



Quarterly Investment Performance Analysis

Wyoming State Treasurer's Office

Period Ended: December 31, 2019





Memorandum

To	Wyoming State Loan and Investment Board
From	RVK, Inc.
Subject	Investment Performance Analysis Commentary
Date	December 31, 2019

Outlined below please find a summary of significant observations regarding performance of the State's Funds for the period ended December 31, 2019. We hope this summary will facilitate your review of our Investment Performance Analysis Report.

The Total Fund returned 2.3% net of fees during the fourth quarter as risk assets produced positive returns. Long-term performance for the Total Fund remains strong, with the State earning returns of 4.6% and 5.3% per annum over the trailing seven- and ten-year periods.

Absolute results were positive for all of the State's investment pools, with each pool keeping pace with, or modestly trailing, their respective benchmarks during the quarter. The State's non-permanent funds with larger strategic allocations to fixed income investments generated lower returns on an absolute basis, but similar returns on a relative basis, compared to the State's permanent funds.

The Bloomberg US Aggregate Bond Index increased by 0.2%, due to modest changes in rates in the fourth quarter. Diversification away from core US bonds had mixed results as long duration underperformed the broad market, while bank loans, EMD and low duration outperformed. The State's core fixed income managers slightly underperformed the broad market index, collectively returning 0.0%. Long duration and bank loans modestly trailed their respective benchmarks while low duration and emerging markets debt fixed income modestly outperformed their respective benchmarks.

US equity markets delivered positive returns across all market capitalizations and styles during the fourth quarter. Major US equity indices finished the quarter in positive territory, with the Russell 3000 Index returning 9.1% for the quarter. The State's All Cap and Small Cap US equity composites had strong returns during the fourth quarter, modestly underperforming their respective indices.

Developed international markets underperformed emerging markets during the quarter, with the MSCI EAFE Index returning 8.2% and the MSCI Emerging Markets Index returning 11.8%. The State's international equity composite returned 9.2% during the quarter, outperforming the MSCI ACW Ex US Index by 0.3%. Passively managed strategies within the State's

PORTLAND OFFICE
1211 SW 5th Avenue
Suite 900
Portland, Oregon 97204
MAIN 503.221.4200

CHICAGO OFFICE
30 N LaSalle Street
Suite 3900
Chicago, Illinois 60602
MAIN 312.445.3100

NEW YORK OFFICE
1 Penn Plaza
Suite 2128
New York, New York 10119
MAIN 646.805.7075



international equity portfolio kept pace with their respective benchmarks, while Arrowstreet outperformed its respective benchmark by 0.8%.

Mixed assets, including preferred stock and MLPs, generated mixed absolute returns during the quarter. Cohen & Steers returned 3.2% in the quarter and outperformed its benchmark by 0.9%. Harvest returned -1.1% as MLPs declined modestly in the fourth quarter.

Core real estate generated a positive return during the quarter. The capital appreciation component of returns increased from the prior quarter, but the income component remains in line with historical levels. The State's core real estate composite earned 1.4% in the fourth quarter, outperforming the NCREIF ODCE Index. Clarion earned a positive return of 1.9%, but UBS returned -0.1%.

Diversified hedge funds returned 1.7% during the quarter, trailing the HFRI FOF Composite Index by 1.4%. Grosvenor Diversified Hedge Funds and Internal Diversified Hedge Funds returned 2.5% and 1.5%, respectively. The PAAMCO - Jackalope Fund also trailed the index.

Fourth Quarter Economic Environment

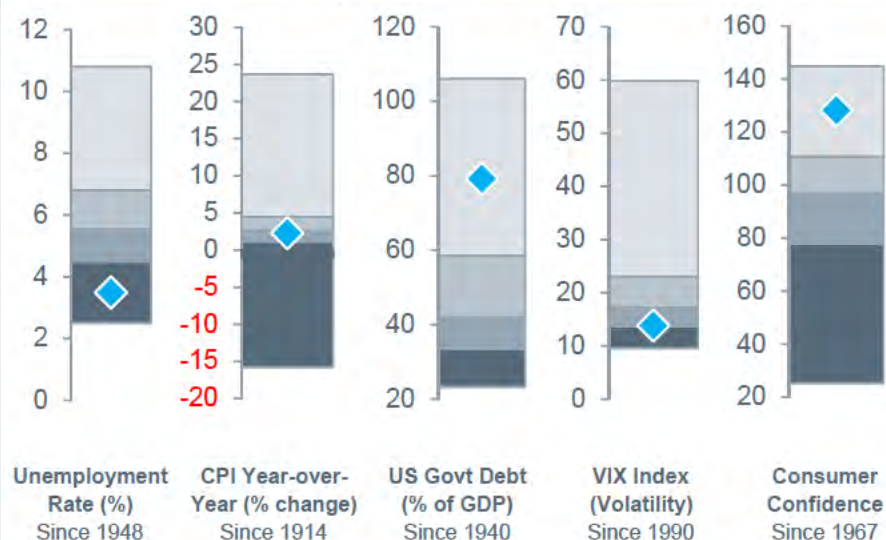
Key Economic Indicators

The fourth quarter of 2019 was a strong quarter for global equity markets, with representative US, developed non-US, and emerging market indices each substantially adding to gains realized earlier in the year. Credit markets also finished in positive territory, as supportive financial conditions and a general risk-on market sentiment drove spreads to tighten across the quality spectrum. Falling discount rates drove valuations and performance for US equities during the first half of the year, but increases in Q4 appeared more directly tied to optimism around international trade. Bilateral negotiations between the US and China finally resulted in an announced "Phase One" trade agreement, including a partial rollback of tariffs, which de-escalated trade tensions to a degree. US economic data released during Q4 was generally positive—although softness remains in some key sectors, such as manufacturing. The ISM PMI value was below 50 in Q4, indicating contraction in the manufacturing sector. Global central banks remain accommodative, though the market expects little additional help from the Federal Reserve in 2020. During its most recent meeting, the FOMC did not forecast any additional rate cuts in 2020.

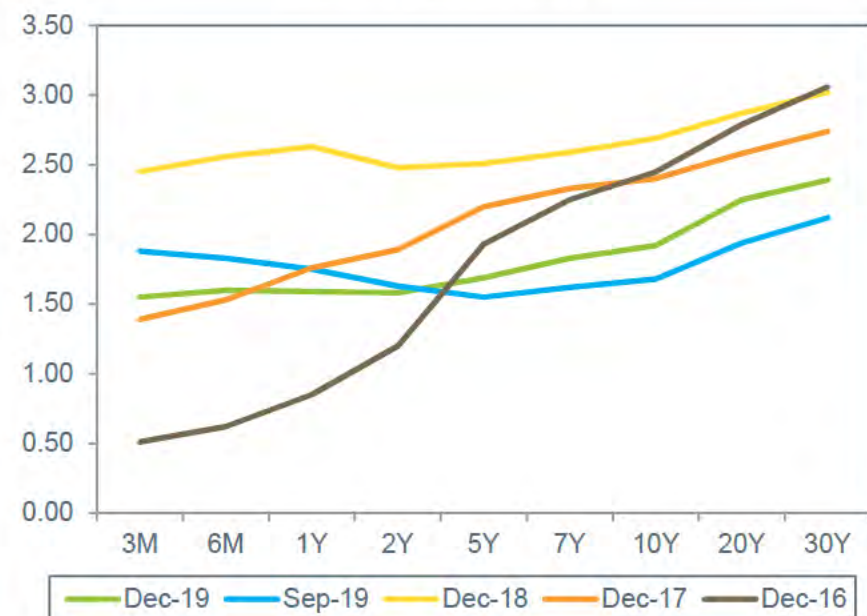
Economic Indicators	Dec-19	Sep-19	Dec-18	Dec-16	20 Yr
Federal Funds Rate (%)	1.55 ▼	1.90	2.40	0.55	1.79
Breakeven Infl. - 5 Yr (%)	1.70 ▲	1.35	1.49	1.86	1.85
Breakeven Infl. - 10 Yr (%)	1.79 ▲	1.52	1.71	1.97	2.03
CPI YoY (Headline) (%)	2.3 ▲	1.7	1.9	2.1	2.2
Unemployment Rate (%)	3.5 —	3.5	3.9	4.7	5.9
Real GDP YoY (%)	2.3 ▲	2.1	2.5	2.0	2.1
PMI - Manufacturing	47.8 ▼	48.2	55.0	54.4	52.7
USD Total Wtd Idx	90.82 ▼	93.25	91.79	95.72	86.07
WTI Crude Oil per Barrel (\$)	61.1 ▲	54.1	45.4	53.7	61.9
Gold Spot per Oz (\$)	1,517 ▲	1,472	1,282	1,148	935

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	9.07	31.49	31.49	11.70	13.56
Russell 2000	9.94	25.53	25.53	8.23	11.83
MSCI EAFE (Net)	8.17	22.01	22.01	5.67	5.50
MSCI EAFE SC (Net)	11.52	24.96	24.96	8.85	8.74
MSCI Emg Mkts (Net)	11.84	18.44	18.44	5.61	3.68
Bloomberg US Agg Bond	0.18	8.72	8.72	3.05	3.75
ICE BofAML 3 Mo US T-Bill	0.46	2.28	2.28	1.07	0.58
NCREIF ODCE (Gross)	1.51	5.34	5.34	8.97	11.42
FTSE NAREIT Eq REIT (TR)	-0.76	26.00	26.00	7.21	11.94
HFRI FOF Comp	3.08	8.39	8.39	2.36	2.83
Bloomberg Cmtty (TR)	4.42	7.69	7.69	-3.92	-4.73

Key Economic Indicators



Treasury Yield Curve (%)



Fourth Quarter Review

Broad Market

US markets enjoyed a strong finish to the year amid de-escalation of the US-China trade war and stimulative monetary policy from the Fed. The quarter saw high single and low double digit returns for major indexes across all size segments and styles. The strong quarter pushed the S&P 500 Index to a 31.5% return on the year.

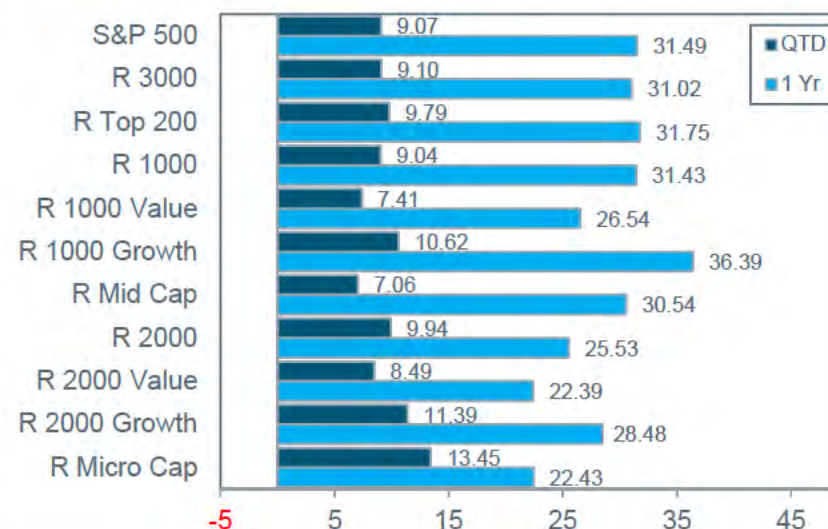
Market Cap

Large and mid-cap stocks lagged slightly behind small-cap stocks in Q4, with the Russell 2000 Index returning 9.9% and the S&P 500 and Russell MidCap Indexes returning 9.1% and 7.1%, respectively.

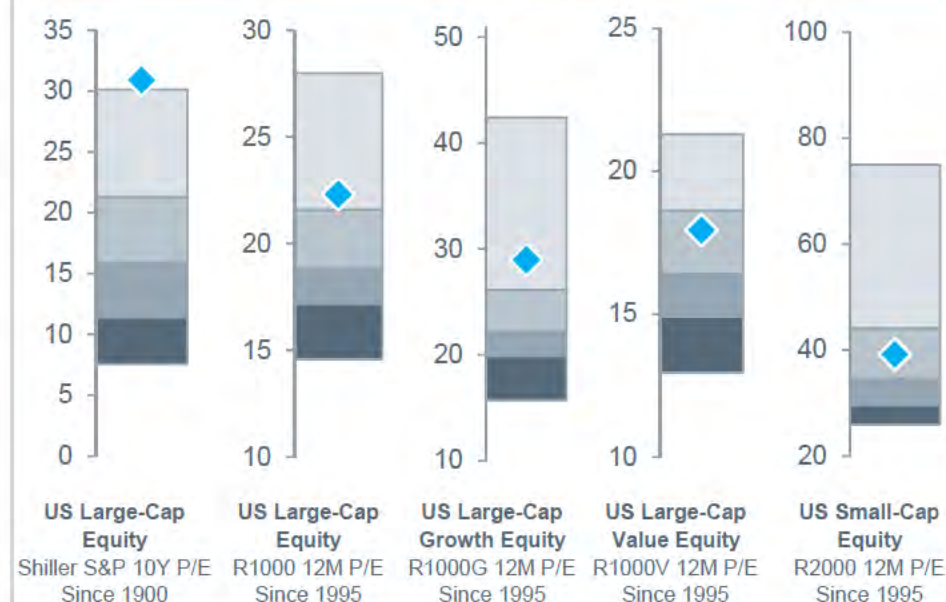
Style and Sector

Active managers struggled to keep up with strong benchmark returns in Q4. In addition, value-tilted managers performed notably better than growth and core managers in the quarter.

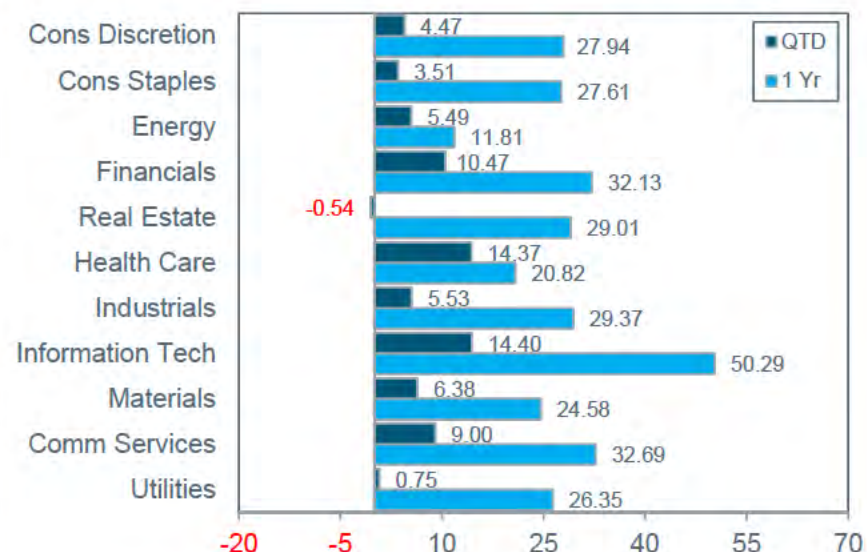
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition.
P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review

Developed Markets

Developed international markets delivered strong absolute returns in Q4, but they still lagged both domestic and emerging markets. By country, returns for the quarter were positive almost across the board, with only Belgium ending in slightly negative territory. However, Q4 returns were largely driven by multiple expansion, as growth continues to be weak in developed international markets.

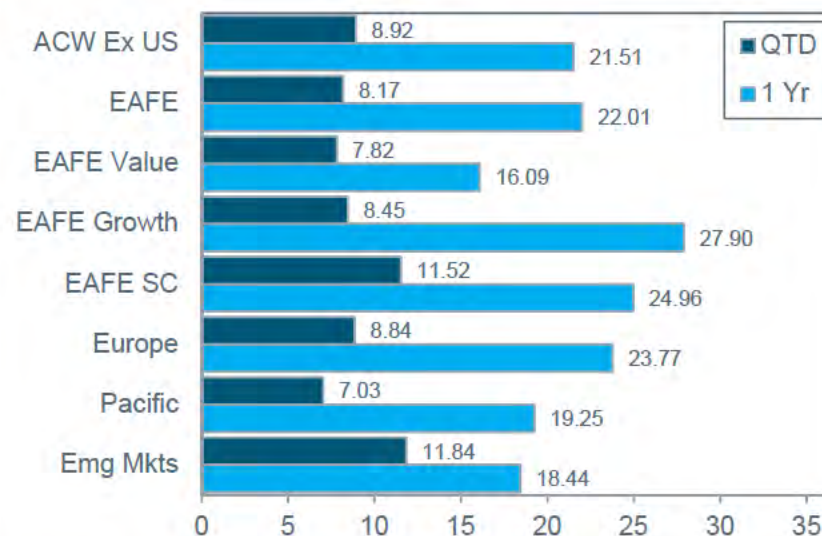
Emerging Markets

Emerging markets outperformed all other equity markets in Q4. Returns were largely lifted by the announcement of the initial phase of a trade deal between China and US, potentially indicating de-escalation in the ongoing trade war.

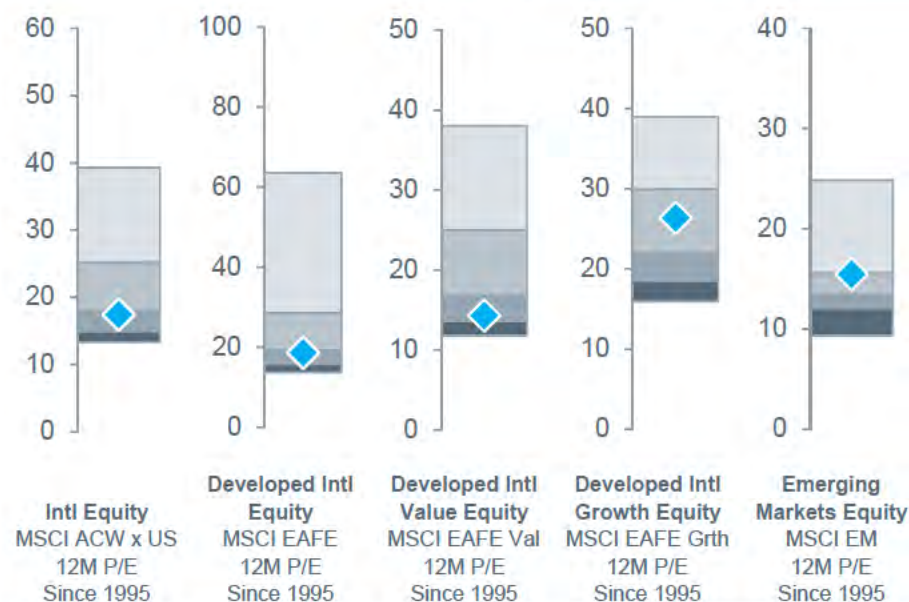
Market Cap & Style

In developed international markets, value stocks continued to underperform growth, while small-cap stocks outperformed large-cap for the quarter. In emerging markets, growth stocks outperformed value and large-cap outperformed small-cap.

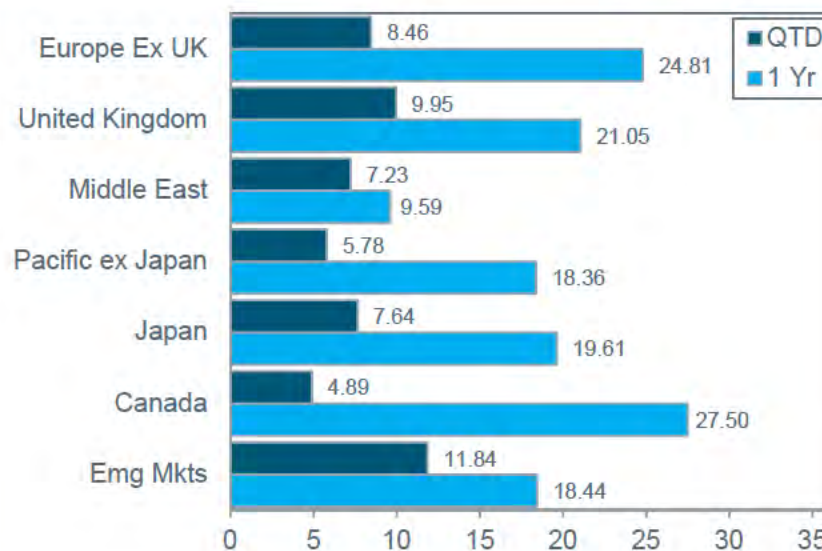
MSCI Style and Capitalization Market Performance (%)



Valuations



MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers. All returns are shown net of foreign taxes on dividends.

Fourth Quarter Review

Broad Market

After a solid first three quarters supported by declining rates, the Bloomberg US Aggregate Index finished the year more subdued, returning just 0.2% for the final quarter. The Bloomberg US Government Long Duration Index fell sharply, finishing the quarter with a -4.1% return, but the index still ended the year in positive territory with a return of 14.7%.

