

Date: May 15, 2024
To: Board of Retirement
From: Doris L. Rentschler, Executive Director
F. Robert Reveles, Retirement Financial Investment Officer
Subject: Investment Process Discussion and Staff Response to Portfolio Recommendations

Recommended Action:

Today's discussion is to determine if the Board has interest in further review of any of the recommendations. If desired, the Board can direct to staff to return item(s) at a future meeting.

Fiscal and Financial Impacts:

There are no financial impacts as a result of receiving this report.

Strategic Plan Importance and Risk Assessment:

While not related to a specific action item, the investment allocation process relates to the Board's strategic goal to protect the Plan's long-term financial health.

Inherent in MCERA's asset allocation is the risk that movements in the financial/capital markets affect the value of MCERA's financial assets. Investment Manager selection risk includes cost, performance, or misconduct that harms the fund. The risk associated with asset allocation is greater than risk associated with the selection of investment managers.

MCERA's Asset Allocation Process:

MCERA's formal asset-liability study incorporates MCERA's obligations, objectives, constraints, and financial condition; historical and expected long-term capital market assumptions; simulates possible investment outcomes over an investment horizon; and evaluates the risk return characteristics of the possible allocation strategies. The triennial asset allocation is designed with the Plan's investment objectives, constraints, and overall financial condition in mind.

The Asset/Liability Study is an analysis of projections of the system's assets and liabilities and examines how well alternative investment strategies (different asset allocations) address the objectives served by the fund (the liabilities). The analysis combines the Plan's key financial drivers – the investment policy, funding policy, and benefit policy. An asset liability study helps establish a cohesive risk-management framework and forms the basis of the investment strategy.

MCERA's Investment Policy provides the framework for the management of MCERA's assets. The purpose is to assist the Board in effectively establishing, monitoring, evaluating, and revising the investment program. By working with qualified consultants and establishing and following a well-defined process, the Board fulfills a primary tenet of its fiduciary duty.

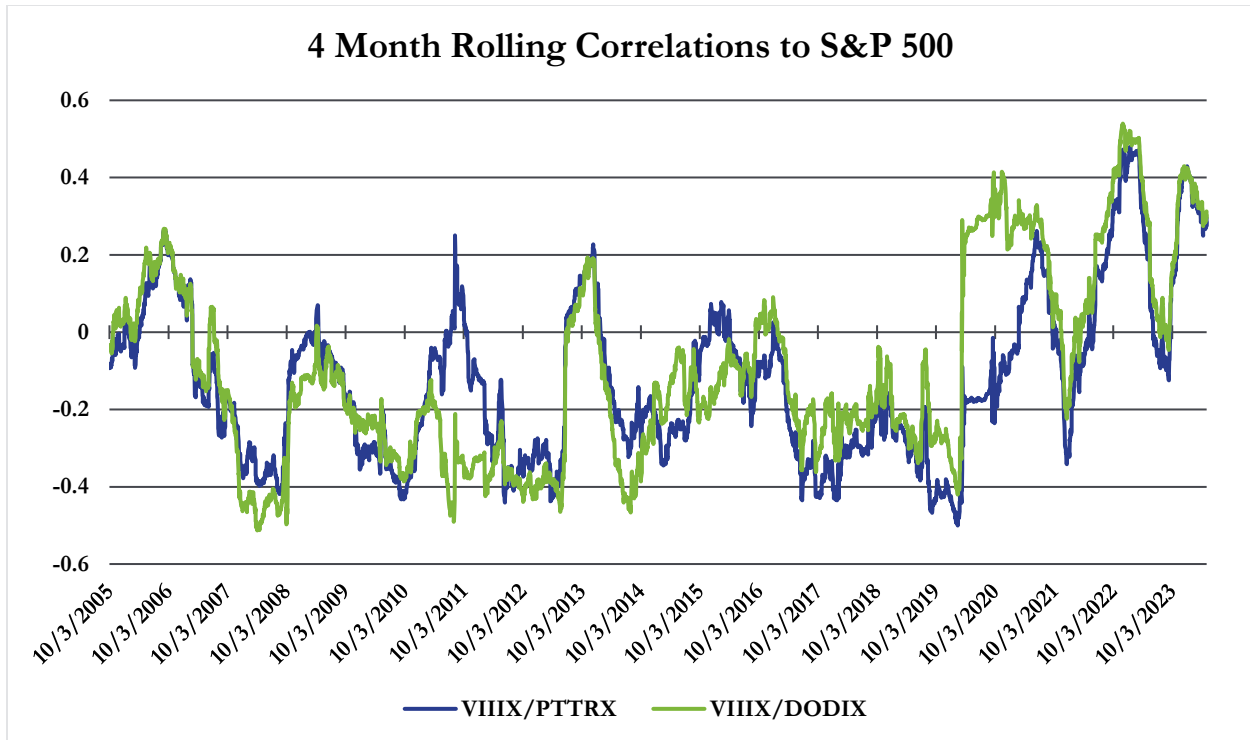
Asset Allocation and Diversification:

