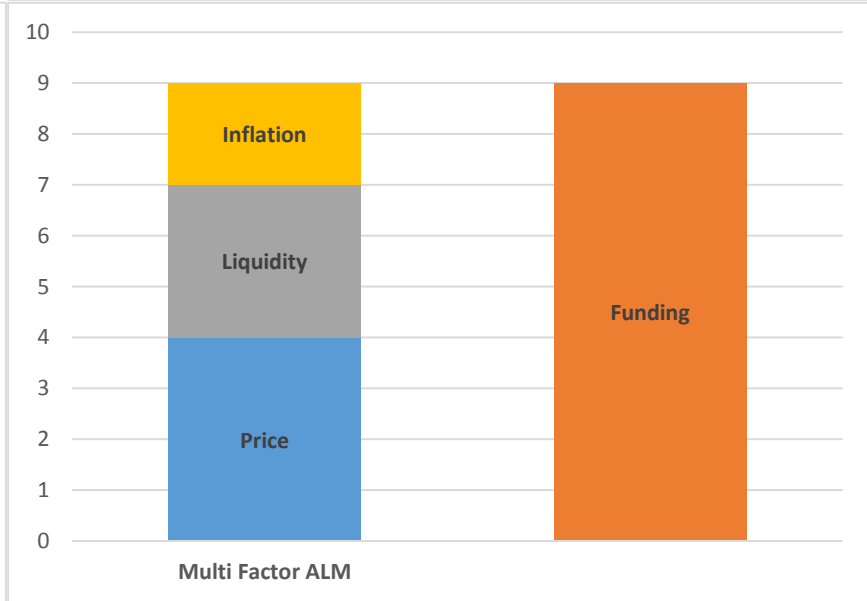
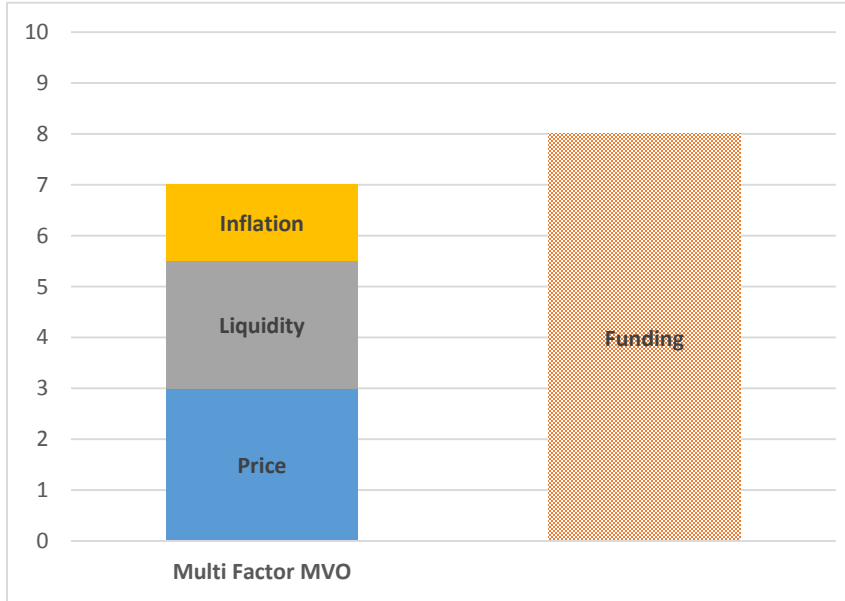