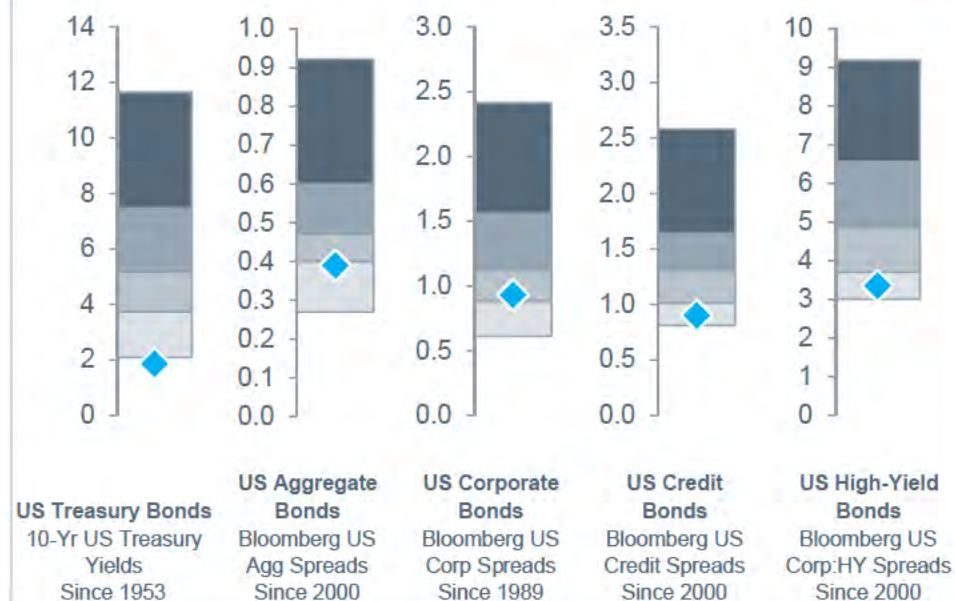
Credit Market

Corporate credit fared better than the broader index for the quarter, as strong economic data signaled optimism for the sector. Spreads tightened over the quarter, and the Bloomberg US Corporate Index returned 1.2%, contributing to an already-impressive annual return of 14.5%.

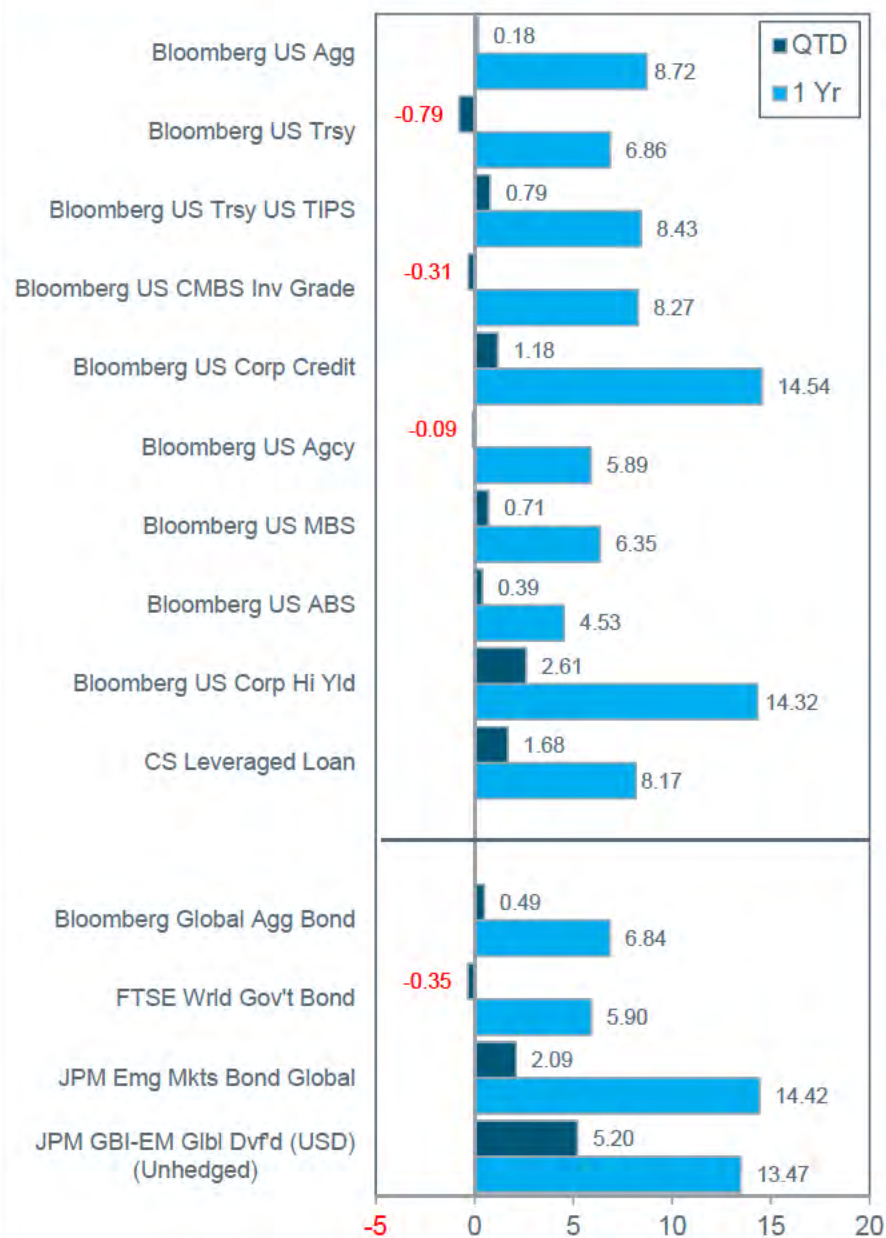
Emerging Market Debt

Hard currency emerging markets debt also added to a strong year. The JPM EMBI Global Diversified Index posted 1.8% in the final quarter to finish the year up 15.0%.

Valuations



Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review - Absolute Return

General Market - Hedge Funds

Hedge funds finished the year on a positive note, as the vast majority of strategies in the space added to gains realized earlier in the year. The HFRI Equity Hedge Index return for 2019, at 13.7%, was the best returning year for the index since 2013. Fund of Hedge Funds that maintained significant strategic exposure to Long/Short Equity and Long/Short Credit outperformed funds that rotated towards diversifying, market neutral strategies.

General Market - Global Tactical Asset Allocation (GTAA)

Most GTAA managers showed positive absolute performance in 2019, though they generally underperformed a static and less diversified blend of 60% US equity and 40% US fixed income. Nearly all GTAA managers underperformed this measure due to the extraordinarily strong 2019 performance of US large-cap equities compared to most of the other diversifying global asset classes included within GTAA strategies. Generally, those with the strongest returns in 2019 held higher relative allocations to US equities as opposed to developed international or emerging market equities.

Fourth Quarter Review - Real Assets

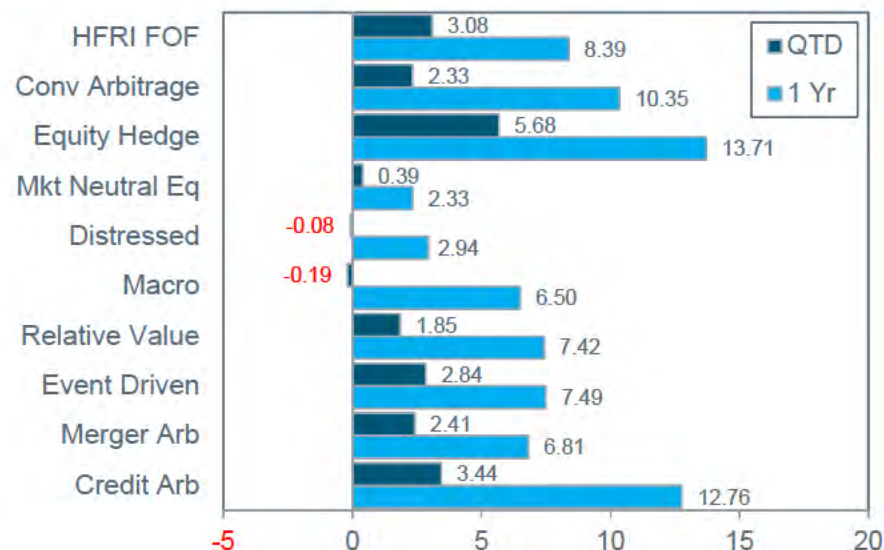
General Market - Diversified Inflation Strategies (DIS)

Performance of DIS managers ranged widely throughout both Q4 and the calendar year, though nearly all managers provided significantly stronger than typical positive absolute returns. Managers with larger TIPS allocations tended to underperform peers for the year, despite still achieving their own real return expectations. DIS managers that outperformed peers by the widest margins emphasized allocations to REITs, global listed infrastructure, and/or global natural resource equities.

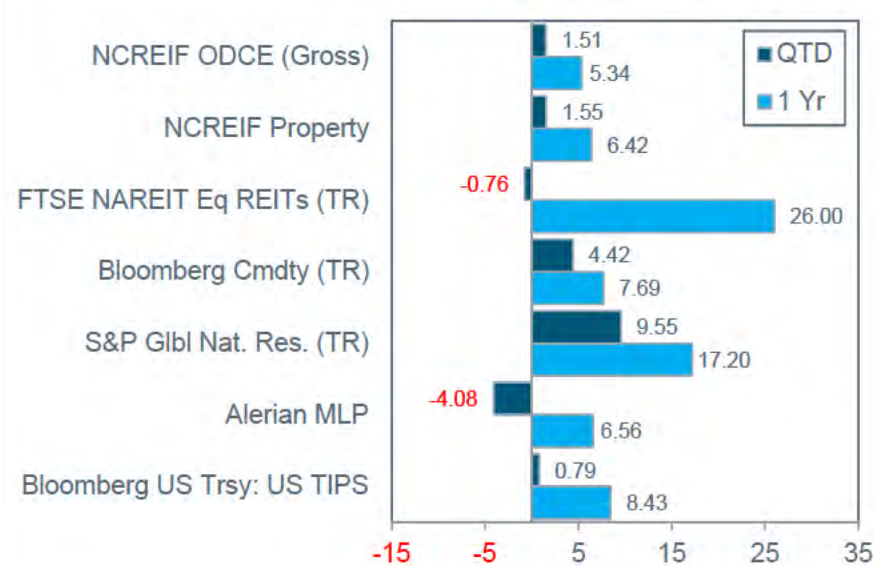
General Market - Real Estate

Core private real estate returned 1.5% during the quarter, as reported by the NCREIF-ODCE Index, with the total return comprised of 1.0% income and 0.5% price appreciation. While the income component stayed in-line with historical levels, price appreciation experienced a modest increase of 0.2% compared to the relatively flat Q3 return. Investments in publicly traded real estate trailed their private market counterparts during Q4.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



Annual Asset Class Performance

As of December 31, 2019

Calendar Year Performance												Annualized Statistics (01/2006 - 12/2019)			
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	CYTD (As of 12/19)		Return	Standard Deviation	Sharpe Ratio
<div>Best</div> <div>↑</div> <div>↓</div> <div>Worst</div>	78.79	35.17	15.99	18.64	38.82	14.07	15.02	21.95	27.19	10.18	31.49	S&P 500 Index - US Large Cap	9.30	15.05	0.59
	51.62	26.85	14.47	16.83	32.39	13.69	5.64	21.31	21.83	8.35	25.53	Russell 2000 Index - US Small Cap	8.16	19.07	0.45
	45.01	21.85	11.22	16.76	29.75	12.50	5.47	13.31	17.89	1.87	21.51	International Equity Custom Index - International	3.88	17.89	0.23
	32.46	16.36	7.84	16.35	21.51	11.37	1.38	11.96	15.21	0.44	17.64	Cambridge US PE Index - Private Equity	12.07	8.17	1.31
	27.17	15.68	2.11	16.00	15.29	7.66	0.55	10.16	14.65	0.01	13.94	NCREIF ODCE Index - Real Estate	6.81	7.35	0.78
	26.46	15.06	1.52	13.45	13.94	5.97	0.18	9.94	9.11	-4.02	13.47	HFRI FOF Comp Index	2.49	6.36	0.22
	21.98	14.99	0.66	10.94	8.96	4.89	-0.27	8.77	7.77	-4.25	8.72	S&P U.S. Preferred Stock Index	5.34	18.30	0.30
	13.39	10.17	-1.16	9.66	5.29	3.37	-0.69	4.50	7.62	-4.38	8.64	MLP Custom Index	6.71	20.68	0.36
	11.47	9.28	-1.75	4.95	0.12	1.60	-4.41	2.65	4.12	-6.21	8.39	Bloomberg US Agg Bond Index - Fixed Income	4.28	3.24	0.92
	5.93	6.54	-4.18	4.79	-0.17	0.18	-5.66	1.94	3.54	-11.01	7.55	S&P LSTA Lvgd Loan Index - Bank Loans	4.73	9.97	0.39
	1.17	5.70	-5.72	4.21	-2.02	-3.87	-14.92	0.51	0.84	-11.67	5.34	JPM GBI-EM Gbl Dvf'd Index (USD) - EMD	5.28	10.84	0.42
	-29.76	0.73	-13.71	0.26	-8.98	-5.72	-35.07	0.38	-5.58	-14.20	2.47	JP Morgan Cash Custom Index - Cash Equiv	1.57	0.87	1.16

The International Equity Custom Index consists of the MSCI EAFE Index (USD) (Gross) through July 2010 and the MSCI ACW Ex US Index (USD) (Net) thereafter.

The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.

The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return.

The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

The Cambridge US Private Equity Index is shown for informational purposes only. Due to availability of data, current quarter performance assumes a 0.00% return.

Calculations are based on a quarterly periodicity.

ASSET CLASS SUMMARY

US Equity: The **US Equity** structure employs a core-satellite approach, which gains passive, low-cost beta exposure at its core. The core component of the portfolio utilizes passive management coupled with low beta, minimum volatility strategies that are intended to outperform a market-capitalization weighted index at a similar absolute risk level. The Small Cap investment managers are passive strategies.

International Equity: The **International Equity** structure follows an ACWI Ex US approach, which offers coverage of the broad international equity market, including developed and emerging markets. The International Equity portfolio is comprised of both passive and active management styles. The mix of passive and active management helps to minimize costs, while striving to maximize the probability of alpha generation at a similar absolute risk level.

Private Equity: The **Private Equity** asset class has primarily been accessed through fund of funds and customized fund of one structures. Investments also include exposure to direct co-investments and secondaries. Recent commitments within this asset class have added global diversification to the portfolio.

Real Estate: The **Real Estate** portfolio currently consists of Core and Non-Core Real Estate investments. The overall asset class structure has remained relatively conservative with regard to asset types and the use of financial leverage. Core Real Estate has historically been focused on diversified US markets, lower leverage and higher occupancy rates, while Non-Core Real Estate investments allow for greater investment flexibility.

Diversified Hedge Funds: The **Diversified Hedge Funds** structure historically consisted of multi-Hedge Fund of Fund investments. In 2015, the portfolio began a transition to a core-satellite approach, utilizing a single Fund of Fund manager and satellite direct Hedge Funds. Initial funding was completed in July 2018 for a custom fund of one, consisting of a discretionary multi-strategy FoF portfolio and a non-discretionary portfolio of direct hedge funds managed by the Treasurer's Office. An increase in the use of direct Hedge Funds is anticipated to lower external management expenses and allow for greater control over the program.

Preferred Stock: The **Preferred Stock** portfolio consists of a single, specialized preferred stock investment manager. The portfolio invests in a diversified portfolio of preferred securities including exchange-traded and over-the-counter preferreds and contingent convertibles (CoCos). The investment team seeks to take advantage of the various term structures of preferreds in order to optimize the yield and interest rate sensitivity of the portfolio.

MLPs: The **MLPs** portfolio consists of two portfolios with a specialized investment manager. The passive strategy is designed to replicate the market index, whereas the active strategy investment objective is to deliver both high yield and stable growth through the disciplined application of its fundamental bottom-up analysis as well as its trading strategies and investments in MLP and energy infrastructure assets.

Fixed Income: The **Fixed Income** portfolio employs a core-satellite approach. Serving as "the anchor" to the portfolio, Core Fixed Income aims to preserve capital, by providing relatively "safe" investments and stable income. Core Fixed Income has disaggregated segments comprised of investment grade corporate, MBS, and government. The Internally Managed Portfolio also provides liquidity and safety of capital. The satellite portfolios serve as dedicated specialists. Bank Loans provide diversification from traditional fixed income investments and the potential for enhanced return. Investments in Emerging Market Debt diversify US Dollar exposure and provide opportunities to capitalize on global growth trends. Opportunistic Fixed Income is employed to capitalize on severe market dislocations, such as European Debt.

INDEX GLOSSARY

MSCI ACW: The **MSCI All Country World Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The index consists of the 23 developed countries that make up the MSCI World Index as well as the following emerging market countries: *Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates.*

Russell 3000: The **Russell 3000 Index** is a market-capitalization weighted index of 3,000 widely held equity securities designed to measure performance of the entire US stock market.

State Street All Cap Custom Index: The **State Street All Cap Custom Index** consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter.

S&P 500: The **S&P 500 Index (Cap Wtd)** is a commonly recognized, market-capitalization weighted index of 500 widely held equity securities designed to measure broad US equity performance.

All Cap US Equity Custom Index: The **All Cap US Equity Custom Index** consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter.

Russell 2000: The **Russell 2000 Index** measures the performance of the small-cap segment of the US equity market. It includes approximately 2,000 of the smallest securities by market cap from the Russell 3000 Index.

International Equity Custom Index: The **International Equity Custom Index** consists of the MSCI EAFE Index through July 2010 and the MSCI ACW Ex US Index thereafter.

MSCI EAFE: The **MSCI EAFE (Europe, Australasia, Far East) Index** is designed to measure equity market performance of 21 developed countries, excluding the US & Canada: *Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.*

MSCI ACW Ex US: The **MSCI ACW (All Country World) Ex US Index** consists of large cap and mid cap representation within the same countries that comprise the MSCI ACW Index, excluding the United States.

MSCI ACW Ex US IM: The **MSCI ACW (All Country World) Ex US Investable Market Index** consists of large cap, mid cap, and small cap representation within the same countries that comprise the MSCI ACW Index, excluding the United States.

S&P US Preferred Stock: The **S&P US Preferred Stock Index** covers the US market of capital stock that pays dividends at a specified rate and has a preference over common stock in the payment of dividends and the liquidation of assets.

S&P MLP: The **S&P MLP Index** is a float-adjusted, cap-weighted index of energy MLPs and publicly traded limited liability companies, which have a similar legal structure to MLPs and share the same tax benefits. Constituents must have a minimum float-adjusted market cap of USD 300 million.

MLP Custom Index: The **MLP Custom Index** consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.

Alerian MLP Index: The **Alerian MLP Index** is an index of energy infrastructure Master Limited Partnerships (MLPs). It is a capped, float-adjusted, capitalization-weighted index, whose constituents represent approximately 85% of the total float-adjusted market capitalization.

Alerian Midstream Energy Index: The **Alerian Midstream Energy Index** is an index of energy infrastructure Master Limited Partnerships (MLPs), whose constituents earn the majority of their cash flow from midstream activities involving energy commodities.

NCREIF ODCE: The **NCREIF ODCE (Open End Diversified Core) Index** is an index of investment returns reporting on both a historical and current basis the results of 38 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NCREIF ODCE Index is capitalization-weighted and performance is time-weighted.

NCREIF Property: The **NCREIF Property Index** prepared by the National Council of Real Estate Investment Fiduciaries is a quarterly time series composite return measure for over 6,000 individual commercial real estate properties acquired in the private market for investment purposes. Total performance represents returns from appreciation and income, and includes multi-family, office, retail, and industrial properties.

HFRI FOF Comp Index: The **HFRI FOF (Fund of Funds) Comp Index** average is created by Hedge Fund Research, Inc. and contains over 800 funds of hedge funds that are each invested in multiple investment strategies.

Bloomberg US Agg Bond: The **Bloomberg US Aggregate Bond Index** covers the US dollar-denominated, investment-grade, fixed-rate, taxable bond market of SEC-registered securities: US Treasury and agency bonds, domestic corporate debt, and mortgage-backed securities.

Bloomberg US Agg Int Index: The **Bloomberg US Aggregate Intermediate Index** covers the subsection of the Bloomberg US Aggregate Bond Index with remaining maturities between one and ten years.

PIMCO Custom Index: The **PIMCO Custom Index** consists of the Bloomberg US Agg Bond Index through February 2018, the Bloomberg US Agg Int Index through June 2019, the Bloomberg US Agg Bond Index through 03/26/2020, account performance from 03/27/2020 through 04/03/2020, and the Bloomberg US Agg Bond Index thereafter.

Payden & Rygel Custom Index: The **Payden & Rygel Custom Index** consists of the Bloomberg US Corp Inv Grade Index through 03/25/2020, account performance from 03/26/2020 through 03/31/2020, and Bloomberg US Corp Inv Grade Index thereafter.

Internal Intermediate Govt Fixed Income Portfolio Index: The **Internal Intermediate Govt Fixed Income Portfolio Index** currently consists of the Bloomberg US Treasury Index. November 2019 performance consists of the Internal Intermediate Govt Fixed Income Portfolio. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index.

S&P/LSTA Leveraged Loan: The **S&P/LSTA Leveraged Loan Index** reflects the market-weighted performance of institutional leveraged loans in the US loan market.

CS Western European Hi Yld: The **Credit Suisse Western European High Yield Index** is designed to mirror the investable universe of the Western European high yield debt market. The index includes issues denominated in \$US and Western European currencies.