Asset allocation is key in terms of explaining the variation of portfolio returns. Between 80% and 90% of an investor's experience is tied to the chosen asset allocation rather than specific investments. Portfolios benefit from investing across different asset classes – and through diversification within asset classes. Diversification is important both in terms of the asset class split – stocks and bonds for example – as well as within each asset class through exposure to different investment styles and market segments. Diversification is built upon an understanding of how asset classes typically react to different economic events and how changes in asset values relate to one another (correlation).

Staff Responses to Trustee Gjerde's Memo:

Recommendation #1 contains two suggestions regarding indexing MCERA's equity allocations. First, is to index the entire domestic equity allocation. Staff do not recommend indexing the entirety of the US domestic equity composite. 70% of MCERA's US equity is already in an S&P 500 index fund. Our small and mid-cap managers provide sector and factor diversification, as well as the opportunity for growth and income beyond that available in the S&P 500 or the broader Russell 3000. As discussed at the March 2024 meeting, the US equity composite provides net-of-fee value to the MCERA portfolio. Second, is to index the international equity allocation. As we continue to move forward with our portfolio structure review over the next few months, we can review the merits or shortcomings of indexing the international portfolio if the board so directs.

Recommendation #2 is to consolidate the fixed income managers. Staff do not recommend decreasing the number of fixed income managers. Though both managers hold primarily investment grade securities, their sector exposure is complementary, i.e., the different sector exposures react differently under different market conditions. One manager has a sector focus on corporate bonds and agency mortgage-backed securities (MBS), while the other utilizes swaps and short duration derivatives focusing on securitized credits (agency and non-agency MBS, Commercial MBS, Asset Backed Securities, Collateralized Debt Obligations, and Collateralized Loan Obligations). Concentrating in one fund reduces our fixed income diversification. Note the two periods of correlation divergence from the S&P 500 during times of market stress in the chart below. (Years 2011 and 2020) We plan to review the fixed income portfolio structure later in the year.



Recommendation #3 suggests eliminating a private real estate fund for a healthcare sector fund. Staff do not recommend moving funds from our real estate managers into a sector equity fund. Directly owned real estate funds, as an asset class, have different risk/return characteristics than equities, one of which is lower standard deviations. Replacing this type of investment with a sector equity fund will increase the standard deviation of the total portfolio. The healthcare index fund has a greater standard deviation than **private** real estate. The recommendation uses a publicly traded REIT (equity) fund with a greater standard deviation and significantly higher correlation to the US large cap market. The illustration lacks a reasonable proxy for our Infrastructure exposure and uses a publicly traded REIT as a substitute for MCERA's private real estate. Public REITs are not suitable surrogates for private real estate to illustrate the impact of changes to the portfolio. This comparison using a public REIT overestimates the portfolio standard deviation and leads to an erroneous conclusion regarding a reduction in volatility.

From a sector diversification perspective MCERA's managers are already exposed to the healthcare industry. In fact, healthcare is the third largest sector in the S&P 500. Adding a healthcare sector equity fund would not produce additional diversification but would in fact produce concentration.