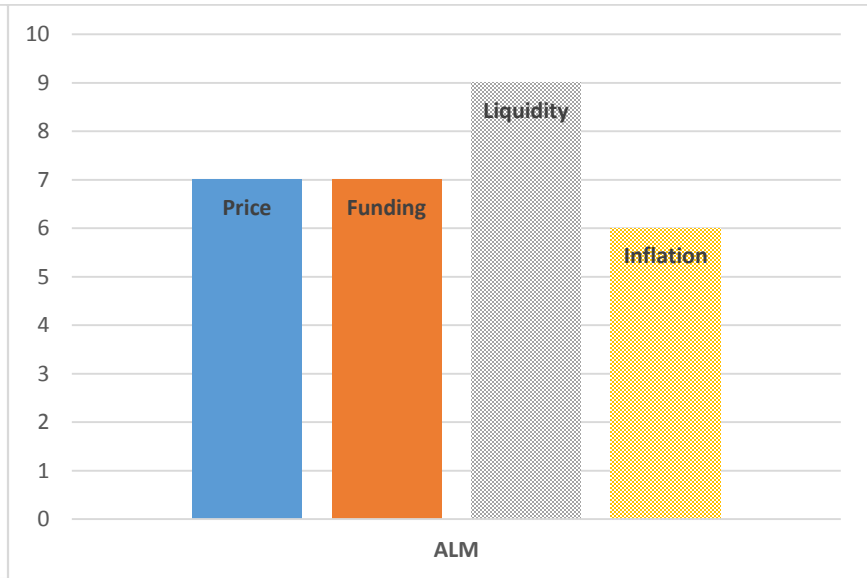
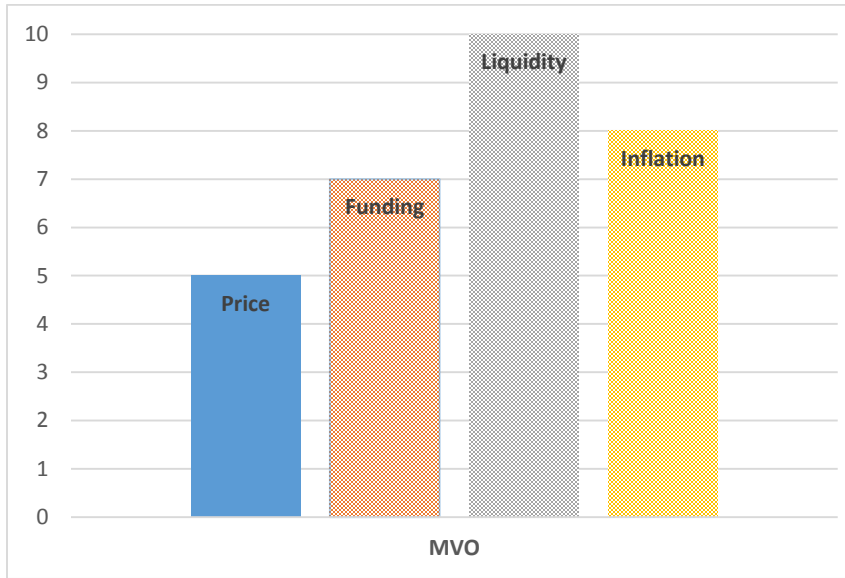