EMD Custom Index: The **EMD Custom Index** consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020 and 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter.

JP Morgan GBI-EM Gbl Dv'd: The **JPMorgan GBI-EM Global Diversified Total Return Index (Unhedged)** is a global emerging markets index that consists of regularly traded, liquid fixed-rate, domestic currency government bonds.

JP Morgan CEMBI Broad Diversified Index: The **JP Morgan CEMBI Broad Diversified Index** is an index that is comprised of the corporate segment of emerging markets debt.

Bloomberg US Govt/Credit: Long Trm Bond: The **Bloomberg US Gov't/Credit Long Term Bond Index** covers the non-securitized component of the US Aggregate Index, with maturities of 10 years or more. It includes investment grade, US dollar-denominated, fixed-rate Treasuries, government-related and corporate securities.

Bloomberg US Govt: Long Trm Bond: The **Bloomberg US Gov't Long Term Bond Index** covers public US government obligations with remaining maturities of ten years or more.

Bloomberg US Credit: Long Trm Bond: The **Bloomberg US Credit Long Term Bond Index** covers public US investment grade corporate bonds with remaining maturities of ten years or more.

Bloomberg US Govt: Int Trm Bond: The **Bloomberg US Gov't Intermediate Term Bond Index** covers public US government obligations with remaining maturities between one and ten years.

Bloomberg US Corp Int Trm Bond: The **Bloomberg US Corporate Intermediate Term Bond Index** covers US investment grade corporate bonds with remaining maturities between one and ten years.

Bloomberg US Gov't/Credit 1-3 Yr Bond Index: The **Bloomberg US Gov't/Credit 1-3 Year Bond Index** covers all medium and larger issues of U.S. government, investment-grade corporate, and investment-grade international dollar-denominated bonds that have maturities of between one and three years and are publicly issued.

Bloomberg US Gov't 1-3 Yr Bond Index: The **Bloomberg US Gov't 1-3 Year Bond Index** covers public US government obligations with remaining maturities between one and three years.

Bloomberg US Credit 1-3 Yr Bond Index: The **Bloomberg US Credit 1-3 Year Bond Index** covers public investment-grade corporate, and investment-grade international dollar-denominated bonds that have maturities of between one and three years.

Bloomberg US MBS Index: The **Bloomberg US MBS Index** covers the public U.S. mortgage backed securities market.

Bloomberg US Corp Inv Grade Index: The **Bloomberg US Corp Inv Grade Index** covers the public U.S. investment grade corporate bond market.

Low Duration Fixed Income Custom Index: The **Low Duration Fixed Income Custom Index** consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.

JP Morgan Cash Custom Index: The **JP Morgan Cash Custom Index** is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.

JP Morgan Blended Index: The **JP Morgan Blended Index** consists of an equal-weighted allocation to the ICE BofAML 1-3 Year US Treasury Index, ICE BofAML 1-3 Year Agencies Index, and ICE BofAML 0-3 Year Weighted Average Life Mortgage Index.

Total Fund Performance										
	Allocation		Performance (%)							
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Total Fund	21,740,814,514	100.0	2.3	3.3	10.4	10.4	5.8	4.4	4.6	5.3
Wyoming State Custom Index			2.3	3.3	10.8	10.8	5.6	4.3	4.7	5.2
Difference			0.0	0.0	-0.4	-0.4	0.2	0.1	-0.1	0.1
Permanent Funds	15,636,175,751	71.9	2.9	4.1	12.5	12.5	6.7	5.1	5.6	6.3
Non-Permanent Funds	6,104,638,763	28.1	0.9	1.6	5.5	5.5	3.1	2.5	2.1	3.1

Asset Class Performance									
	Allocation		Performance (%)						
	Market Value (\$M)	%	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	
All Cap US Equity	1,655	7.6	8.5	10.3	30.4	13.4	10.4	N/A	
All Cap Custom Index			9.1	10.4	31.0	14.6	11.2	13.4	
Difference			-0.6	-0.1	-0.6	-1.2	-0.8	N/A	
Small Cap US Equity	451	2.1	9.9	7.4	25.4	4.4	6.1	N/A	
Russell 2000 Index			9.9	7.3	25.5	8.6	8.2	11.8	
Difference			0.0	0.1	-0.1	-4.2	-2.1	N/A	
Int'l Equity	2,120	9.7	9.2	7.5	23.3	10.4	5.8	5.2	
Int'l Equity Custom Index			8.9	7.0	21.5	9.9	5.5	4.8	
Difference			0.3	0.5	1.8	0.5	0.3	0.4	
Hybrid Assets	1,111	5.1	-0.1	-3.5	11.0	N/A	N/A	N/A	
Core Real Estate	1,011	4.7	1.4	2.5	2.7	5.8	7.6	10.1	
NCREIF ODCE Index (AWA)			1.3	2.4	4.4	6.1	8.0	10.4	
Difference			0.1	0.1	-1.7	-0.3	-0.4	-0.3	
Diversified Hedge Funds	762	3.5	1.7	2.0	4.1	2.7	1.4	3.6	
HFRI FOF Comp Index			3.1	2.1	8.4	3.9	2.4	2.8	
Difference			-1.4	-0.1	-4.3	-1.2	-1.0	0.8	
Core Fixed Income	4,817	22.2	0.0	2.5	8.0	4.0	3.1	N/A	
BB US Agg Bond Index			0.2	2.5	8.7	4.0	3.0	3.7	
Difference			-0.2	0.0	-0.7	0.0	0.1	N/A	
Opportunistic Fixed Income	109	0.5	1.5	2.8	6.6	6.8	6.7	N/A	
CS Western Euro Hi Yld Index			2.5	4.6	14.4	7.1	6.8	8.4	
Difference			-1.0	-1.8	-7.8	-0.3	-0.1	N/A	
Bank Loans	1,241	5.7	1.7	N/A	N/A	N/A	N/A	N/A	
S&P/LSTA Lvg'd Loan Index			1.7	2.7	8.6	4.3	4.4	5.0	
Difference			0.0	N/A	N/A	N/A	N/A	N/A	
EMD	206	0.9	5.5	4.1	13.0	6.0	1.7	N/A	
JPM GBI-EM Gbl Dv'd Index			5.2	4.4	13.5	7.0	2.8	2.7	
Difference			0.3	-0.3	-0.5	-1.0	-1.1	N/A	
Long Duration Fixed Income	807	3.7	-1.6	5.0	19.1	N/A	N/A	N/A	
BB US Gov't Crdt LT Bond Index			-1.1	5.4	19.6	8.1	5.4	7.6	
Difference			-0.5	-0.4	-0.5	N/A	N/A	N/A	

Market Value by Investment Pool		
	Market Value (\$)	Allocation (%)
Permanent Mineral Trust	8,141,125,014	37.4
Common School Permanent Land Fund	4,246,720,218	19.5
Permanent Land Fund	205,243,513	0.9
University Permanent Land Fund	27,304,463	0.1
Hathaway Scholarship	612,561,441	2.8
Higher Education	122,927,546	0.6
Workers Compensation Fund	2,280,293,556	10.5
Pool A	243,980,926	1.1
State Agency Pool	4,337,195,941	19.9
LSRA	1,523,461,896	7.0

Schedule of Inv. Assets - Total Fund Ex Public Purpose Investments					
Period Ending	Beginning MV (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending MV (\$)	% Return
FYTD	21,114,239,217	-333,978,147	692,424,981	21,472,686,052	3.3

Asset Class Performance (Cont.)									
	Allocation		Performance (%)						
	Market Value (\$M)	%	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	
Laddered Treasury	3,888	17.9	0.5	N/A	N/A	N/A	N/A	N/A	
Low Duration Fixed Income	501	2.3	0.9	1.4	4.0	N/A	N/A	N/A	
Low Duration FI Custom Index			0.5	1.1	3.8	2.1	1.6	1.5	
Difference			0.4	0.3	0.2	N/A	N/A	N/A	
Cash Equivalents	1,934	8.9	0.5	1.1	2.4	1.7	1.1	0.7	
JPM Cash Custom Index			0.5	1.0	2.5	1.7	1.1	0.8	
Difference			0.0	0.1	-0.1	0.0	0.0	-0.1	
Public Purpose Investments	268	1.2	N/A	N/A	N/A	N/A	N/A	N/A	

Performance shown is net of fees and excludes Public Purpose Investments. Pooled investment performance and market values shown reflect State Agency participation and are calculated on a capital-weighted basis using beginning-period allocations. Hybrid Assets includes preferred stock and MLPs. Performance for Private Equity and Non-Core Real Estate is calculated on an IRR basis.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Permanent Funds	15,636,175,751	71.9	2.9	4.1	12.5	12.5	6.7	5.1	5.6	6.3	6.1	07/01/2002
Permanent Mineral Trust	8,141,125,014	37.4	3.5	4.3	12.5	12.5	6.7	5.2	5.8	6.4	6.1	06/01/2001
Permanent Mineral Trust - Actual Allocation Index			3.5	4.1	12.8	12.8	6.9	5.2	5.9	6.2	5.5	
Difference			0.0	0.2	-0.3	-0.3	-0.2	0.0	-0.1	0.2	0.6	
Common School Permanent Land Fund	4,246,720,218	19.5	2.5	3.5	11.8	11.8	6.5	5.1	5.8	6.5	6.3	06/01/2001
Common School - Actual Allocation Index			2.4	3.3	11.9	11.9	6.5	5.1	5.9	6.2	5.5	
Difference			0.1	0.2	-0.1	-0.1	0.0	0.0	-0.1	0.3	0.8	
Permanent Land Fund	205,243,513	0.9	3.4	4.2	12.1	12.1	6.6	5.1	5.7	6.3	5.4	02/01/2006
Permanent Land Fund - Actual Allocation Index			3.5	4.1	12.5	12.5	6.7	5.1	5.8	6.1	5.1	
Difference			-0.1	0.1	-0.4	-0.4	-0.1	0.0	-0.1	0.2	0.3	
University Permanent Land Fund	27,304,463	0.1	3.1	4.3	13.0	13.0	7.3	5.5	6.1	6.5	5.4	05/01/2006
University PLF - Actual Allocation Index			3.0	4.0	13.4	13.4	7.4	5.6	6.3	6.4	5.3	
Difference			0.1	0.3	-0.4	-0.4	-0.1	-0.1	-0.2	0.1	0.1	
Hathaway Scholarship	612,561,441	2.8	3.5	4.2	12.5	12.5	6.3	4.8	5.2	5.9	5.4	09/01/2007
Hathaway Scholarship - Actual Allocation Index			3.3	3.9	12.6	12.6	6.4	4.9	5.4	5.8	5.2	
Difference			0.2	0.3	-0.1	-0.1	-0.1	-0.1	-0.2	0.1	0.2	
Higher Education	122,927,546	0.6	2.4	3.5	12.0	12.0	6.0	4.6	5.1	5.8	5.3	09/01/2007
Higher Education - Actual Allocation Index			2.3	3.2	12.1	12.1	6.1	4.7	5.2	5.7	5.1	
Difference			0.1	0.3	-0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.2	
Workers Compensation Fund	2,280,293,556	10.5	1.3	4.4	13.7	13.7	6.7	4.9	4.8	5.5	5.7	06/01/2001
Workers Compensation - Actual Allocation Index			1.4	4.3	14.1	14.1	6.7	4.9	5.0	5.4	5.4	
Difference			-0.1	0.1	-0.4	-0.4	0.0	0.0	-0.2	0.1	0.3	
Non-Permanent Funds	6,104,638,763	28.1	0.9	1.6	5.5	5.5	3.1	2.5	2.1	3.1	3.8	07/01/2002
Pool A	243,980,926	1.1	1.6	2.9	8.7	8.7	4.1	3.2	2.6	3.9	4.3	01/01/2000
Pool A - Actual Allocation Index			1.6	2.6	9.2	9.2	3.8	2.9	2.7	3.7	5.0	
Difference			0.0	0.3	-0.5	-0.5	0.3	0.3	-0.1	0.2	-0.7	
LSRA	1,523,461,896	7.0	2.0	2.5	N/A	N/A	N/A	N/A	N/A	N/A	2.5	07/01/2019
LSRA - Actual Allocation Index			2.2	2.5	N/A	N/A	N/A	N/A	N/A	N/A	2.5	
Difference			-0.2	0.0	N/A	N/A	N/A	N/A	N/A	N/A	0.0	
State Agency Pool	4,337,195,941	19.9	0.4	1.2	5.0	5.0	3.0	2.4	2.0	3.1	3.9	06/01/2001
State Agency Pool - Actual Allocation Index			0.4	1.1	5.4	5.4	2.8	2.2	2.1	3.0	3.8	
Difference			0.0	0.1	-0.4	-0.4	0.2	0.2	-0.1	0.1	0.1	
Total Fund	21,740,814,514	100.0	2.3	3.3	10.4	10.4	5.8	4.4	4.6	5.3	5.5	10/01/1996
Wyoming State Custom Index			2.3	3.3	10.8	10.8	5.6	4.3	4.7	5.2	5.4	
Difference			0.0	0.0	-0.4	-0.4	0.2	0.1	-0.1	0.1	0.1	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th.

Wyoming State Treasurer's Office
Asset Allocation & Performance

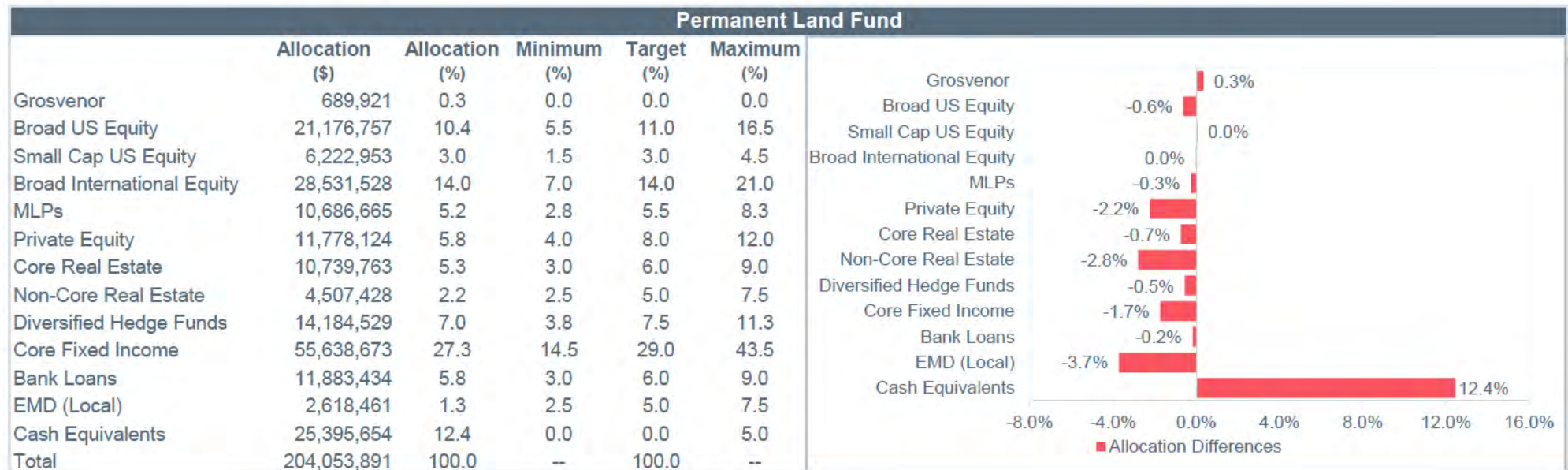
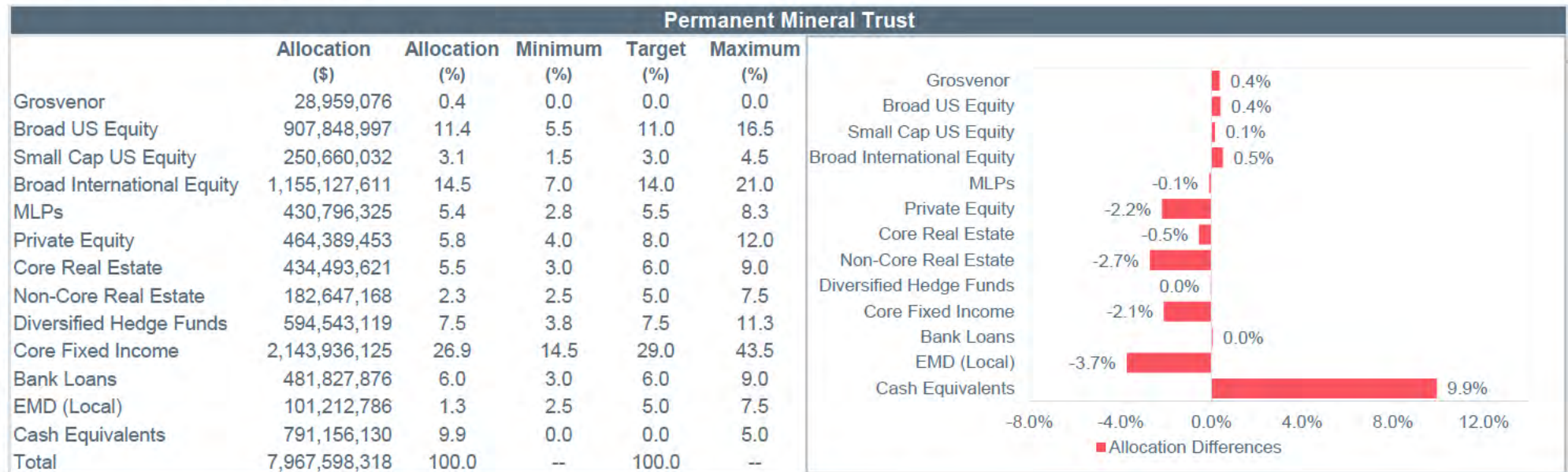
As of December 31, 2019