In addition to concentration concerns, there are multiple provision of the Inflation Reduction Act that will greatly impact the healthcare industry, and pharmaceutical companies in particular, such as Medicare drug price negotiations, Medicaid drug manufacturers paying rebates, capping out-of-pocket spending, limit cost sharing for insulin, among other provisions and a new rule in California that limits the ability of doctors, hospitals, and health insurance companies to raise prices in excess of

3.0% per year. These types of regulatory changes, and any others like them, call for some level of circumspection when considering future investment strategies.

Recommendation #4 is to change the asset allocation from the Asset-Liability Study Mix 4 (selected in April 2023) to Mix 5. Staff do not have a recommendation as to a specific asset mix. Asset allocation is the purview of the board. Trustees may remember, in February of 2023, as a response to Callan's recent asset/liability study, the board, with a split vote, adopted Mix #3, a slightly more conservative asset allocation than was in use. Then in April of 2023 at the request of Trustee Gjerde, the Board reconsidered the asset allocation and unanimously passed a motion to return to the slightly more aggressive Mix #4.

All asset mixes proposed by Callan are expected to meet MCERA's future funding needs. Staff would encourage the board to select an asset mix and reassess the mix if and when exigent circumstances exist, or upon our scheduled review. Absent any significant changes in circumstances since the last asset/liability study, there is nothing to warrant reviewing this earlier than normally scheduled.

Recommendation #5 is to schedule a joint BOR/BOS meeting. Staff do not have a recommendation regarding a meeting with plan sponsor(s).

Summary

MCERA should strive for solid long-term investment performance to support the plan.

That might include choosing to take on more investment risk for the potential return. However, such a decision must come with the recognition of the impact on the unfunded liability and contribution rates if there is a market disruption that significantly influences equity returns. The Board should fully understand the risks associated with an asset allocation change.

The suggested portfolio has a higher US large cap focus because that has been the best performing public market segment for the last decade. But that is not to say that US large cap, or the entire US market, will continue to be the best performing public market segment, as illustrated by the historic returns shown in the attached Periodic Table of Investment Returns.

Investment risk has many components. Focusing solely on any one attribute as the measure for risk, whether standard deviation, or beta, or drawdown, oversimplifies the issue and can lead to taking unintended risk. Utilizing an asset allocation based on a study of MCERA's assets, liabilities, cashflows, and maturity, in conjunction with processes based on our funding and investment policies and working with our investment consultant to ensure an investment is suitable for MCERA, ensures MCERA fulfills its fiduciary duty and the prudent person rule.

Attachment(s):

1. Periodic Table of Investment Returns

Callan Periodic Table of Investment Returns

Annual returns for key indices ranked in order of performance (2004-2023)