- 4) **Multi Factor ALM** – Minimize funding volatility using multiple risk factors

Multi Factor ALM models incorporate multiple risk factors into a single measure of risk and then seeks the asset allocation that meets the target return while minimizing the consolidated risk factor. The model then measures how small changes impact the funding volatility of the plan and adjusts weightings until both the multi factor risk measure and the funding volatility are minimized for the targeted rate of return. This method is the most comprehensive means of modeling portfolio risk and how those risks will impact the ability of the plan to meet its liabilities.



Risk Minimization Methods



Callan Associates

Firm Resources	Skill of Assigned Personnel	Investment Consulting Processes	Potential Conflicts of Interest
<ul style="list-style-type: none"> • 11 public plans of similar size • Dedicated research team • Dedicated reporting team • Peer review process to make sure clients receive consistent recommendations across the firm <ul style="list-style-type: none"> • Also state that they provide customized solutions ...inconsistent • Don't provide consulting on individual hedge or private equity funds. Only recommend fund of funds to clients 	<ul style="list-style-type: none"> • George Weightman, CFA (Lead) <ul style="list-style-type: none"> - Based in Denver office - 11 Clients, \$6.4B AUA - 9 years at Callan; shareholder, serves on DC committee - BA in Psychology from Middlebury • Bill Howard, CFA (Backup) <ul style="list-style-type: none"> - Based in Denver office - 12 Clients, \$5.5B AUA - 14 years at Callan; investment manager experience prior to joining; member manager selection committee - MBA from Denver, BA from Vanderbilt 	<p><u>Manager Selection</u></p> <ul style="list-style-type: none"> • Start from scratch for each search, unique to each client • Use proprietary database based on surveys completed by managers (free to enroll) <ol style="list-style-type: none"> 1) Work with client to determine "ideal" manager characteristics 2) Quant screen on risk/return over full market cycle 3) Qual screen on People, Philosophy, Process 4) Manager Search Committee – meets weekly, 14 consultants 5) Semi-finalist review, including committee approved report 6) On-site Final Client presentations <p><u>Asset Allocation</u></p> <ul style="list-style-type: none"> • MVO, with Monte Carlo – simulation vs. treasury curve w/ equities as random • Asset-Liability Model • Risk as volatility • Model to minimize (contributions + unfunded liability) • Conducted by 6 person team • Assumptions: updated annually <ul style="list-style-type: none"> - Economic outlook - Asset performance and correl. - Risk/return at broad asset class - Test/tune to look like mkt port. <p><u>Performance Measurement</u></p> <ul style="list-style-type: none"> • Quarterly, with monthly flash avail • Qtr + 6 weeks availability • Active recon b/t Mgr, custody, DB 	<ul style="list-style-type: none"> + Employee owned - 4 lines of business, including discretionary consulting and revenues from investment managers <ul style="list-style-type: none"> • Compensation tied to performance within business line only • Full disclosure of clients in each revenue stream • TAG clients not recommended to investment consulting clients + Full disclosure of legal proceedings (vs. material only), with all cases dismissed

Hyas Group

Firm Resources	Skill of Assigned Personnel	Investment Consulting Processes	Potential Conflicts of Interest
<ul style="list-style-type: none"> • 12 total staff – 4 Sr. Consultants, 6 investment professionals, and 2 support staff...4 CFA's • High client:consultant ratio...spread thinner than most others 	<ul style="list-style-type: none"> • Jayson Davidson, CFA (Lead) <ul style="list-style-type: none"> - 19 years industry; Arnerich, Howard Johnson, ICMA-RC - BS UC Berkeley • Scott Faris JD, CFA (Back Up) <ul style="list-style-type: none"> - 25 years industry; Arnerich, Towers - BS MT State, JD William Mitchell • Brian Loescher, CFA (CIO) <ul style="list-style-type: none"> - 22 years industry; Arnerich, RV Kuhn - BS U of NE • Michelle Ruppelt (CCO) <ul style="list-style-type: none"> - 25 years industry; Arnerich, Others (unlisted) - No Degree 	<p><u>Manager Selection</u></p> <ul style="list-style-type: none"> • Quant screen: vs. benchmark, alpha, 3 yr period, up/down, volatility • Qualitative review, in person or call <ul style="list-style-type: none"> - Philosophy, process, team - For Alts, risk mgmt., pricing, ops • Believe in manager life cycle, prefer early adoption of managers <ul style="list-style-type: none"> - Unable to demonstrate track record over market cycle at hire • Full market cycle under-performance for watch list <ul style="list-style-type: none"> - Inconsistent with hiring process - Don't follow style drift <p><u>Asset Allocation</u></p> <ul style="list-style-type: none"> • Asset only MVO • Building block premia for returns, with historic correlations and vol • Volatility only measure of risk, tweak class constraints to factor perceived risks (e.g. liquidity) • Confidence interval as stress test • Rebalance at qtr with bands <p><u>Performance Measurement</u></p> <ul style="list-style-type: none"> • Quarterly reporting • Available Q-end plus 30 days 	<ul style="list-style-type: none"> + Independently owned + Consulting only line of business - Compliance officer reports to head of research, not independent