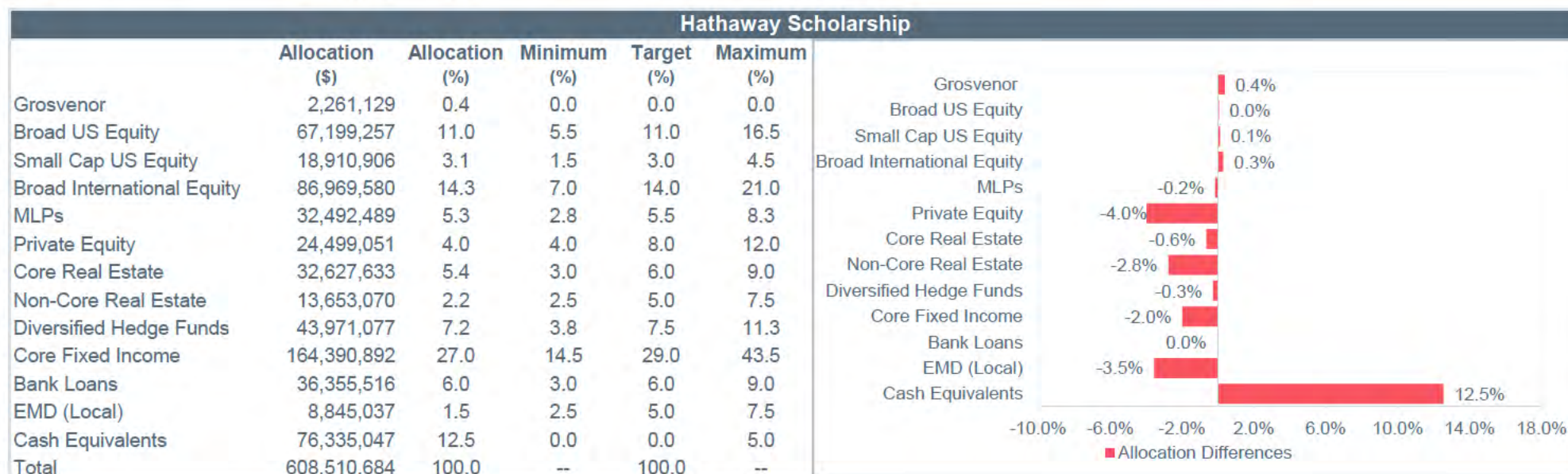
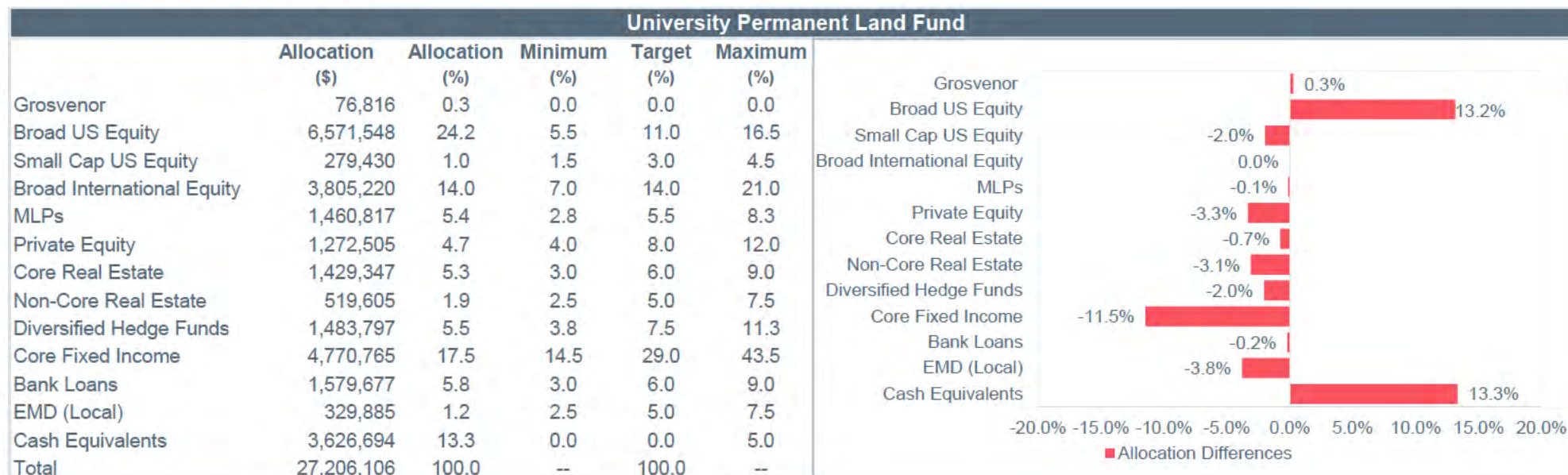
	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Permanent Funds	15,636,175,751	2.9	4.1	12.5	12.5	6.7	5.1	5.6	6.3	6.1	07/01/2002
Permanent Mineral Trust	8,141,125,014	3.5	4.3	12.5	12.5	6.7	5.2	5.8	6.4	6.1	06/01/2001
Permanent Mineral Trust - Target Allocation Index		3.7	4.3	13.8	13.8	7.2	5.7	6.3	6.8	N/A	
Difference		-0.2	0.0	-1.3	-1.3	-0.5	-0.5	-0.5	-0.4	N/A	
Common School Permanent Land Fund	4,246,720,218	2.5	3.5	11.8	11.8	6.5	5.1	5.8	6.5	6.3	06/01/2001
Common School - Target Allocation Index		2.5	3.2	12.0	12.0	6.2	5.0	5.9	6.4	N/A	
Difference		0.0	0.3	-0.2	-0.2	0.3	0.1	-0.1	0.1	N/A	
Permanent Land Fund	205,243,513	3.4	4.2	12.1	12.1	6.6	5.1	5.7	6.3	5.4	02/01/2006
Permanent Land Fund - Target Allocation Index		3.7	4.3	13.8	13.8	7.2	5.7	6.3	6.7	N/A	
Difference		-0.3	-0.1	-1.7	-1.7	-0.6	-0.6	-0.6	-0.4	N/A	
University Permanent Land Fund	27,304,463	3.1	4.3	13.0	13.0	7.3	5.5	6.1	6.5	5.4	05/01/2006
University PLF - Target Allocation Index		3.7	4.3	13.8	13.8	7.2	5.7	6.3	6.7	N/A	
Difference		-0.6	0.0	-0.8	-0.8	0.1	-0.2	-0.2	-0.2	N/A	
Hathaway Scholarship	612,561,441	3.5	4.2	12.5	12.5	6.3	4.8	5.2	5.9	5.4	09/01/2007
Hathaway Scholarship - Target Allocation Index		3.7	4.3	13.8	13.8	7.2	5.5	6.0	6.5	N/A	
Difference		-0.2	-0.1	-1.3	-1.3	-0.9	-0.7	-0.8	-0.6	N/A	
Higher Education	122,927,546	2.4	3.5	12.0	12.0	6.0	4.6	5.1	5.8	5.3	09/01/2007
Higher Education - Target Allocation Index		2.5	3.2	12.0	12.0	6.2	4.9	5.5	6.2	N/A	
Difference		-0.1	0.3	0.0	0.0	-0.2	-0.3	-0.4	-0.4	N/A	
Workers Compensation Fund	2,280,293,556	1.3	4.4	13.7	13.7	6.7	4.9	4.8	5.5	5.7	06/01/2001
Workers Compensation - Target Allocation Index		1.7	4.5	15.6	15.6	6.9	5.1	5.2	5.7	N/A	
Difference		-0.4	-0.1	-1.9	-1.9	-0.2	-0.2	-0.4	-0.2	N/A	
Non-Permanent Funds	6,104,638,763	0.9	1.6	5.5	5.5	3.1	2.5	2.1	3.1	3.8	07/01/2002
Pool A	243,980,926	1.6	2.9	8.7	8.7	4.1	3.2	2.6	3.9	4.3	01/01/2000
Pool A - Target Allocation Index		1.8	3.1	12.0	12.0	4.7	3.5	3.1	4.1	N/A	
Difference		-0.2	-0.2	-3.3	-3.3	-0.6	-0.3	-0.5	-0.2	N/A	
LSRA	1,523,461,896	2.0	2.5	N/A	N/A	N/A	N/A	N/A	N/A	2.5	07/01/2019
State Agency Pool	4,337,195,941	0.4	1.2	5.0	5.0	3.0	2.4	2.0	3.1	3.9	06/01/2001

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th.

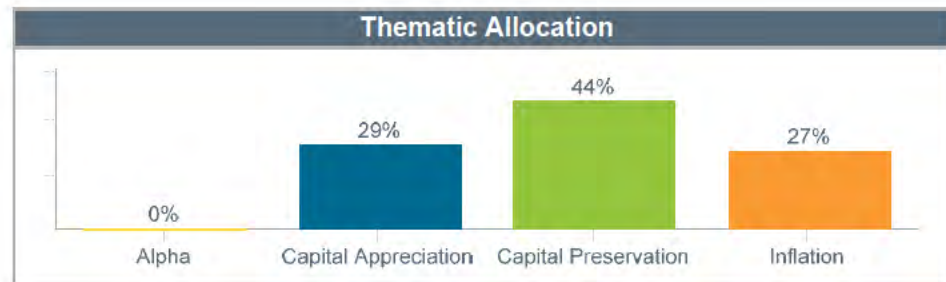
Investment Profile					Long-Term Target Allocation								
<p>Fund Type: Permanent Fund</p> <p>Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity.</p> <p>Primary Investment Goals: Capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals.</p> <p>Maximum Equity Allocation: 70%</p> <p>Current Long-Term Target Equity Allocation: 60%</p> <p>Spending Policy</p> <ul style="list-style-type: none">• Permanent Mineral Trust Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2023, the spending rate will be 4.75%. In fiscal year 2024 and thereafter, the spending rate will be 4.5%.• Hathaway Scholarship: The amount necessary to fully fund scholarships awarded under W.S. 21-16-1301 <i>et seq.</i>					Minimum Range (%)	Target (%)	Maximum Range (%)						
					Permanent Mineral Trust	-	100.00	-					
					Broad US Equity	5.50	11.00	16.50					
					Small Cap US Equity	1.50	3.00	4.50					
					International Equity	7.00	14.00	21.00					
					MLPs	2.75	5.50	8.25					
					Private Equity	4.00	8.00	12.00					
					Core Real Estate	3.00	6.00	9.00					
					Non-Core Real Estate	2.50	5.00	7.50					
					Diversified Hedge Funds	3.75	7.50	11.25					
					Core Fixed Income	14.50	29.00	43.50					
					Bank Loans	3.00	6.00	9.00					
					Opportunistic Fixed Income	0.00	0.00	5.00					
					EMD	2.50	5.00	7.50					
					Cash (inv. in SAP)	0.00	0.00	5.00					
Thematic Allocation					Risk Metrics								
					5 Years				10 Years				
					PMTF	PLF	UPLF	Hath	PMTF	PLF	UPLF	Hath	
					Sharpe Ratio	0.9	0.9	0.9	0.9	1.0	1.1	1.1	1.1
					Standard Deviation	4.5	4.3	4.8	4.3	5.5	5.4	5.5	5.0
					Beta	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Comparative Performance													
Allocation					Performance (%)								
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years				
Permanent Mineral Trust	8,141,125,014	3.5	4.3	12.5	12.5	6.7	5.2	5.8	6.4				
PMTF Actual Allocation Index		3.5	4.1	12.8	12.8	6.9	5.2	5.9	6.2				
Difference		0.0	0.2	-0.3	-0.3	-0.2	0.0	-0.1	0.2				
Permanent Land Fund	205,243,513	3.4	4.2	12.1	12.1	6.6	5.1	5.7	6.3				
PLF Actual Allocation Index		3.5	4.1	12.5	12.5	6.7	5.1	5.8	6.1				
Difference		-0.1	0.1	-0.4	-0.4	-0.1	0.0	-0.1	0.2				
University Permanent Land Fund	27,304,463	3.1	4.3	13.0	13.0	7.3	5.5	6.1	6.5				
UPLF Actual Allocation Index		3.0	4.0	13.4	13.4	7.4	5.6	6.3	6.4				
Difference		0.1	0.3	-0.4	-0.4	-0.1	-0.1	-0.2	0.1				
Hathaway Scholarship	612,561,441	3.5	4.2	12.5	12.5	6.3	4.8	5.2	5.9				
Hathaway Actual Allocation Index		3.3	3.9	12.6	12.6	6.4	4.9	5.4	5.8				
Difference		0.2	0.3	-0.1	-0.1	-0.1	-0.1	-0.2	0.1				

Performance shown is net of fees and annualized for periods greater than one year. Wyoming State Treasurer's Office fiscal year ends on June 30th. Beta is calculated relative to the MSCI ACW Index (Net). Calculations are based on quarterly periodicity. Allocations shown may not sum up to 100% exactly due to rounding. Thematic Allocation shown represents the Permanent Mineral Trust.





Investment Profile
Fund Type: Permanent Fund Main Objective: Produce maximized long-term investment income and capital gains while providing an appropriate level of safety and liquidity. Primary Investment Goals: Income generation, capital appreciation, total return, and protection against inflation. Capital preservation and liquidity are important secondary goals. Maximum Equity Allocation: 70% Current Long-Term Target Equity Allocation: 44%
Spending Policy <ul style="list-style-type: none"> • Common School Permanent Land Fund: 5% of the five-year trailing average market value, calculated on the first day of the fiscal year. In fiscal year 2025, the spending rate will be 4.75%. In fiscal year 2026 and thereafter, the spending rate will be 4.5%. • Higher Education: 4.75% of the five-year trailing average market value, calculated on the first day of the fiscal year.

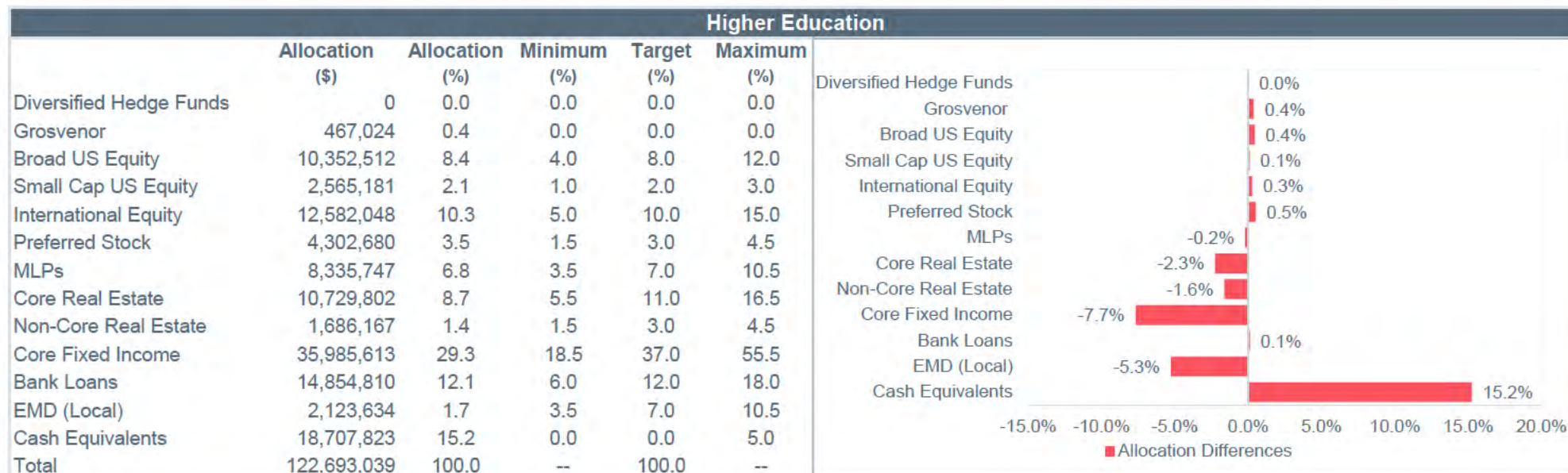
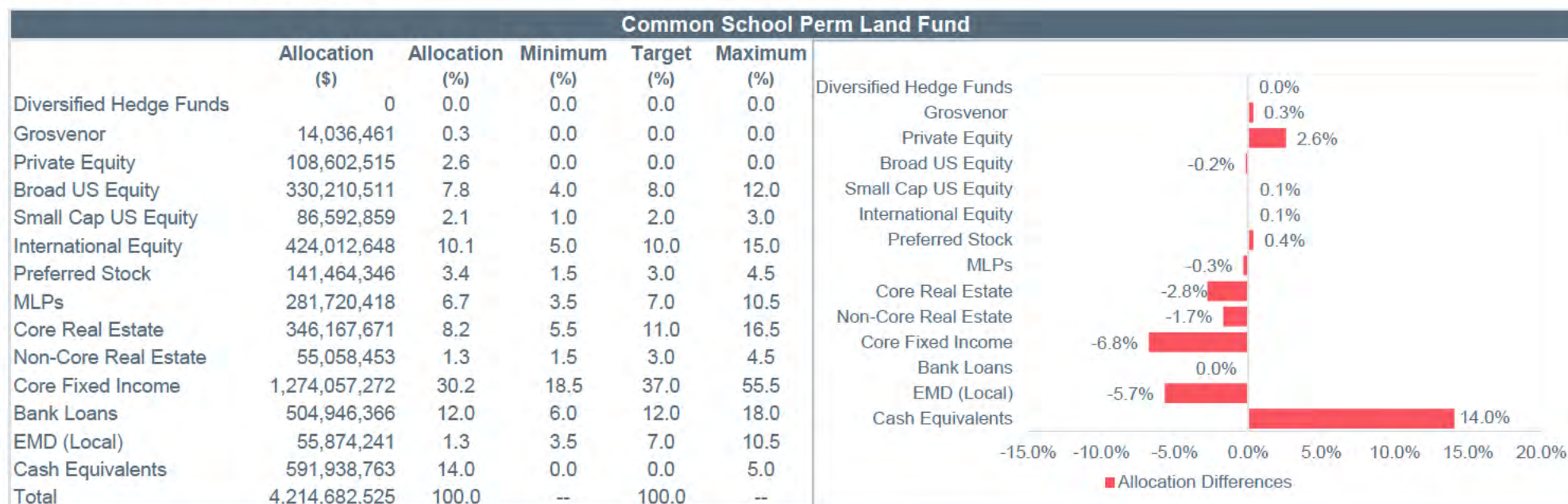


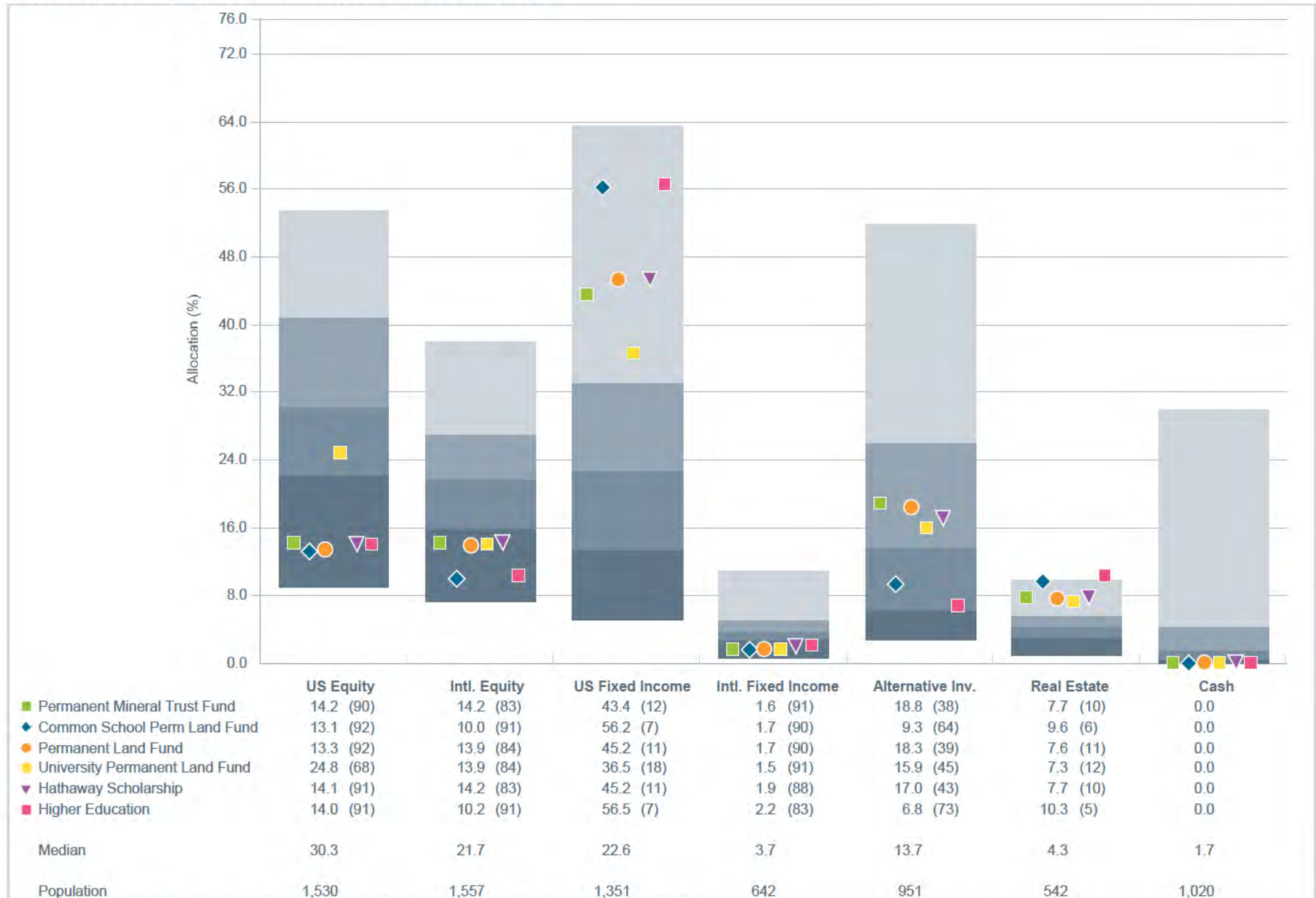
Long-Term Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Common School PLF	-	100.00	-
Broad US Equity	4.00	8.00	12.00
Small Cap US Equity	1.00	2.00	3.00
International Equity	5.00	10.00	15.00
Preferred Stock	1.50	3.00	4.50
MLPs	3.50	7.00	10.50
Core Real Estate	5.50	11.00	16.50
Non-Core Real Estate	1.50	3.00	4.50
Core Fixed Income	18.50	37.00	55.50
Bank Loans	6.00	12.00	18.00
Opportunistic Fixed Income	0.00	0.00	5.00
EMD	3.50	7.00	10.50
Cash (inv. in SAP)	0.00	0.00	5.00

Risk Metrics				
	5 Years		10 Years	
	CSPLF	HiEd	CSPLF	HiEd
Sharpe Ratio	0.9	0.8	1.1	1.0
Standard Deviation	4.3	4.3	5.6	5.0
Beta	0.4	0.4	0.4	0.4

Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Common School Perm Land Fund	4,246,720,218	2.5	3.5	11.8	11.8	6.5	5.1	5.8	6.5
CSPLF - Actual Allocation Index		2.4	3.3	11.9	11.9	6.5	5.1	5.9	6.2
Difference		0.1	0.2	-0.1	-0.1	0.0	0.0	-0.1	0.3
Higher Education	122,927,546	2.4	3.5	12.0	12.0	6.0	4.6	5.1	5.8
Higher Education - Actual Allocation Index		2.3	3.2	12.1	12.1	6.1	4.7	5.2	5.7
Difference		0.1	0.3	-0.1	-0.1	-0.1	-0.1	-0.1	0.1

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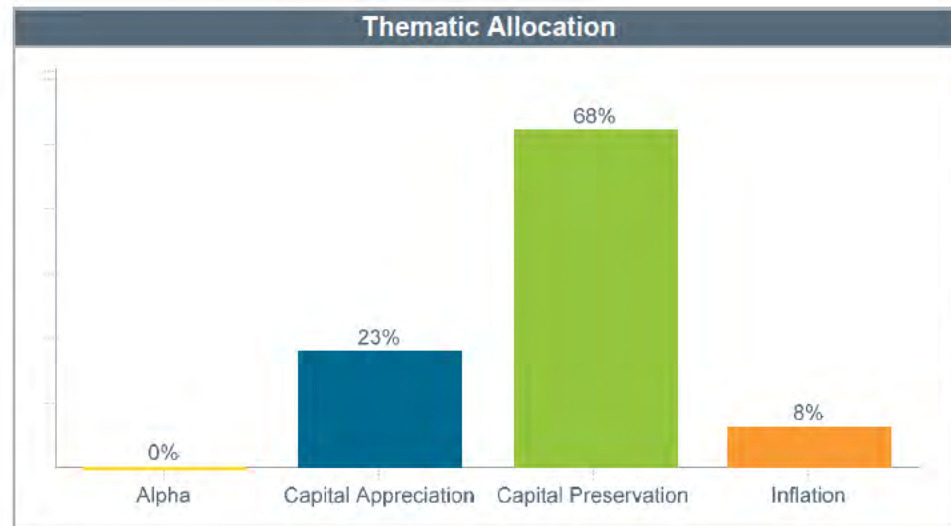




Parentheses contain percentile ranks. US Fixed Income allocation shown includes Convertibles and Cash (inv. in SAP).