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Emerging Markets	Emerging Markets	Emerging Markets	Emerging Markets	U.S. Fixed	Emerging Markets	Small Cap	Real Estate Funds	Emerging Markets	Small Cap	Large Cap	Real Estate Funds	Small Cap	Emerging Markets	Real Estate Funds	Large Cap	Small Cap	Large Cap	Real Estate Funds	Large Cap
25.55%	34.00%	32.17%	39.38%	5.24%	78.51%	26.85%	14.96%	18.23%	38.82%	13.69%	13.95%	21.31%	37.28%	7.36%	31.49%	19.96%	28.71%	6.55%	26.29%
Dev ex-U.S. Equity	Real Estate Funds	Dev ex-U.S. Equity	Real Estate Funds	Global ex-U.S. Fixed	High Yield	Emerging Markets	U.S. Fixed	Dev ex-U.S. Equity	Large Cap	Real Estate Funds	Large Cap	High Yield	Dev ex-U.S. Equity	Cash Equivalent	Small Cap	Large Cap	Real Estate Funds	Cash Equivalent	Dev ex-U.S. Equity
20.38%	20.15%	25.71%	14.84%	4.39%	58.21%	18.88%	7.84%	16.41%	32.39%	11.46%	1.38%	17.13%	24.21%	1.87%	25.52%	18.40%	21.02%	1.46%	17.94%
Small Cap	Dev ex-U.S. Equity	Small Cap	Dev ex-U.S. Equity	Cash Equivalent	Dev ex-U.S. Equity	Real Estate Funds	High Yield	Small Cap	Dev ex-U.S. Equity	U.S. Fixed	U.S. Fixed	Large Cap	Large Cap	U.S. Fixed	Dev ex-U.S. Equity	Emerging Markets	Small Cap	Hedge Funds	Small Cap
18.33%	14.47%	18.37%	12.44%	2.06%	33.67%	15.26%	4.98%	16.35%	21.02%	5.97%	0.55%	11.96%	21.83%	0.01%	22.49%	18.31%	14.82%	-4.14%	16.93%
Global ex-U.S. Fixed	Hedge Funds	Large Cap	Global ex-U.S. Fixed	Real Estate Funds	Small Cap	High Yield	Global ex-U.S. Fixed	Large Cap	Real Estate Funds	Small Cap	Cash Equivalent	Emerging Markets	Small Cap	High Yield	Emerging Markets	Hedge Funds	Dev ex-U.S. Equity	High Yield	High Yield
12.54%	9.30%	15.79%	11.03%	-10.70%	27.17%	15.12%	4.36%	16.00%	12.90%	4.89%	0.05%	11.19%	14.65%	-2.08%	18.44%	11.83%	12.62%	-11.19%	13.44%
Real Estate Funds	Large Cap	Real Estate Funds	Hedge Funds	Hedge Funds	Large Cap	Large Cap	Large Cap	High Yield	Hedge Funds	Hedge Funds	Hedge Funds	Real Estate Funds	Global ex-U.S. Fixed	Global ex-U.S. Fixed	High Yield	Global ex-U.S. Fixed	Hedge Funds	U.S. Fixed	Emerging Markets
12.00%	4.91%	15.27%	9.96%	-19.03%	26.47%	15.06%	2.11%	15.81%	9.13%	2.98%	-1.12%	7.79%	10.51%	-2.15%	14.32%	10.11%	10.16%	-13.01%	9.83%