Pension Consulting Alliance

Firm Resources	Skill of Assigned Personnel	Investment Consulting Processes	Potential Conflicts of Interest
<ul style="list-style-type: none"> • Strong modeling/neutralizing risk • Public/Union plans only – focused on specific market, problem set • Purpose Driven Investment Policy • Fiduciary education included • Challenge – effective execution in alternatives 	<ul style="list-style-type: none"> • David Sancewich (Lead), Portland <ul style="list-style-type: none"> - Principal - 11 years at firm, 15 years industry - BA, MBA from WSU • Colin Bebee (Co-Lead) <ul style="list-style-type: none"> - Vice President - 5 years at PCA, 1 year in position - BA Linfield • Lowest client:consultant ratio, but descriptions indicate it may be due to splitting duties between research and consulting 	<p><u>Manager Selection</u></p> <ul style="list-style-type: none"> • From scratch, by client with custom scoring for each search • RFI/RFP for search • Qualitative Eval: <ul style="list-style-type: none"> - Organizational Stability - Depth/Experience of team - Strategy - Client service, client base - Conflicts • Quant Eval: <ul style="list-style-type: none"> - Risk/return, focus on risk control - Fees • Recommend site visits for sponsor • For non-RFP, review answers on file, plus quant screens if no responses available <p><u>Asset Allocation</u></p> <ul style="list-style-type: none"> • ALM with proprietary risk factor ranking model • Both risk and return present at meeting • Simulation against variety or criteria and scores based on meeting risk ranking criteria • Review annually with basic study and full rework at 3 years • Assumptions from 4 person team • Rebalance with vol based bands <p><u>Performance Measurement</u></p> <ul style="list-style-type: none"> • Quarterly, 45 days after end <p>Interesting asset allocation approach</p>	<p>+ Independent, employee owned</p> <p>+ Non-discretionary consulting only</p> <ul style="list-style-type: none"> - Single owner, seeking to create liquidity, manage exit <p>Risk surrounding change of control and what that will look like</p>

Wilshire Associates

Firm Resources	Skill of Assigned Personnel	Investment Consulting Processes	Potential Conflicts of Interest
<ul style="list-style-type: none"> • Dedicated teams for each major consulting component <ul style="list-style-type: none"> - Market Research - Asset Allocation - Performance Measurement - Manager research - Private Markets - Risk (not included in proposal) • Risk Budgeting and research as competitive advantages • Strong public plan practice, including lead consultant for CALPERS <p>Strongest firm resources</p>	<ul style="list-style-type: none"> • Rob Appling CFA, CAIA (Lead), Denver <ul style="list-style-type: none"> - Managing Director - <1 year at position - 7 yrs at Mercer/Hammond, Dir of Investments, Sr. Consultant - BS TX A&M, MBA UMSTL - Unclear if working on any engagements now • Andrew Junkin, CFA CAIA (Back Up) <ul style="list-style-type: none"> - Managing Director - CIO Magazine #2 most influential consultant - 10 years at firm, 21 years industry - BA OKC Univ.; MBA Wharton • Tom Toth, CFA (Back Up) <ul style="list-style-type: none"> - Managing Director - 11 years at firm, 14 years industry - BA UCSD, MBA USC • 2 additional support resources in Denver office (VP and Sr. Associate) <p>Strong team, but lead is new to Wilshire</p>	<p><u>Manager Selection</u></p> <ul style="list-style-type: none"> • Dedicated Manager Research Team • Evaluate using internal DB (40k+ products, more than most subs.) • Qualitative Evaluation <ul style="list-style-type: none"> - Organization (20%) - Information (20%) - Portfolio Construction (20%) - Implementation (10%) - Manager Attribution (10%) • Quant: Risk/Return to find skill • Data Collection (Surveys) • Manager Meetings (1500+/yr) and weekly research updates • Asset Class Committee oversight • Search: 1) Quant screen 2) Research book 3) Interview 4) Selection 5) Fees/guidelines • Clear watch/terminate standards <p><u>Asset Allocation</u></p> <ul style="list-style-type: none"> • Dedicated team for model, assump. • ALM using Cost/Risk Optimization • Annual assumption setting (comprehensive w/ back test) • Liability based with multiple risk factors, incl. client specific • Monte Carlo and scenario testing • Rebalance as % of allocation % <p><u>Performance Measurement</u></p> <ul style="list-style-type: none"> • Quarterly, with monthly flash • Available Q-end plus 4-6 weeks • Recon: custody, mgr, 3rd party <p>Strong, concise processes</p>	<ul style="list-style-type: none"> + Employee owned - Cross-sell options: Risk consulting, Compass, Alts portfolio, analytics - Money Management team that receives commissions from fund managers for Alts, discretionary - Managers subscribe to Compass and Analytics - Advisory not included in strategic growth initiatives → potential for less relative investment <p>Most potential conflict of passable firms</p>