Investment Profile
Fund Type: Permanent Fund
Main Objective: Provide a return that assures the Workers' Compensation Fund will be self-funding or nearly self-funding in order to substantially reduce or eliminate the need for employer contributions.
Primary Investment Goals: Long-term return, safety of capital, yield and capital appreciation.
Maximum Equity Allocation: 70%
Current Long-Term Target Equity Allocation: 38%
Actuarial Discount Rate: 3.5%*
Funded Status: >100%*
Duration of Liabilities: 11.6 years*
*As of the most recent report.

Long-Term Target Allocation			
	Minimum Range (%)	Target (%)	Maximum Range (%)
Workers Compensation Fund	-	100.00	-
Broad US Equity	4.00	8.00	12.00
Small Cap US Equity	1.00	2.00	3.00
International Equity	5.00	10.00	15.00
MLPs	2.25	4.50	6.75
Core Real Estate	2.25	4.50	6.75
Non-Core Real Estate	2.00	4.00	6.00
Liability Driven Fixed Income	31.00	62.00	93.00
Opportunistic Fixed Income	0.00	0.00	5.00
EMD	2.50	5.00	7.50
Cash (inv. in SAP)	0.00	0.00	5.00



Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	11.9	5.9
Avg. Quality	Aa3	Aa1/Aa2
Yield To Maturity (%)	2.9	2.3
Coupon Rate (%)	3.6	3.2

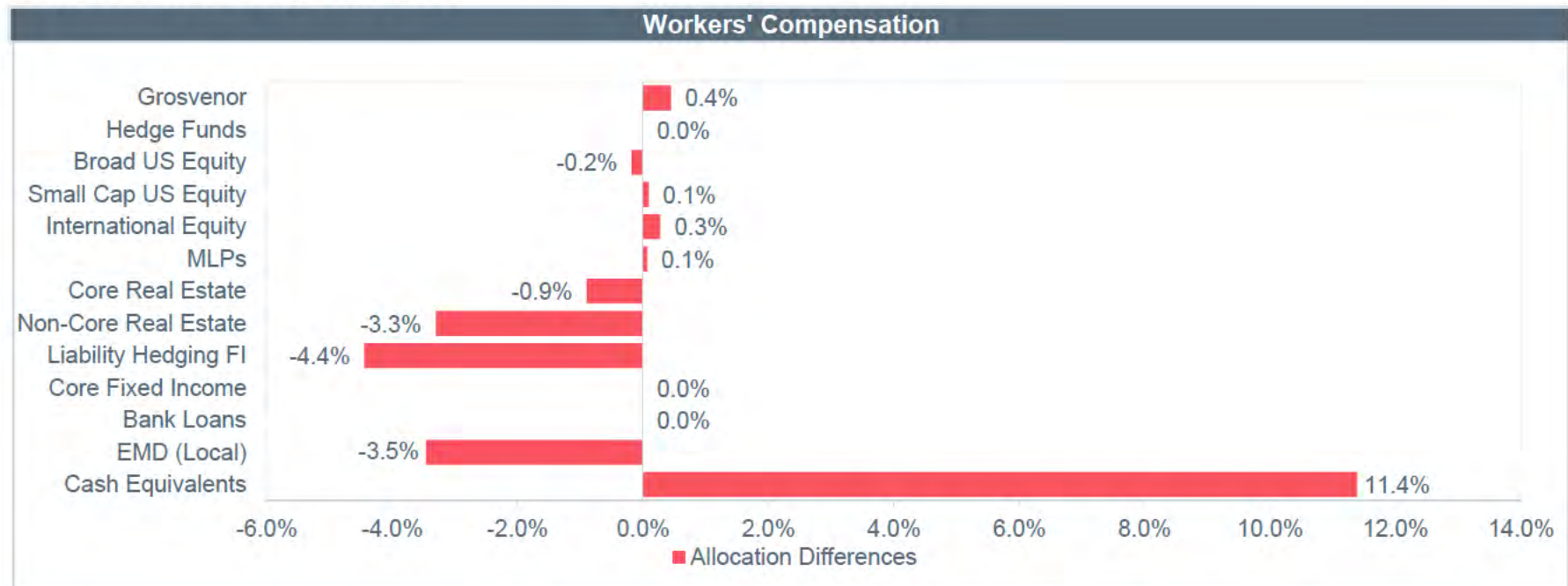
Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	1.1	1.3
Standard Deviation	3.5	3.8
Beta	0.2	0.2

Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Workers' Compensation Fund	2,280,293,556	1.3	4.4	13.7	13.7	6.7	4.9	4.8	5.5
WC - Actual Allocation Index		1.4	4.3	14.1	14.1	6.7	4.9	5.0	5.4
Difference		-0.1	0.1	-0.4	-0.4	0.0	0.0	-0.2	0.1

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Wyoming State Treasurer's Office
Permanent Funds - Workers' Compensation Fund
Asset Allocation vs. Long-Term Target

As of December 31, 2019



	Market Value	Allocation	Minimum	Target	Maximum
	(\$)	(%)	(%)	(%)	(%)
Grosvenor	10,180,327	0.4	0.0	0.0	0.0
Hedge Funds	0	0.0	0.0	0.0	0.0
Broad US Equity	178,187,800	7.8	4.0	8.0	12.0
Small Cap US Equity	47,694,549	2.1	1.0	2.0	3.0
International Equity	234,123,413	10.3	5.0	10.0	15.0
MLPs	104,057,662	4.6	2.3	4.5	6.8
Core Real Estate	82,141,903	3.6	2.3	4.5	6.8
Non-Core Real Estate	15,935,426	0.7	2.0	4.0	6.0
Liability Hedging FI	1,311,399,492	57.6	31.0	62.0	93.0
Core Fixed Income	0	0.0	0.0	0.0	0.0
Bank Loans	0	0.0	0.0	0.0	0.0
EMD (Local)	35,173,969	1.5	2.5	5.0	7.5
Cash Equivalents	259,448,107	11.4	0.0	0.0	5.0
Total	2,278,342,649	100.0	--	100.0	--

Market values were provided by the Treasurer's Office and may differ from the rest of the report.

Investment Profile

Fund Type: Non-Permanent Fund

Main Objective: Provide a diverse array of securities including equities, while maintaining adequate liquidity, stability, and return on investment.

Primary Investment Goal: Pool A is intended to be moderately liquid and safely invested but also be invested for return and growth.

Maximum Equity Allocation: 60%

Current Target Equity Allocation: 36%

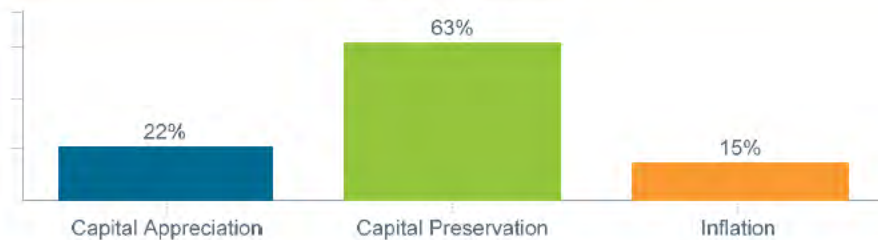
Participating Funds:

- Tobacco Settlement Trust Fund
- Wildlife and Natural Resource Trust Account
- Cultural Trust Fund
- Public Television Matching Fund Account
- Game and Fish Fund Trust Account

Risk Metrics

	5 Years	10 Years
Sharpe Ratio	0.8	1.2
Standard Deviation	2.7	2.8
Beta	0.1	0.0

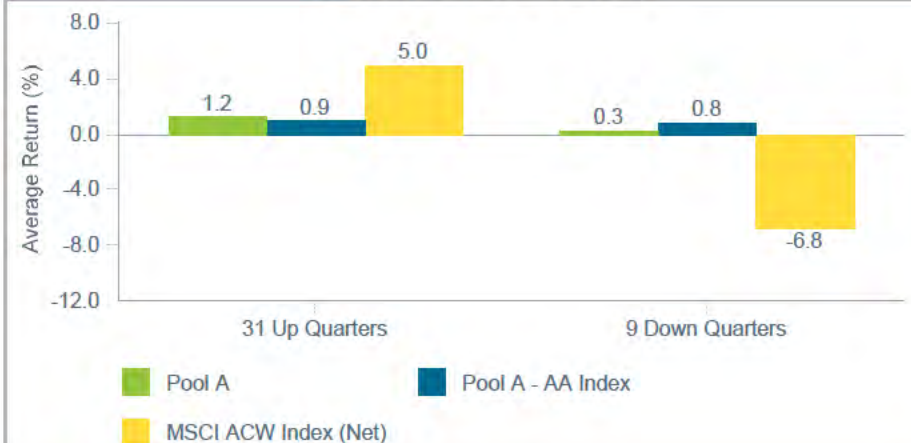
Thematic Allocation



Long-Term Target Allocation

	Minimum Range (%)	Target (%)	Maximum Range (%)
Pool A	-	100.00	-
Broad US Equity	3.75	7.50	11.25
Small Cap US Equity	0.50	1.00	1.50
International Equity	3.75	7.50	11.25
Preferred Stock	3.50	7.00	10.50
MLPs	2.50	5.00	7.50
Non-Core Real Estate	4.00	8.00	12.00
Core Fixed Income	24.50	49.00	73.50
Bank Loans	5.00	10.00	15.00
Cash (inv. in SAP)	2.50	5.00	7.50

Up/Down Markets - 10 Years



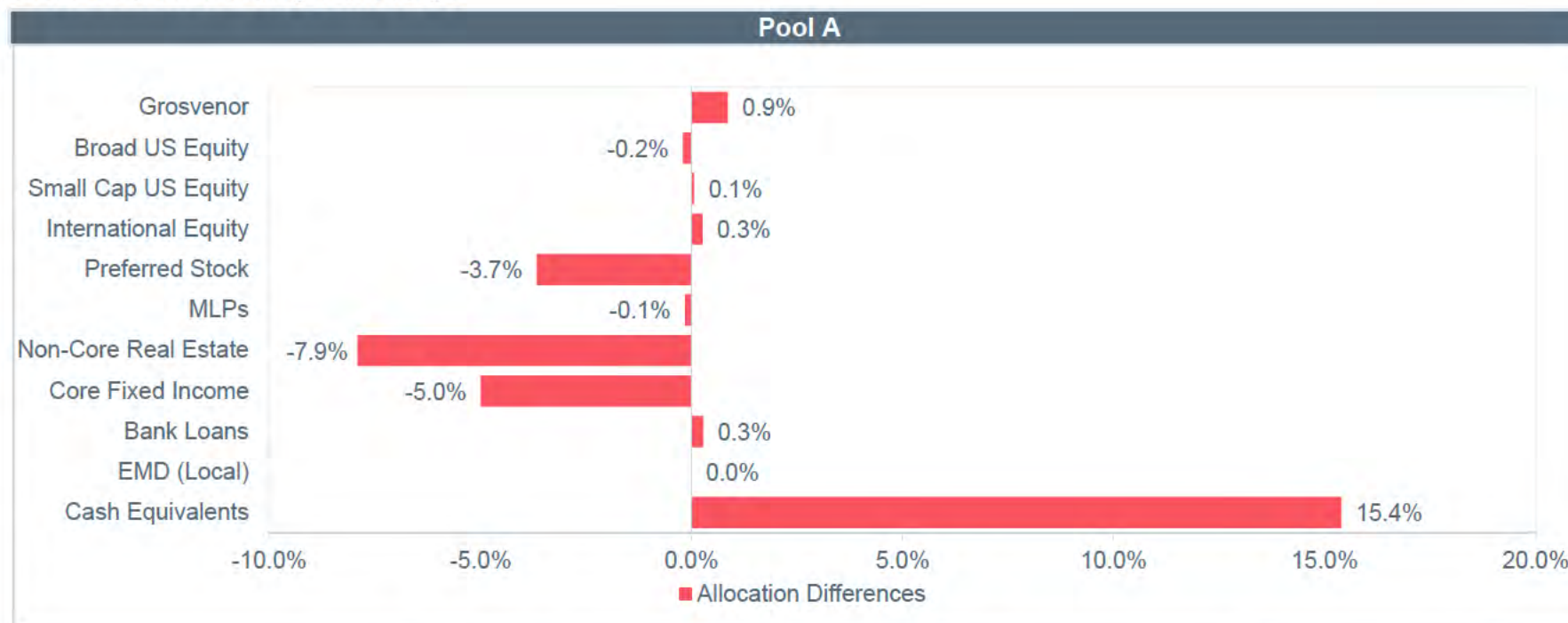
Comparative Performance

	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Pool A	243,980,926	1.6	2.9	8.7	8.7	4.1	3.2	2.6	3.9
Pool A - Actual Allocation Index		1.6	2.6	9.2	9.2	3.8	2.9	2.7	3.7
Difference		0.0	0.3	-0.5	-0.5	0.3	0.3	-0.1	0.2

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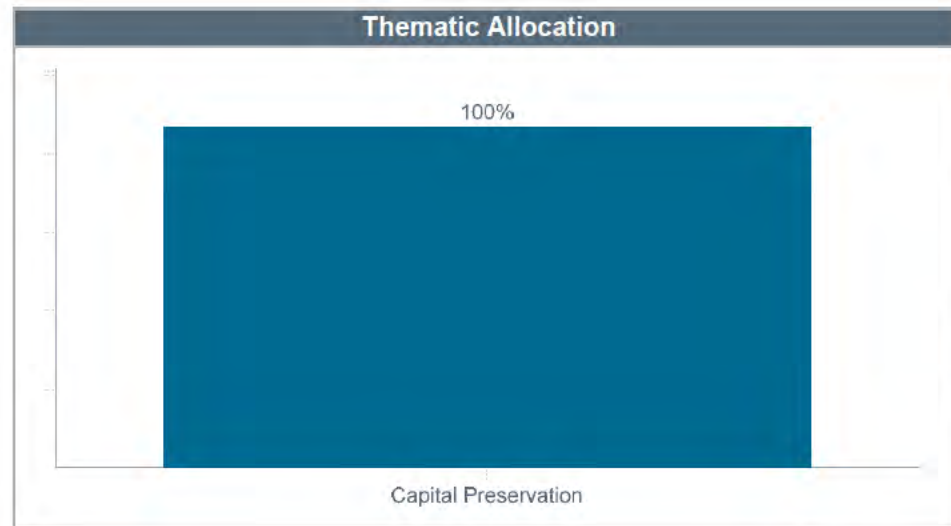
Pool A

Asset Allocation vs. Long-Term Target



	Market Value	Allocation	Minimum	Target	Maximum
	(\$)	(%)	(%)	(%)	(%)
Grosvenor	2,116,720	0.9	0.0	0.0	0.0
Broad US Equity	17,820,697	7.3	3.8	7.5	11.3
Small Cap US Equity	2,602,042	1.1	0.5	1.0	1.5
International Equity	18,953,683	7.8	3.8	7.5	11.3
Preferred Stock	8,152,322	3.3	3.5	7.0	10.5
MLPs	11,847,393	4.9	2.5	5.0	7.5
Non-Core Real Estate	226,137	0.1	4.0	8.0	12.0
Core Fixed Income	107,365,779	44.0	24.5	49.0	73.5
Bank Loans	25,083,970	10.3	5.0	10.0	15.0
EMD (Local)	0	0.0	0.0	0.0	0.0
Cash Equivalents	49,769,687	20.4	2.5	5.0	7.5
Total	243,938,431	100.0	--	100.0	--

Investment Profile
Fund Type: Non-Permanent Fund Main Objective: Produce an investment return so that State agencies have the advantage of better income from their invested funds, while maintaining stability. Primary Investment Goal: Capital preservation, yield, and liquidity Liquidity Constraints: The Fund must meet the day-to-day cash flow needs of the State Maximum Equity Allocation: 0% Current Target Equity Allocation: 0%



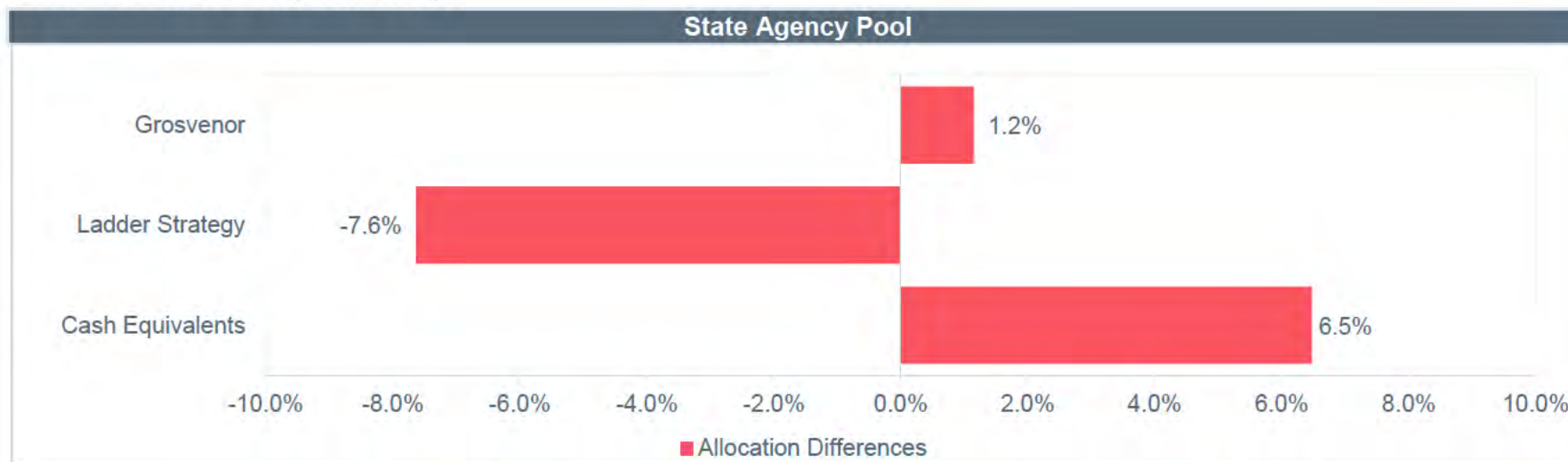
Long-Term Target Allocation			
	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
State Agency Pool Excluding PPI	-	100.00	-
Laddered Short-Term Treasury	100.00	100.00	100.00
Core Fixed Income	0.00	0.00	0.00
Low Duration Fixed Income	0.00	0.00	0.00
Bank Loans	0.00	0.00	0.00
Opportunistic Fixed Income	0.00	0.00	0.00
EMD	0.00	0.00	0.00
Cash Equivalents	0.00	0.00	0.00

Fixed Income Characteristics vs. BB US Agg Bond Index		
	Portfolio	Benchmark
Effective Duration	2.0	5.9
Avg. Quality	Aaa	Aa1/Aa2
Yield To Maturity (%)	1.6	2.3
Coupon Rate (%)	1.4	3.2

Risk Metrics		
	5 Years	10 Years
Sharpe Ratio	0.6	1.1
Standard Deviation	2.1	2.2
Beta	0.1	0.0

Comparative Performance									
	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
State Agency Pool	4,337,195,941	0.4	1.2	5.0	5.0	3.0	2.4	2.0	3.1
State Agency Pool - Actual Allocation Index		0.4	1.1	5.4	5.4	2.8	2.2	2.1	3.0
Difference		0.0	0.1	-0.4	-0.4	0.2	0.2	-0.1	0.1

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	Market Value (\$)	Allocation (%)	Minimum (%)	Target (%)	Maximum (%)
Grosvenor	48,455,720	1.2	0.0	0.0	0.0
Ladder Strategy	3,887,791,688	92.4	100.0	100.0	100.0
Cash Equivalents	272,624,934	6.5	0.0	0.0	0.0
Total	4,208,872,342	100.0	--	100.0	--