High Yield	Small Cap	Hedge Funds	U.S. Fixed	High Yield	Hedge Funds	Hedge Funds	Cash Equivalent	Real Estate Funds	High Yield	High Yield	Dev ex-U.S. Equity	Hedge Funds	Hedge Funds	Large Cap	Hedge Funds	Dev ex-U.S. Equity	High Yield	Dev ex-U.S. Equity	Hedge Funds
11.13%	4.55%	12.89%	6.97%	-26.16%	19.98%	10.25%	0.10%	9.79%	7.44%	2.45%	-3.04%	5.44%	8.59%	-4.38%	10.45%	7.59%	5.28%	-14.29%	7.57%
Large Cap	Cash Equivalent	High Yield	Large Cap	Small Cap	Global ex-U.S. Fixed	Dev ex-U.S. Equity	Small Cap	Hedge Funds	Cash Equivalent	Cash Equivalent	Small Cap	Dev ex-U.S. Equity	High Yield	Hedge Funds	U.S. Fixed	U.S. Fixed	Cash Equivalent	Large Cap	Global ex-U.S. Fixed
10.88%	3.06%	11.85%	5.49%	-33.79%	7.53%	8.95%	-4.18%	6.36%	0.07%	0.04%	-4.41%	2.75%	7.50%	-4.75%	8.72%	7.51%	0.05%	-18.11%	5.72%
Hedge Funds	High Yield	Global ex-U.S. Fixed	Cash Equivalent	Large Cap	U.S. Fixed	U.S. Fixed	Hedge Funds	U.S. Fixed	U.S. Fixed	Emerging Markets	High Yield	U.S. Fixed	Real Estate Funds	Small Cap	Global ex-U.S. Fixed	High Yield	U.S. Fixed	Global ex-U.S. Fixed	U.S. Fixed
9.03%	2.74%	8.16%	5.00%	-37.00%	5.93%	6.54%	-5.25%	4.21%	-2.02%	-2.19%	-4.47%	2.65%	6.66%	-11.01%	5.09%	7.11%	-1.54%	-18.70%	5.53%
U.S. Fixed	U.S. Fixed	Cash Equivalent	High Yield	Dev ex-U.S. Equity	Cash Equivalent	Global ex-U.S. Fixed	Dev ex-U.S. Equity	Global ex-U.S. Fixed	Emerging Markets	Global ex-U.S. Fixed	Global ex-U.S. Fixed	Global ex-U.S. Fixed	U.S. Fixed	Dev ex-U.S. Equity	Real Estate Funds	Cash Equivalent	Emerging Markets	Emerging Markets	Cash Equivalent
4.34%	2.43%	4.86%	1.87%	-43.56%	0.21%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.49%	3.54%	-14.09%	4.39%	0.67%	-2.54%	-20.09%	5.01%
Cash Equivalent	Global ex-U.S. Fixed	U.S. Fixed	Small Cap	Emerging Markets	Real Estate Funds	Cash Equivalent	Emerging Markets	Cash Equivalent	Global ex-U.S. Fixed	Dev ex-U.S. Equity	Emerging Markets	Cash Equivalent	Cash Equivalent	Emerging Markets	Cash Equivalent	Real Estate Funds	Global ex-U.S. Fixed	Small Cap	Real Estate Funds
1.33%	-8.65%	4.33%	-1.57%	-53.33%	-30.40%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.57%	2.28%	0.34%	-7.05%	-20.44%	-12.74%

- Bloomberg Corp High Yield ● Bloomberg Global Aggregate ex US ● Bloomberg US Aggregate ● HFRI Fund Weighted ● ICE BofAML US 3-Month Treasury Bill
- MSCI Emerging Markets ● MSCI World ex USA ● NFI-ODCE (value-weighted net) ● Russell 2000 ● S&P 500

Callan Periodic Table of Investment Returns

Annual returns for key indices ranked in order of performance (2004-2023)

1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Dev ex-U.S. Equity	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Large Cap	Global ex-U.S. Fixed	High Yield	Hedge Funds	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Large Cap	Large Cap	Large Cap	Large Cap	Hedge Funds	Real Estate Funds	U.S. Fixed	Global ex-U.S. Fixed	Emerging Markets	Emerging Markets
50.79%	65.32%	24.24%	27.46%	31.69%	15.69%	46.17%	21.22%	32.21%	7.34%	37.58%	22.96%	33.36%	28.58%	31.29%	13.19%	8.43%	22.37%	55.82%	25.55%
Large Cap	Large Cap	Cash Equivalent	Small Cap	Small Cap	U.S. Fixed	Small Cap	Small Cap	Hedge Funds	Global ex-U.S. Fixed	Small Cap	Hedge Funds	Small Cap	Dev ex-U.S. Equity	Dev ex-U.S. Equity	U.S. Fixed	High Yield	U.S. Fixed	Small Cap	Dev ex-U.S. Equity
31.73%	18.67%	6.72%	25.02%	16.26%	8.95%	46.04%	18.41%	30.88%	5.33%	28.45%	21.10%	22.36%	18.77%	27.92%	11.63%	5.28%	10.26%	47.25%	20.38%
Small Cap	High Yield	Real Estate Funds	Large Cap	U.S. Fixed	Cash Equivalent	Hedge Funds	High Yield	Small Cap	Real Estate Funds	Hedge Funds	Small Cap	Hedge Funds	Global ex-U.S. Fixed	Small Cap	Cash Equivalent	Real Estate Funds	Real Estate Funds	Dev ex-U.S. Equity	Small Cap
31.05%	17.45%	5.59%	16.61%	14.54%	8.41%	32.19%	15.75%	18.88%	5.07%	21.50%	16.49%	16.79%	18.44%	21.26%	6.19%	4.64%	4.57%	39.42%	18.33%
High Yield	U.S. Fixed	Large Cap	High Yield	Dev ex-U.S. Equity	Hedge Funds	Large Cap	Large Cap	High Yield	Cash Equivalent	Global ex-U.S. Fixed	High Yield	Real Estate Funds	Real Estate Funds	Large Cap	Hedge Funds	Hedge Funds	Cash Equivalent	High Yield	Global ex-U.S. Fixed
25.64%	15.25%	5.25%	12.54%	11.14%	5.81%	30.47%	7.62%	17.11%	4.20%	21.47%	11.35%	13.94%	15.29%	21.04%	4.98%	4.62%	1.78%	28.97%	12.54%
U.S. Fixed	Cash Equivalent	High Yield	U.S. Fixed	Cash Equivalent	Real Estate Funds	Global ex-U.S. Fixed	U.S. Fixed	Global ex-U.S. Fixed	Hedge Funds	High Yield	Real Estate Funds	High Yield	U.S. Fixed	Real Estate Funds	Small Cap	Cash Equivalent	High Yield	Large Cap	Real Estate Funds
22.13%	6.75%	4.98%	7.88%	8.99%	0.40%	16.05%	7.40%	13.77%	4.10%	19.18%	10.53%	12.76%	8.67%	12.05%	-3.02%	4.42%	-1.37%	28.68%	12.00%
Cash Equivalent	Small Cap	U.S. Fixed	Cash Equivalent	Real Estate Funds	Large Cap	U.S. Fixed	Cash Equivalent	Large Cap	Large Cap	U.S. Fixed	Dev ex-U.S. Equity	U.S. Fixed	Cash Equivalent	Cash Equivalent	Global ex-U.S. Fixed	Small Cap	Hedge Funds	Hedge Funds	High Yield
8.46%	5.68%	2.76%	6.93%	5.59%	-3.11%	16.00%	3.92%	10.08%	1.32%	18.48%	6.86%	9.68%	5.23%	4.85%	-3.91%	2.49%	-1.45%	19.55%	11.13%
Real Estate Funds	Real Estate Funds	Small Cap	Real Estate Funds	High Yield	High Yield	Dev ex-U.S. Equity	Global ex-U.S. Fixed	U.S. Fixed	High Yield	Dev ex-U.S. Equity	Global ex-U.S. Fixed	Cash Equivalent	Hedge Funds	High Yield	High Yield	Emerging Markets	Emerging Markets	Global ex-U.S. Fixed	Large Cap
8.21%	5.59%	-8.80%	6.17%	0.84%	-9.59%	12.03%	3.02%	9.75%	-1.03%	11.40%	6.73%	5.33%	2.62%	2.39%	-5.86%	-2.61%	-6.16%	19.36%	10.88%
					Small Cap	Cash Equivalent	Real Estate Funds	Cash Equivalent	Small Cap	Cash Equivalent	Cash Equivalent	Dev ex-U.S. Equity	High Yield	U.S. Fixed	Large Cap	Global ex-U.S. Fixed	Dev ex-U.S. Equity	Real Estate Funds	Hedge Funds
					-19.48%	6.39%	-6.43%	3.19%	-1.82%	6.02%	5.30%	2.27%	1.87%	-0.83%	-9.11%	-3.75%	-15.80%	8.28%	9.03%
					Dev ex-U.S. Equity	Real Estate Funds	Dev ex-U.S. Equity	Real Estate Funds	U.S. Fixed	Real Estate Funds	U.S. Fixed	Global ex-U.S. Fixed	Small Cap	Global ex-U.S. Fixed	Dev ex-U.S. Equity	Large Cap	Small Cap	U.S. Fixed	U.S. Fixed
					-23.08%	-7.15%	-12.27%	-0.47%	-2.92%	6.01%	3.61%	-4.01%	-2.55%	-8.83%	-13.37%	-11.89%	-20.48%	4.10%	4.34%
																Dev ex-U.S. Equity	Large Cap	Cash Equivalent	Cash Equivalent
																-21.40%	-22.10%	1.15%	1.33%

- Bloomberg Corp High Yield ● Bloomberg Global Aggregate ex US ● Bloomberg US Aggregate ● HFRI Fund Weighted ● ICE BofAML US 3-Month Treasury Bill
- MSCI Emerging Markets ● MSCI World ex USA ● NFI-ODCE (value-weighted net) ● Russell 2000 ● S&P 500