Investment Profile

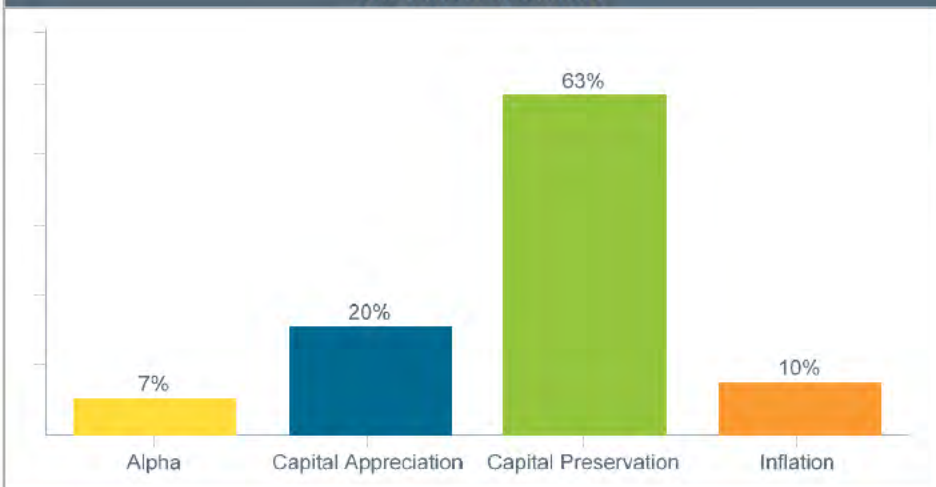
Fund Type: Non-Permanent Fund
Main Objective: LSRA will be invested to obtain the highest possible return while seeking to preserve the balance necessary to address potential budget shortfalls or a budget deficit.
Primary Investment Goal: liquidity, capital preservation, and capital appreciation.
Maximum Equity Allocation: 36%
Current Target Equity Allocation: 29.17%
Spending Policy: Legislative Appropriation
Participating Funds:

- Long Term Reserve
- Intermediate Term Reserve
- Short Term Reserve

Long-Term Target Allocation

	Minimum Range (%)	Target (%)	Maximum Range (%)
LSRA Long Term Reserve	-	100.00	-
Broad US Equity	17.00	22.00	27.00
Small Cap US Equity	4.00	6.00	8.00
International Equity	21.00	28.00	35.00
Bank Loans	10.00	12.50	15.00
MLPs	10.00	12.50	15.00
Diversified Hedge Funds	15.00	19.00	23.00
Cash (inv. in SAP)	0.00	0.00	0.00

Thematic Allocation



Risk Metrics

	Since Incep.	Inception Date
Standard Deviation	0.8	07/01/2019
Beta	0.2	
Sharpe Ratio	0.9	

Comparative Performance

	Allocation	Performance (%)							
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years
LSRA	1,523,461,896	2.0	2.5	N/A	N/A	N/A	N/A	N/A	N/A
LSRA - Actual Allocation Index		2.2	2.5	N/A	N/A	N/A	N/A	N/A	N/A
Difference		-0.2	0.0	N/A	N/A	N/A	N/A	N/A	N/A

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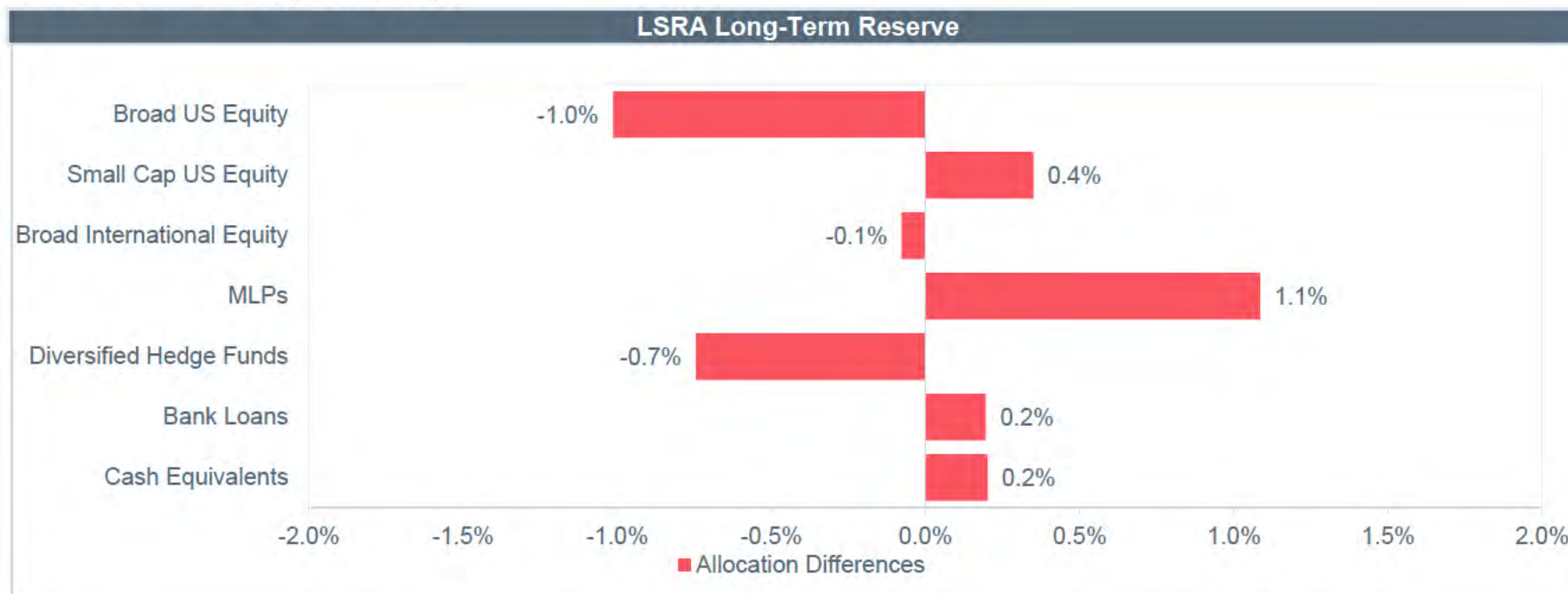
Total LSRA

Asset Allocation vs. Long-Term Target

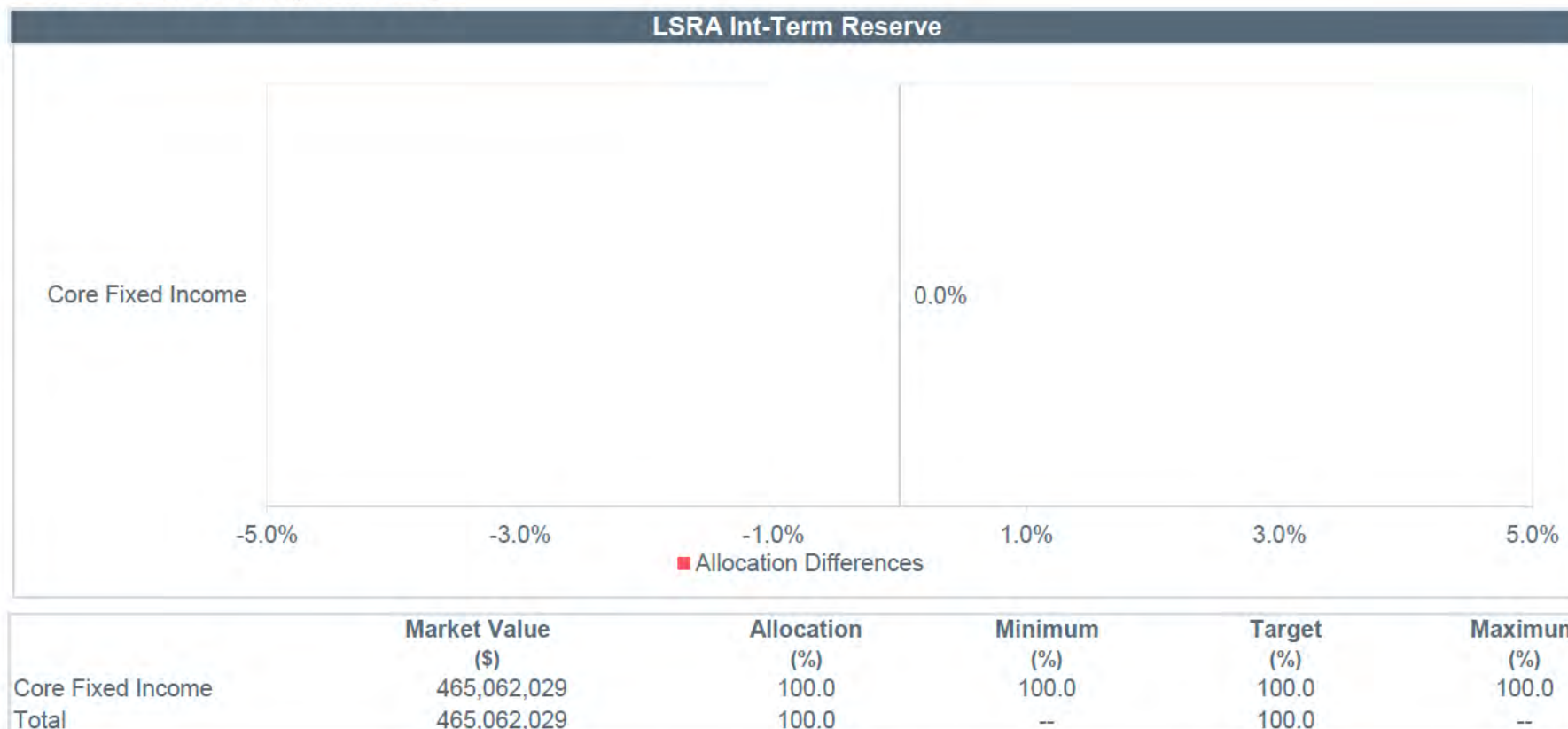
Total LSRA			
	Market Value	Allocation	Target
	(\$)	(%)	(%)
Broad US Equity	116,827,703	7.7	N/A
Small Cap US Equity	35,348,594	2.3	N/A
Broad International Equity	155,431,628	10.2	N/A
MLPs	75,620,185	5.0	N/A
Diversified Hedge Funds	101,619,343	6.7	N/A
Core Fixed Income	465,062,029	30.5	N/A
Low Duration Fixed Income	500,963,552	32.9	N/A
Bank Loans	70,668,407	4.6	N/A
Cash Equivalents	1,123,192	0.1	N/A
Total	1,522,664,633	100.0	N/A

Market values were provided by the Treasurer's Office and may differ from the rest of the report.

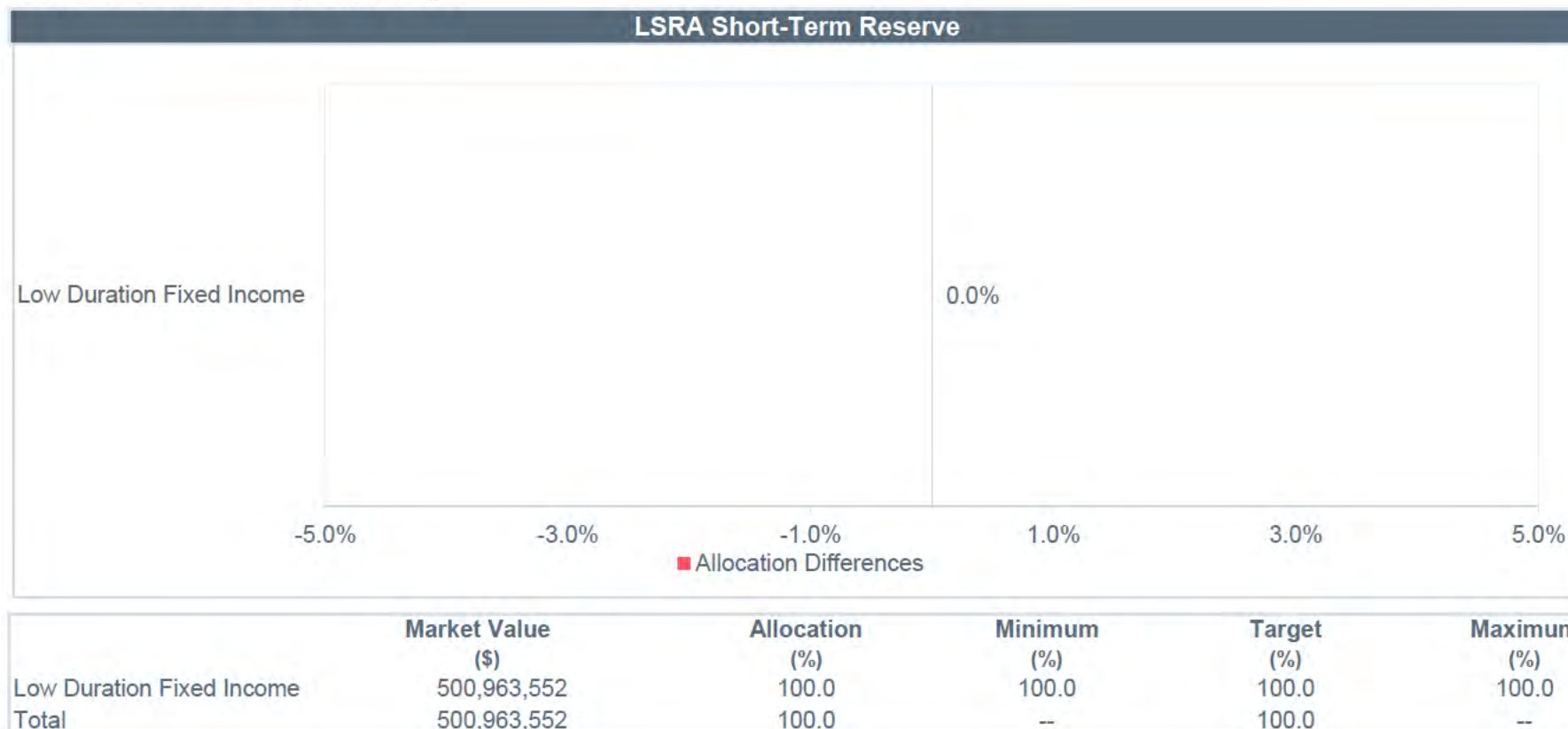
The Total LSRA pool has no target allocation.



	Market Value (\$)	Allocation (%)	Minimum (%)	Target (%)	Maximum (%)
Broad US Equity	116,827,703	21.0	17.0	22.0	27.0
Small Cap US Equity	35,348,594	6.4	4.0	6.0	8.0
Broad International Equity	155,431,628	27.9	21.0	28.0	35.0
MLPs	75,620,185	13.6	10.0	12.5	15.0
Diversified Hedge Funds	101,619,343	18.3	15.0	19.0	23.0
Bank Loans	70,668,407	12.7	10.0	12.5	15.0
Cash Equivalents	1,123,192	0.2	0.0	0.0	0.0
Total	556,639,052	100.0	--	100.0	--



Market values were provided by the Treasurer's Office and may differ from the rest of the report.



Market values were provided by the Treasurer's Office and may differ from the rest of the report.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2019

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	Since Incep.	Inception Date
All Cap US Equity	1,654,636,737	7.6	8.5	10.3	30.4	30.4	13.4	10.4	N/A	N/A	-6.2	11.9	11/01/2014
All Cap US Equity Custom Index			9.1	10.4	31.0	31.0	14.6	11.2	14.4	13.4	-5.2	11.4	
Difference			-0.6	-0.1	-0.6	-0.6	-1.2	-0.8	N/A	N/A	-1.0	0.5	
Small Cap US Equity	450,876,547	2.1	9.9	7.4	25.4	25.4	4.4	6.1	N/A	N/A	-18.3	6.0	11/01/2014
Russell 2000 Index			9.9	7.3	25.5	25.5	8.6	8.2	11.6	11.8	-11.0	8.6	
Difference			0.0	0.1	-0.1	-0.1	-4.2	-2.1	N/A	N/A	-7.3	-2.6	
Int'l Equity	2,119,537,359	9.7	9.2	7.5	23.3	23.3	10.4	5.8	5.7	5.2	-14.7	5.9	01/01/2004
International Equity Custom Index			8.9	7.0	21.5	21.5	9.9	5.5	5.4	4.8	-14.2	5.5	
Difference			0.3	0.5	1.8	1.8	0.5	0.3	0.3	0.4	-0.5	0.4	
Preferred Stock	153,919,347	0.7	3.2	7.0	19.3	19.3	N/A	N/A	N/A	N/A	N/A	11.0	07/01/2018
S&P US Preferred Stock Index			2.3	6.1	17.6	17.6	7.1	5.7	6.0	7.3	-4.3	7.4	
Difference			0.9	0.9	1.7	1.7	N/A	N/A	N/A	N/A	N/A	3.6	
MLPs	957,017,701	4.4	-1.1	-6.2	13.1	13.1	N/A	N/A	N/A	N/A	N/A	-8.0	08/01/2018
MLP Custom Index			-4.1	-8.9	7.5	7.5	-3.6	-6.6	-0.1	4.9	-11.7	-8.2	
Difference			3.0	2.7	5.6	5.6	N/A	N/A	N/A	N/A	N/A	0.2	
Private Equity	654,556,487	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
S&P 500 Index+5%			10.4	13.7	38.1	38.1	21.0	17.3	20.5	19.2	0.4	14.8	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Core Real Estate	1,010,960,686	4.7	1.4	2.5	2.7	2.7	5.8	7.6	8.6	10.1	7.7	5.6	01/01/2006
NCREIF ODCE Index (AWA) (Net)			1.3	2.4	4.4	4.4	6.1	8.0	9.2	10.4	7.4	5.8	
Difference			0.1	0.1	-1.7	-1.7	-0.3	-0.4	-0.6	-0.3	0.3	-0.2	
Non-Core Real Estate	203,838,679	0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NCREIF ODCE Index (AWA) (Net)			1.3	2.4	4.4	4.4	6.1	8.0	9.2	10.4	7.4	4.6	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Diversified Hedge Funds	762,317,123	3.5	1.7	2.0	4.1	4.1	2.7	1.4	3.2	3.6	-0.8	2.3	12/01/2007
HFRI FOF Comp Index			3.1	2.1	8.4	8.4	3.9	2.4	3.4	2.8	-4.0	1.3	
Difference			-1.4	-0.1	-4.3	-4.3	-1.2	-1.0	-0.2	0.8	3.2	1.0	
Core Fixed Income	4,816,950,370	22.2	0.0	2.5	8.0	8.0	4.0	3.1	2.7	N/A	0.5	2.7	01/01/2013
Bloomberg US Agg Bond Index			0.2	2.5	8.7	8.7	4.0	3.0	2.7	3.7	0.0	2.7	
Difference			-0.2	0.0	-0.7	-0.7	0.0	0.1	0.0	N/A	0.5	0.0	

Performance shown is net of fees and excludes Public Purpose Investments (PPIs). Wyoming State Treasurer's Office fiscal year ends on June 30th.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2019

	Allocation		Performance (%)										
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	Since Incep.	Inception Date
Bank Loans	1,241,324,953	5.7	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.1	09/01/2019
S&P/LSTA Lvg'd Loan Index			1.7	2.7	8.6	8.6	4.3	4.4	4.2	5.0	0.4	2.2	
Difference			0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.1	
Opportunistic Fixed Income	108,672,278	0.5	1.5	2.8	6.6	6.6	6.8	6.7	N/A	N/A	4.1	6.1	07/01/2014
CS Western Euro Hi Yld Index			2.5	4.6	14.4	14.4	7.1	6.8	6.8	8.4	-1.1	6.0	
Difference			-1.0	-1.8	-7.8	-7.8	-0.3	-0.1	N/A	N/A	5.2	0.1	
Emerging Market Debt	206,178,011	0.9	5.5	4.1	13.0	13.0	6.0	1.7	N/A	N/A	-9.1	-1.4	04/01/2013
JPM GBI-EM Gbl Dv'd Index (USD) (TR) (Unhedged)			5.2	4.4	13.5	13.5	7.0	2.8	-0.2	2.7	-6.2	-0.2	
Difference			0.3	-0.3	-0.5	-0.5	-1.0	-1.1	N/A	N/A	-2.9	-1.2	
Laddered Treasury	3,887,791,688	17.9	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	10/01/2019
Long Duration Fixed Income	807,323,251	3.7	-1.6	5.0	19.1	19.1	N/A	N/A	N/A	N/A	N/A	19.1	01/01/2019
Bloomberg US Gov't Crdt Lng Trm Bond Index			-1.1	5.4	19.6	19.6	8.1	5.4	5.1	7.6	-4.7	19.6	
Difference			-0.5	-0.4	-0.5	-0.5	N/A	N/A	N/A	N/A	N/A	-0.5	
Low Duration Fixed Income	501,023,236	2.3	0.9	1.4	4.0	4.0	N/A	N/A	N/A	N/A	N/A	4.3	12/01/2018
Low Duration Fixed Income Custom Index			0.5	1.1	3.8	3.8	2.1	1.6	1.4	1.5	1.6	4.3	
Difference			0.4	0.3	0.2	0.2	N/A	N/A	N/A	N/A	N/A	0.0	
Public Purpose Investments	268,128,462	1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Cash Equivalents	1,934,274,403	8.9	0.5	1.1	2.4	2.4	1.7	1.1	0.8	0.7	1.9	1.6	01/01/2006
JP Morgan Cash Custom Index			0.5	1.0	2.5	2.5	1.7	1.1	0.9	0.8	1.9	1.6	
Difference			0.0	0.1	-0.1	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	
Total Fund	21,740,814,514	100.0	2.3	3.3	10.4	10.4	5.8	4.4	4.6	5.3	-1.3	5.5	10/01/1996
Wyoming State Custom Index			2.3	3.3	10.8	10.8	5.6	4.3	4.7	5.2	-1.6	5.4	
Difference			0.0	0.0	-0.4	-0.4	0.2	0.1	-0.1	0.1	0.3	0.1	

Performance shown is net of fees and excludes Public Purpose Investments (PPIs). Wyoming State Treasurer's Office fiscal year ends on June 30th.

Wyoming State Treasurer's Office
Asset Allocation & Performance

As of December 31, 2019

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Public Equity											
All Cap US Equity Composite	1,654,636,737	8.52	10.33	30.40	30.40	13.42	10.40	N/A	N/A	11.90	11/01/2014
All Cap US Equity Custom Index		9.10	10.37	31.02	31.02	14.57	11.24	14.38	13.42	11.37	
Difference		-0.58	-0.04	-0.62	-0.62	-1.15	-0.84	N/A	N/A	0.53	
State Street All Cap	1,654,636,737	8.52	10.33	30.29	30.29	13.90	10.93	N/A	N/A	10.93	01/01/2015
State Street All Cap Custom Index		8.49	10.13	30.11	30.11	13.79	10.91	14.17	13.38	10.91	
Difference		0.03	0.20	0.18	0.18	0.11	0.02	N/A	N/A	0.02	
UW Portfolio Mgmt Program	1,487,194	8.07	9.64	25.88	25.88	12.14	9.58	12.00	9.68	5.61	04/01/2006
S&P 500 Index (Cap Wtd)		9.07	10.92	31.49	31.49	15.27	11.70	14.73	13.56	9.15	
Difference		-1.00	-1.28	-5.61	-5.61	-3.13	-2.12	-2.73	-3.88	-3.54	
Small Cap US Equity Composite	450,876,547	9.92	7.37	25.40	25.40	4.41	6.11	N/A	N/A	6.00	11/01/2014
Russell 2000 Index		9.94	7.30	25.53	25.53	8.59	8.23	11.65	11.83	8.56	
Difference		-0.02	0.07	-0.13	-0.13	-4.18	-2.12	N/A	N/A	-2.56	
Internal Equity Russell 2000	171,073,205	9.85	7.30	25.32	25.32	N/A	N/A	N/A	N/A	-1.80	09/01/2018
Russell 2000 Index		9.94	7.30	25.53	25.53	8.59	8.23	11.65	11.83	-1.69	
Difference		-0.09	0.00	-0.21	-0.21	N/A	N/A	N/A	N/A	-0.11	
State Street Russell 2000	279,803,342	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.07	11/01/2019
Russell 2000 Index		9.94	7.30	25.53	25.53	8.59	8.23	11.65	11.83	7.12	
Difference		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.05	

Performance shown is net of fees. The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter. The SSGA Custom Index consists of 69% Russell 3000, 24% FTSE RAFI US 1000, and 7% MSCI US Min Vol Index. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity Composite	2,119,537,359	9.23	7.51	23.33	23.33	10.36	5.75	5.75	5.25	5.87	01/01/2004
International Equity Custom Index		8.92	6.96	21.51	21.51	9.87	5.51	5.44	4.79	5.47	
Difference		0.31	0.55	1.82	1.82	0.49	0.24	0.31	0.46	0.40	
Northern Trust	840,148,058	8.80	7.02	21.62	21.62	10.13	5.63	5.57	N/A	5.76	08/01/2010
MSCI ACW Ex US Index (Net)		8.92	6.96	21.51	21.51	9.87	5.51	5.44	4.97	5.63	
Difference		-0.12	0.06	0.11	0.11	0.26	0.12	0.13	N/A	0.13	
Arrowstreet	771,010,132	10.04	8.47	22.89	22.89	N/A	N/A	N/A	N/A	1.51	03/01/2018
MSCI ACW Ex US IM Index (Net)		9.20	7.33	21.63	21.63	9.84	5.71	5.65	5.21	1.65	
Difference		0.84	1.14	1.26	1.26	N/A	N/A	N/A	N/A	-0.14	
Harding Loevner	508,379,170	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2020
MSCI ACW Ex US Index (USD) (Net)		8.92	6.96	21.51	21.51	9.87	5.51	5.44	4.97	N/A	
Difference		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Hybrid Assets											
Cohen & Steers	153,919,347	3.16	6.97	19.32	19.32	N/A	N/A	N/A	N/A	10.98	07/01/2018
S&P US Preferred Stock Index		2.26	6.05	17.64	17.64	7.11	5.73	6.01	7.33	7.36	
Difference		0.90	0.92	1.68	1.68	N/A	N/A	N/A	N/A	3.62	
MLP Composite	957,017,701	-1.10	-6.24	13.12	13.12	N/A	N/A	N/A	N/A	-7.96	08/01/2018
MLP Custom Index		-4.08	-8.90	7.55	7.55	-3.56	-6.61	-0.11	4.88	-8.18	
Difference		2.98	2.66	5.57	5.57	N/A	N/A	N/A	N/A	0.22	
Harvest Fund Advisors	506,999,224	-1.10	-6.24	13.12	13.12	N/A	N/A	N/A	N/A	-7.97	08/01/2018
MLP Custom Index		-4.08	-8.90	7.55	7.55	-3.56	-6.61	-0.11	4.88	-8.18	
Difference		2.98	2.66	5.57	5.57	N/A	N/A	N/A	N/A	0.21	
Harvest Fund Advisors Passive	450,018,477	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02/01/2020
MLP Custom Index		-4.08	-8.90	7.55	7.55	-3.56	-6.61	-0.11	4.88	N/A	
Difference		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Performance shown is net of fees. The International Equity Custom Index consists of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (Net) thereafter. The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Real Estate											
Core Real Estate Composite	1,010,960,686	1.38	2.47	2.68	2.68	5.75	7.62	8.64	10.12	5.63	01/01/2006
NCREIF ODCE Index (AWA) (Net)		1.27	2.36	4.39	4.39	6.13	7.98	9.17	10.39	5.83	
Difference		0.11	0.11	-1.71	-1.71	-0.38	-0.36	-0.53	-0.27	-0.20	
Clarion Lion	662,402,928	1.85	3.40	6.61	6.61	7.93	9.36	10.15	11.65	5.57	01/01/2006
NCREIF ODCE Index (AWA) (Net)		1.27	2.36	4.39	4.39	6.13	7.98	9.17	10.39	5.83	
Difference		0.58	1.04	2.22	2.22	1.80	1.38	0.98	1.26	-0.26	
UBS Trumbull	269,582,095	-0.13	0.59	-2.81	-2.81	2.85	5.26	6.57	8.25	4.95	07/01/2006
NCREIF ODCE Index (AWA) (Net)		1.27	2.36	4.39	4.39	6.13	7.98	9.17	10.39	5.49	
Difference		-1.40	-1.77	-7.20	-7.20	-3.28	-2.72	-2.60	-2.14	-0.54	
SC Capital	78,975,663	2.67	1.24	9.52	9.52	6.98	N/A	N/A	N/A	7.22	09/01/2016
NCREIF ODCE Index (AWA) (Net)		1.27	2.36	4.39	4.39	6.13	7.98	9.17	10.39	6.67	
Difference		1.40	-1.12	5.13	5.13	0.85	N/A	N/A	N/A	0.55	
Diversified Hedge Funds											
Diversified Hedge Funds Composite	762,317,123	1.69	1.97	4.07	4.07	2.69	1.40	3.20	3.57	2.34	12/01/2007
HFRI FOF Comp Index		3.08	2.10	8.39	8.39	3.89	2.36	3.42	2.83	1.26	
Difference		-1.39	-0.13	-4.32	-4.32	-1.20	-0.96	-0.22	0.74	1.08	
Grosvenor Diversified Hedge Funds	254,026,285	2.54	3.05	5.67	5.67	N/A	N/A	N/A	N/A	1.54	07/01/2018
HFRI FOF Comp Index		3.08	2.10	8.39	8.39	3.89	2.36	3.42	2.83	2.17	
Difference		-0.54	0.95	-2.72	-2.72	N/A	N/A	N/A	N/A	-0.63	
Internal Diversified Hedge Funds	503,949,828	1.49	1.78	6.08	6.08	N/A	N/A	N/A	N/A	4.61	07/01/2018
HFRI FOF Comp Index		3.08	2.10	8.39	8.39	3.89	2.36	3.42	2.83	2.17	
Difference		-1.59	-0.32	-2.31	-2.31	N/A	N/A	N/A	N/A	2.44	

Performance shown is net of fees. Wyoming State Treasurer's Office fiscal year ends on June 30th. Since Inception date shown represents the first full month following initial funding.

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income											
Core Fixed Income Composite	4,816,950,370	0.03	2.47	8.01	8.01	3.98	3.05	2.66	N/A	2.66	01/01/2013
Bloomberg US Agg Bond Index		0.18	2.45	8.72	8.72	4.03	3.05	2.72	3.75	2.72	
Difference		-0.15	0.02	-0.71	-0.71	-0.05	0.00	-0.06	N/A	-0.06	
C.S. McKee	61,666,980	0.33	2.56	8.13	8.13	4.08	3.21	2.72	N/A	2.72	01/01/2013
C.S. McKee Custom Index		0.18	2.45	7.63	7.63	3.93	2.99	2.68	3.72	2.68	
Difference		0.15	0.11	0.50	0.50	0.15	0.22	0.04	N/A	0.04	
PIMCO	2,253,342,975	-0.08	2.48	7.60	7.60	4.04	3.11	2.62	N/A	2.62	01/01/2013
PIMCO Custom Index		0.18	2.45	7.30	7.30	3.68	2.84	2.57	3.64	2.57	
Difference		-0.26	0.03	0.30	0.30	0.36	0.27	0.05	N/A	0.05	
Internal Intermediate Govt Fixed Income Portfolio	1,140,794,890	-0.49	0.97	4.53	4.53	2.73	2.19	1.85	2.46	4.57	10/01/1996
Internal Intermediate Govt Fixed Income Portfolio Index		-0.46	0.71	4.70	4.70	2.41	1.89	1.53	2.33	4.56	
Difference		-0.03	0.26	-0.17	-0.17	0.32	0.30	0.32	0.13	0.01	
Payden & Rygel IGC (SA)	628,010,559	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.45	11/01/2019
Bloomberg US Corp Inv Grade Index		1.18	4.27	14.54	14.54	5.92	4.60	4.10	5.54	0.57	
Difference		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.12	
JP Morgan MBS	733,134,966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.17	11/01/2019
Bloomberg US MBS Index (Unhgd)		0.71	2.09	6.35	6.35	3.25	2.58	2.49	3.15	0.36	
Difference		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.19	
Bank Loans Composite	1,241,324,953	1.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.12	09/01/2019
S&P/LSTA Lvg'd Loan Index		1.73	2.74	8.64	8.64	4.35	4.45	4.15	5.01	2.21	
Difference		-0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.09	
Credit Suisse	741,331,988	1.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.19	09/01/2019
S&P/LSTA Lvg'd Loan Index		1.73	2.74	8.64	8.64	4.35	4.45	4.15	5.01	2.21	
Difference		-0.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	
Octagon	405,868,070	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.64	09/01/2019
S&P/LSTA Lvg'd Loan Index		1.73	2.74	8.64	8.64	4.35	4.45	4.15	5.01	2.21	
Difference		0.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.43	

Performance shown is net of fees. The Internal Int Govt Fixed Income Portfolio Index currently consists of the Bloomberg US Treasury Index. November 2019 performance consists of portfolio performance. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index. The C.S. McKee Custom Index consists of the Bloomberg US Agg Index through January 2018, the Bloomberg US Agg Int Index through May 2019, and the Bloomberg US Agg Index thereafter. The PIMCO Custom Index consists of the Bloomberg US Agg Index through February 2018, the Bloomberg US Agg Int Index through June 2019, the Bloomberg US Agg Index through 03/26/2020, account performance from 03/27/2020 through 04/03/2020, and the Bloomberg US Agg Index thereafter.

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Emerging Market Debt Fixed Income Composite	206,178,011	5.45	4.06	12.98	12.98	5.99	1.71	N/A	N/A	-1.38	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (Unhedged)		5.20	4.37	13.47	13.47	7.03	2.78	-0.23	2.71	-0.22	
Difference		0.25	-0.31	-0.49	-0.49	-1.04	-1.07	N/A	N/A	-1.16	
Investec	206,178,011	5.45	4.06	13.55	13.55	6.82	1.91	N/A	N/A	-0.79	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (Unhedged)		5.20	4.37	13.47	13.47	7.03	2.78	-0.23	2.71	-0.22	
Difference		0.25	-0.31	0.08	0.08	-0.21	-0.87	N/A	N/A	-0.57	
Laddered Treasury Composite	3,887,791,688	0.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.46	10/01/2019
Internal Ladder Portfolio	3,887,791,688	0.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.46	10/01/2019
Long Duration Fixed Income Composite	807,323,251	-1.59	4.95	19.11	19.11	N/A	N/A	N/A	N/A	19.11	01/01/2019
Bloomberg US Gov't Crdt Lng Trm Bond Index		-1.12	5.39	19.59	19.59	8.07	5.42	5.09	7.59	19.59	
Difference		-0.47	-0.44	-0.48	-0.48	N/A	N/A	N/A	N/A	-0.48	
Internal Long Duration Govt Fixed Income Portfolio	411,063,677	-4.02	3.23	14.61	14.61	N/A	N/A	N/A	N/A	14.61	01/01/2019
Bloomberg US Gov't Lng Trm Bond Index		-4.06	3.45	14.75	14.75	6.95	4.16	4.25	6.97	14.75	
Difference		0.04	-0.22	-0.14	-0.14	N/A	N/A	N/A	N/A	-0.14	
Logan Circle	396,259,574	1.03	6.80	23.48	23.48	N/A	N/A	N/A	N/A	21.85	11/01/2018
Bloomberg US Lng Crdt Index		1.18	6.86	23.36	23.36	8.88	6.31	5.72	7.99	21.81	
Difference		-0.15	-0.06	0.12	0.12	N/A	N/A	N/A	N/A	0.04	
Low Duration Fixed Income Composite	501,023,236	0.87	1.44	3.96	3.96	N/A	N/A	N/A	N/A	4.32	12/01/2018
Low Duration Fixed Income Custom Index		0.51	1.10	3.84	3.84	2.09	1.64	1.37	1.52	4.28	
Difference		0.36	0.34	0.12	0.12	N/A	N/A	N/A	N/A	0.04	
Internal Low Duration Govt Fixed Income Portfolio	501,023,236	0.87	1.44	3.80	3.80	N/A	N/A	N/A	N/A	3.11	03/01/2018
Bloomberg US Gov't 1-3 Yr Bond Index		0.51	1.10	3.59	3.59	1.86	1.40	1.15	1.25	3.01	
Difference		0.36	0.34	0.21	0.21	N/A	N/A	N/A	N/A	0.10	
Opportunistic Fixed Income											
Grosvenor Silvery Lupine Fund	108,672,278	1.47	2.79	6.59	6.59	6.77	6.70	N/A	N/A	6.14	07/01/2014
CS Western Euro Hi Yld Index		2.52	4.63	14.41	14.41	7.06	6.81	6.84	8.40	6.02	
Difference		-1.05	-1.84	-7.82	-7.82	-0.29	-0.11	N/A	N/A	0.12	

Performance shown is net of fees. The Low Duration Fixed Income Custom Index consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.

	Allocation	Performance (%)									
	Market Value (\$)	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Cash Equivalents											
JP Morgan Cash Composite	1,934,274,403	0.51	1.05	2.42	2.42	1.71	1.14	0.85	0.71	1.56	01/01/2006
JP Morgan Cash Custom Index		0.46	1.03	2.47	2.47	1.72	1.14	0.86	0.77	1.57	
Difference		0.05	0.02	-0.05	-0.05	-0.01	0.00	-0.01	-0.06	-0.01	
Wyo-Star Cash Composite	694,769,747	0.42	1.01	2.57	2.57	1.69	1.13	0.87	0.77	3.22	10/01/1996
Wyo-Star Cash Custom Index		0.48	1.10	2.81	2.81	1.79	1.20	0.93	0.85	2.65	
Difference		-0.06	-0.09	-0.24	-0.24	-0.10	-0.07	-0.06	-0.08	0.57	
WYO STAR II Total Fund	38,148,808	0.78	1.68	4.97	4.97	N/A	N/A	N/A	N/A	4.97	01/01/2019
Bloomberg US Corp 1-3 Yr Index		0.86	1.83	5.30	5.30	2.89	2.41	2.13	2.55	5.30	
Difference		-0.08	-0.15	-0.33	-0.33	N/A	N/A	N/A	N/A	-0.33	

Performance shown is net of fees.

Wyoming State Treasurer's Office
Investment Values by Fund
December 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/19 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,436,332,540	\$21,444,953,937	\$21,740,814,514	100.0%
Permanent Mineral Trust	\$7,460,427,886	\$7,971,971,056	\$8,141,125,014	100.0%
US Equity	\$876,240,386	\$1,005,361,041	\$1,158,509,029	14.2%
International Equity	\$1,037,472,611	\$1,159,848,536	\$1,155,127,611	14.2%
MLPs	\$462,590,886	\$275,600,089	\$430,796,325	5.3%
Private Equity	\$348,857,001	\$384,982,809	\$498,722,055	6.1%
Real Estate	\$526,049,972	\$581,077,046	\$628,757,923	7.7%
Diversified Hedge Funds	\$586,578,324	\$591,606,799	\$599,742,545	7.4%
Fixed Income	\$2,840,424,765	\$3,647,250,124	\$2,798,138,363	34.4%
Public Purpose Investments	\$121,918,725	\$119,504,982	\$121,918,725	1.5%
Cash Equivalents (Liquidated Managers)	\$0	\$7,262,727	\$81,596,992	1.0%
Cash (invested in State Agency Pool)	\$660,295,217	\$199,476,903	\$667,815,447	8.2%
Common School Perm Land Fund	\$3,949,384,506	\$4,078,488,970	\$4,246,720,218	100.0%
US Equity	\$296,029,432	\$374,104,474	\$416,803,370	9.8%
International Equity	\$379,753,189	\$409,406,113	\$424,012,648	10.0%
Preferred Stock	\$114,718,559	\$132,252,837	\$141,464,346	3.3%
MLPs	\$303,041,520	\$188,918,891	\$281,720,418	6.6%
Private Equity	\$64,957,631	\$152,097,948	\$114,633,709	2.7%
Real Estate	\$361,103,625	\$234,141,119	\$408,627,788	9.6%
Diversified Hedge Funds	\$0	\$0	\$0	0.0%
Fixed Income	\$1,885,721,245	\$2,490,208,719	\$1,873,766,786	44.1%
Public Purpose Investments	\$18,359,738	\$18,359,738	\$18,359,738	0.4%
Cash Equivalents (Liquidated Managers)	\$0	\$3,298,790	\$35,644,552	0.8%
Cash (invested in State Agency Pool)	\$525,699,568	\$75,700,340	\$531,686,862	12.5%
Permanent Land Fund	\$192,920,361	\$194,691,580	\$205,243,513	100.0%
US Equity	\$25,100,413	\$23,867,892	\$27,399,710	13.3%
International Equity	\$25,802,115	\$27,583,182	\$28,531,528	13.9%
MLPs	\$11,490,805	\$6,809,105	\$10,686,665	5.2%
Private Equity	\$8,723,171	\$11,031,512	\$12,544,408	6.1%
Real Estate	\$12,987,055	\$14,416,934	\$15,532,636	7.6%
Diversified Hedge Funds	\$13,993,701	\$14,111,986	\$14,310,794	7.0%
Fixed Income	\$72,772,747	\$87,421,704	\$71,784,538	35.0%
Cash Equivalents (Liquidated Managers)	\$0	\$190,109	\$2,151,744	1.0%
Cash (invested in State Agency Pool)	\$22,050,354	\$9,259,157	\$22,301,489	10.9%
University Permanent Land Fund	\$21,222,724	\$26,193,894	\$27,304,463	100.0%
US Equity	\$2,063,669	\$6,445,924	\$6,779,129	24.8%
International Equity	\$3,531,729	\$3,357,492	\$3,805,220	13.9%
MLPs	\$1,553,898	\$817,896	\$1,460,817	5.4%
Private Equity	\$983,747	\$967,444	\$1,391,793	5.1%
Real Estate	\$1,679,301	\$1,696,960	\$1,985,836	7.3%
Diversified Hedge Funds	\$1,466,417	\$1,479,925	\$1,496,478	5.5%
Fixed Income	\$6,966,904	\$11,361,121	\$7,209,162	26.4%
Cash Equivalents (Liquidated Managers)	\$0	\$21,415	\$165,063	0.6%
Cash (invested in State Agency Pool)	\$2,977,058	\$45,717	\$3,010,964	11.0%

Wyoming State Treasurer's Office
Investment Values by Fund
December 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/19 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,436,332,540	\$21,444,953,937	\$21,740,814,514	100.0%
Hathaway Scholarship	\$565,508,951	\$591,871,445	\$612,561,441	100.0%
US Equity	\$65,248,489	\$74,650,590	\$86,110,163	14.1%
International Equity	\$78,438,445	\$85,692,479	\$86,969,580	14.2%
MLPs	\$34,832,129	\$20,680,678	\$32,492,489	5.3%
Private Equity	\$21,112,941	\$14,557,053	\$27,264,523	4.5%
Real Estate	\$39,146,233	\$45,012,657	\$47,149,089	7.7%
Diversified Hedge Funds	\$43,392,743	\$43,771,735	\$44,350,822	7.2%
Fixed Income	\$219,737,956	\$290,418,309	\$215,769,474	35.2%
Cash Equivalents (Liquidated Managers)	\$0	\$631,552	\$8,130,933	1.3%
Cash (invested in State Agency Pool)	\$63,600,016	\$16,456,391	\$64,324,369	10.5%
Higher Education	\$115,001,166	\$120,309,188	\$122,927,546	100.0%
US Equity	\$9,119,692	\$11,818,524	\$12,917,693	10.5%
International Equity	\$11,250,883	\$12,431,046	\$12,582,048	10.2%
Preferred Stock	\$3,492,219	\$4,022,509	\$4,302,680	3.5%
MLPs	\$8,981,382	\$5,649,849	\$8,335,747	6.8%
Real Estate	\$10,954,581	\$8,260,669	\$12,642,493	10.3%
Diversified Hedge Funds	\$0	\$0	\$0	0.0%
Fixed Income	\$55,276,147	\$73,451,983	\$54,356,017	44.2%
Cash Equivalents (Liquidated Managers)	\$0	\$132,692	\$1,683,219	1.4%
Cash (invested in State Agency Pool)	\$15,926,262	\$4,541,917	\$16,107,649	13.1%
Workers Compensation Fund	\$2,100,747,980	\$2,234,257,336	\$2,280,293,556	100.0%
US Equity	\$177,411,117	\$193,066,261	\$225,882,349	9.9%
International Equity	\$215,632,584	\$224,283,899	\$234,123,413	10.3%
MLPs	\$109,520,876	\$48,082,691	\$104,057,662	4.6%
Real Estate	\$86,225,595	\$68,996,557	\$99,867,781	4.4%
Diversified Hedge Funds	\$0	\$0	\$0	0.0%
Fixed Income	\$1,287,390,450	\$1,630,435,565	\$1,371,804,616	60.2%
Cash Equivalents (Liquidated Managers)	\$0	\$1,665,041	\$17,432,734	0.8%
Cash (invested in State Agency Pool)	\$224,567,359	\$67,727,322	\$227,125,001	10.0%
Pool A	\$245,277,726	\$243,277,587	\$243,980,926	100.0%
US Equity	\$18,061,949	\$18,175,266	\$20,422,739	8.4%
International Equity	\$17,612,830	\$14,444,908	\$18,953,683	7.8%
Preferred Stock	\$16,789,223	\$7,621,480	\$8,152,322	3.3%
MLPs	\$12,513,910	\$8,981,010	\$11,847,393	4.9%
Fixed Income	\$138,348,118	\$186,588,163	\$137,898,234	56.5%
Real Estate	\$224,116	\$0	\$235,818	0.1%
Cash Equivalents (Liquidated Managers)	\$0	\$450,213	\$4,267,913	1.7%
Cash (invested in State Agency Pool)	\$41,727,580	\$7,016,546	\$42,202,824	17.3%
LSRA	\$1,497,486,208	\$1,554,768,810	\$1,523,461,896	100.0%
US Equity	\$134,751,396	\$119,152,165	\$152,176,297	10.0%
International Equity	\$143,188,155	\$155,571,843	\$155,431,628	10.2%
MLPs	\$75,617,080	\$0	\$75,620,185	5.0%
Diversified Hedge Funds	\$99,939,460	\$100,627,859	\$102,416,484	6.7%
Fixed Income	\$1,042,879,453	\$0	\$1,036,693,988	68.0%
Cash (invested in State Agency Pool)	\$1,110,665	\$1,179,416,944	\$1,123,314	0.1%
State Agency Pool	\$4,288,355,032	\$4,429,124,071	\$4,337,195,941	100.0%
Fixed Income	\$2,954,067,514	\$1,974,803,380	\$2,935,411,311	67.7%
Public Purpose Investments	\$93,779,884	\$142,626,490	\$93,779,884	2.2%
Cash Equivalents	\$1,240,507,634	\$2,311,694,200	\$1,308,004,746	30.2%

Wyoming State Treasurer's Office
Investment Values by Manager
December 31, 2019

	Total Investment Value	Fiscal Year Ending 06/30/19 Market Value	Current Market Value	% of MV
Wyoming State Total Fund	\$20,436,332,540	\$21,444,953,937	\$21,740,814,514	100.0%
US Equity	\$1,604,026,544	\$1,826,642,137	\$2,107,000,479	9.7%
State Street All Cap	\$1,188,099,562	\$1,664,662,199	\$1,654,636,737	
UW Portfolio Management Program	\$1,000,000	\$1,436,620	\$1,487,194	
State Street Small Cap	\$250,000,000	\$0	\$279,803,342	
Internal Equity Russell 2000	\$164,926,982	\$160,543,319	\$171,073,205	
International Equity	\$1,912,682,541	\$2,092,619,499	\$2,119,537,359	9.7%
Northern Trust	\$728,511,944	\$1,381,786,102	\$840,148,058	
Harding Loevner	\$500,000,000	\$0	\$508,379,170	
Arrowstreet	\$684,170,596	\$710,833,396	\$771,010,132	
Mixed Assets	\$1,155,142,485	\$699,437,035	\$1,110,937,049	5.1%
Cohen & Steers	\$135,000,000	\$143,896,826	\$153,919,347	
Harvest	\$570,142,485	\$555,540,208	\$506,999,224	
Harvest Passive	\$450,000,000	\$0	\$450,018,477	
Private Equity	\$444,634,491	\$563,636,766	\$654,556,487	3.0%
Access Venture Partners II	\$2,449,913	\$1,865,656	\$1,762,794	
Cheyenne Capital	\$113,998,691	\$211,623,592	\$188,660,089	
Hamilton Lane Nowood	\$131,631,300	\$151,720,725	\$154,777,478	
BlackRock LTPC	\$92,024,057	\$0	\$111,826,629	
Neuberger Berman Sauger	\$104,530,529	\$198,426,794	\$197,529,497	
Real Estate	\$1,038,370,477	\$953,601,941	\$1,214,799,365	5.6%
Clarion Lion	\$560,864,951	\$354,681,028	\$662,402,928	
UBS Trumbull	\$241,303,630	\$270,503,057	\$269,582,095	
Cornerstone	\$129,549	\$1,821,910	\$48,280	
Heitman	\$1,759,375	\$19,469	\$20,020	
M&G	\$58,573,079	\$47,744,275	\$43,152,434	
Northwood	\$98,811,084	\$146,601,385	\$147,276,178	
SC Capital	\$72,072,686	\$78,983,905	\$78,975,663	
TA Realty	\$1,578,185	\$35,742	\$34,323	
WestRiver	\$3,277,938	\$53,211,171	\$13,307,445	
Diversified Hedge Funds	\$745,370,646	\$751,598,303	\$762,317,123	3.5%
PAAMCO - Jackalope	\$8,370,646	\$9,952,532	\$4,341,010	
Grosvenor Diversified Hedge Funds	\$250,000,000	\$246,497,039	\$254,026,285	
Internal Diversified Hedge Funds	\$487,000,000	\$495,148,732	\$503,949,828	
Fixed Income	\$11,340,269,658	\$8,671,474,240	\$11,569,263,787	53.2%
C.S. McKee	\$31,673,844	\$1,286,501,718	\$61,666,980	
PIMCO	\$2,207,180,679	\$2,230,795,802	\$2,253,342,975	
Payden & Rygel	\$625,867,194	\$0	\$628,010,559	
JPM MBS	\$733,161,866	\$0	\$733,134,966	
Credit Suisse	\$726,618,499	\$0	\$741,331,988	
Octagon	\$402,552,523	\$0	\$405,868,070	
Seix	\$69,636,763	\$949,531,882	\$94,124,896	
Grosvenor Silvery Lupine Fund	\$78,090,342	\$166,179,246	\$108,672,278	
Investec	\$238,350,175	\$200,205,291	\$206,178,011	
Internal Long Duration Govt Portfolio	\$366,933,387	\$404,443,766	\$411,063,677	
Logan Circle	\$353,000,000	\$393,795,617	\$396,259,574	
Internal Int. Duration Govt Portfolio	\$1,150,197,352	\$1,918,424,288	\$1,140,794,890	
Internal Low Duration Govt Portfolio	\$500,859,073	\$1,121,596,630	\$501,023,236	
Wyoming Internal Ladder Portfolio	\$3,856,147,961	\$0	\$3,887,791,688	
Public Purpose Investments	\$268,128,462	\$330,714,719	\$268,128,462	1.2%
Cash & Cash Equivalents	\$1,927,707,236	\$5,555,229,297	\$1,934,274,403	8.9%
Epoch	\$0	\$0	\$0	
Fisher Investments	\$0	\$2,558,658	\$1,318,520	
Allianz Global Investors	\$0	\$7,410,494	\$36,391	
JP Morgan Core	\$117,247,147	\$1,454,650,728	\$118,049,556	
Neuberger Berman Credit	\$75,826,631	\$796,482,423	\$78,829,737	
State Street TIPS	\$3,565,316	\$891,039	\$555,535	
State Street Low Duration	\$25,000,000	\$163,834,297	\$25,259,355	
Stone Harbor	\$14,885,619	\$14,992,922	\$14,734,869	
JP Morgan Cash Composite	\$1,691,182,523	\$3,114,408,736	\$1,695,490,440	

State of Wyoming
State Loan and Investment Board
Investment Policy Objective Review

December 31, 2019

Investment Policy Guidelines	Meeting Objective			Explanation
	Yes	No	N/A	
1. Total Fund				
Exceed the rate of inflation (C.P.I.) over a market cycle of 5-years.	✓			Wyoming returned 4.4% vs. 1.8% for the C.P.I. for the current 5-year period
Exceed a weighted index of the total fund's asset allocation and component benchmarks over rolling 5-year periods by an appropriate amount.	✓			Wyoming returned 4.4% vs. 4.3% for the Actual Allocation Index for the current 5-year period
Not more than 1% of the outstanding common shares of any corporation shall be owned by the State. An exception may be made for Alternative Investments.	✓			
Not more than 1.5% of the total book value of permanent funds shall be invested in the common stock of any corporation. An exception may be made for Alternative Investments.	✓			

	Yes	No	N/A	Explanation
2. Investment Funds				
a) Permanent Mineral Trust Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Permanent Mineral Trust Fund return was 5.2% vs. 5.7% for the Target Allocation Index
b) Common School Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Common School Permanent Land Fund return was 5.1% vs. 5.0% for the Target Allocation Index
c) Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Permanent Land Fund return was 5.1% vs. 5.7% for the Target Allocation Index
d) University Permanent Land Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: University Permanent Land Fund return was 5.5% vs. 5.7% for the Target Allocation Index
e) Hathaway Scholarship Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Hathaway Scholarship Endowment Fund return was 4.8% vs. 5.5% for the Target Allocation Index
f) Higher Education Endowment Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Higher Education Endowment Fund return was 4.6% vs. 4.9% for the Target Allocation Index
g) Workers Compensation Fund				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Workers Compensation Fund return was 4.9% vs. 5.1% for the Target Allocation Index
h) Pool A				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Pool A return was 3.2% vs. 3.5% for the Target Allocation Index
i) LSRA				
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.			N/A	LSRA was funded during 2019.
j) State Agency Pool				
No public and/or private equities are permitted.	✓			
Exceed a weighted index of the Fund's asset allocation and component benchmarks over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: State Agency Pool return was 2.4% vs. 2.2% for the Actual Allocation Index

	Yes	No	N/A	Explanation
3. US Equity Portfolios				
a) State Street Global Advisors – All Cap – Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Apple Inc = 3.99%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the State Street All Cap Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: State Street return was 10.9% vs. 10.9% for the index
	Yes	No	N/A	Explanation
b) Internal Equity Russell 2000 – Small Cap - Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Novocure Ltd = 0.35%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2018
c) State Street Russell 2000 – Small Cap - Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Novocure Ltd = 0.35%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the Russell 2000 Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2019

	Yes	No	N/A	Explanation
4. International Equity Portfolios				
a) Northern Trust – Int'l – Passive				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Alibaba Ltd = 1.59%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Meet performance of the MSCI ACW Ex US Index (Net), before fees, over a full market cycle, approximated by the most recent five-year period.	✓			5-year: Northern Trust gross of fees return was 5.7% vs. 5.5% for the MSCI ACW Ex US Index (Net)
	Yes	No	N/A	Explanation
b) Arrowstreet – Int'l Active				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Roche Holding AG = 2.53%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Outperform the MSCI ACW Ex US IM Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
c) Harding Loevner – Int'l Active				
A maximum of 5% or the benchmark weighting + 2%, whichever is greater, of the total stock portfolio of the investment manager be invested in any one company.	✓			Largest Holding: Taiwan Semiconductor = 4.23%
A maximum of 1% of the outstanding float of shares shall be held in companies with market capitalizations of \$5 Billion or greater at the time of purchase. For companies with market capitalizations of less than \$5 Billion, a maximum of 5% shall apply.	✓			
The maximum allowable in any sector, as defined by Global Industry Classification System Level 1, is 2.5 times the respective benchmark weighting.	✓			
A minimum number of 20 securities shall be held.	✓			
Outperform the MSCI ACW Ex US Index (Net), net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2020
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2020

	Yes	No	N/A	Explanation
5. Preferred Stock				
a) Cohen & Steers				
Minimum issue credit rating for preferred stock at the time of purchase will be BB or equivalent.	✓			The portfolio currently holds securities which are rated below BB. Retention of these securities in the portfolio is permitted pursuant to Section 7.2 of the Investment Policy.
A maximum of 35% of the total portfolio of the investment manager may be invested in securities rated below investment grade.	✓			
A maximum of 10% of the total portfolio of the investment manager may be invested in any one issuer.	✓			
Outperform the S&P U.S. Preferred Stock Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 07/2018
	Yes	No	N/A	Explanation
6. MLPs				
a) Harvest				
A maximum of 15% or the benchmark weighting + 2%, whichever is greater, of the total portfolio may be invested in any one company.	✓			
Outperform the MLP Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 08/2018
b) Harvest Passive				
A maximum of 15% or the benchmark weighting + 2%, whichever is greater, of the total portfolio may be invested in any one company.	✓			
Outperform the MLP Custom Index, net of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 02/2020

	Yes	No	N/A	Explanation
7. Alternative Strategies				
Core Real Estate				
a) Clarion Lion				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Clarion Lion net of fees return was 9.4% vs. 8.0% for the NCREIF ODCE Index (Net) (AWA)
b) UBS Trumbull				
Outperform the NCREIF Fund Index – Open-End Diversified Core Equity (ODCE), net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: UBS Trumbull net of fees return was 5.3% vs. 8.0% for the NCREIF ODCE Index (Net) (AWA)
Absolute Return				
c) Grosvenor Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018
d) Internal Diversified Hedge Funds				
Outperform the HFRI FOF Comp Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 07/2018

	Yes	No	N/A	Explanation
8. Fixed Income Portfolios				
a) C.S. McKee – Core				CS McKee portfolio began liquidation in December 2019.
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration must fall in the range of +/- 20% of the manager's primary benchmark, but not to exceed the duration of the Bloomberg Barclays U.S. Aggregate Bond Index or the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index by more than 20%.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Standalone private placements, including 144A securities, are not permitted as direct purchase is not currently allowed under regulations of the Securities and Exchange Commission.	✓			
Outperform its Custom Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: C.S. McKee net of fees return was 3.2% vs. 3.0% for the C.S. McKee Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: C.S. McKee ranked in the 58th percentile for Core Fixed Income

	Yes	No	N/A	Explanation
b) PIMCO – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration must fall in the range of +/- 20% of the manager's primary benchmark, but not to exceed the duration of the Bloomberg Barclays U.S. Aggregate Bond Index or the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index by more than 20%.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Standalone private placements, including 144A securities, are not permitted as direct purchase is not currently allowed under regulations of the Securities and Exchange Commission.	✓			
Outperform its Custom Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: PIMCO net of fees return was 3.1% vs. 2.8% for the PIMCO Custom Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: PIMCO ranked in the 66th percentile for Core Fixed Income

	Yes	No	N/A	Explanation
c) Internal Int. Govt Fixed Income Portfolio – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration must fall in the range of +/- 20% of the manager's primary benchmark, but not to exceed the duration of the Bloomberg Barclays U.S. Aggregate Bond Index or the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index by more than 20%.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Standalone private placements, including 144A securities, are not permitted as direct purchase is not currently allowed under regulations of the Securities and Exchange Commission.	✓			
Outperform the Internal Int. Gov Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			5-year: Int. Govt Fixed Income Portfolio net of fees return was 2.2% vs. return of 1.9% for the Internal Int. Gov Index
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: Int. Govt Fixed Income Portfolio ranked in the 57th percentile for Government Fixed Income

	Yes	No	N/A	Explanation
d) Payden & Rygel – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration must fall in the range of +/- 20% of the manager's primary benchmark, but not to exceed the duration of the Bloomberg Barclays U.S. Aggregate Bond Index or the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index by more than 20%.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Standalone private placements, including 144A securities, are not permitted as direct purchase is not currently allowed under regulations of the Securities and Exchange Commission.	✓			
Outperform the Bloomberg US Corp Inv Grade Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2019

	Yes	No	N/A	Explanation
e) JPM MBS – Core				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles.	✓			
Non-U.S. dollar denominated securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Private mortgage-backed and asset-backed securities are limited to 10% of the portfolio market value.	✓			
Commercial mortgage-backed securities are permitted but shall comprise no more than 10% of the portfolio market value.	✓			
Dollar denominated emerging market securities are permitted, but shall comprise no more than 10% of the portfolio market value.	✓			
Investments in mortgage interest only and principal only securities or their derivations are permitted, but shall comprise no more than 5% of the portfolio market value.	✓			
Commercial paper of all issuers shall not exceed \$500,000,000.	✓			
A minimum number of 25 securities shall be held.	✓			
Duration must fall in the range of +/- 20% of the manager's primary benchmark, but not to exceed the duration of the Bloomberg Barclays U.S. Aggregate Bond Index or the Bloomberg Barclays Intermediate U.S. Aggregate Bond Index by more than 20%.	✓			
Average portfolio credit quality must be at least A- or equivalent.	✓			
Minimum issue credit rating at time of purchase shall be: A1+ or equivalent for commercial paper; BBB- or equivalent for corporate bonds, Mortgage-Backed Securities, Commercial Mortgage-Backed Securities, Asset Backed Securities, Non-U.S. Dollar-Denominated Securities and Dollar-Denominated Emerging Market Securities.	✓			
Standalone private placements, including 144A securities, are not permitted as direct purchase is not currently allowed under regulations of the Securities and Exchange Commission.	✓			
Outperform the Bloomberg US MBS Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2019

	Yes	No	N/A	Explanation
f) Credit Suisse – Bank Loans				
Obligations of specific issuers are subject to a 5% per issuer limit, excluding investments in commingled vehicles.	✓			
Duration must not exceed + 1 year of the S&P/LSTA Leveraged Loan Index.	✓			
Average portfolio credit quality must be at least B or equivalent.	✓			
Minimum issue credit rating at the time of purchase shall be: a) CCC or equivalent for individual securities; and b) Securities that are not rated shall be, in the judgment of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Outperform the S&P/LSTA Leveraged Loan Index., net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 09/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2019

	Yes	No	N/A	Explanation
g) Octagon – Bank Loans				
Obligations of specific issuers are subject to a 5% per issuer limit, excluding investments in commingled vehicles.	✓			
Duration must not exceed + 1 year of the S&P/LSTA Leveraged Loan Index.	✓			
Average portfolio credit quality must be at least B or equivalent.	✓			
Minimum issue credit rating at the time of purchase shall be: a) CCC or equivalent for individual securities; and b) Securities that are not rated shall be, in the judgment of the investment manager, of credit quality equal or superior to the standards described above.	✓			
Outperform the S&P/LSTA Leveraged Loan Index., net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 09/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 09/2019

	Yes	No	N/A	Explanation
h) Grosvenor Silvery Lupine Fund – Opportunistic Fixed Income				
Outperform the CS Western European Hi Yld Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: net of fees return was 6.7% vs 6.8% for the index
i) Investec – Emerging Market Debt (Local Currency)				
Obligations of individual sovereign/quasi-sovereign issuers are subject to a 20% per issuer limit.	✓			
Obligations of corporate issuers are subject to a 10% per issuer limit.	✓			
The investment manager, as part of managing the account, can take net investment positions of up to 20% of the portfolio in currency and currency forwards.	✓			
Duration must be +/- 20% of the index.	✓			
Average portfolio credit quality must be BB+ or equivalent or better.	✓			
Minimum Issue Credit Rating at the time of purchase shall be: A1+ or equivalent for commercial paper; B- or equivalent for individual securities Where a security is not rated at the issue level, the issuer rating shall be relied upon.	✓			
Outperform the JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged), net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: Investec net of fees return was 1.9% vs. the return of 2.8% for the JPM GBI-EM Gbl Dvf'd Index (USD) (TR) (Unhedged)
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.		✗		5-year: Investec ranked in the 93rd percentile for Emerging Market Debt (Local Currency)

	Yes	No	N/A	Explanation
j) Logan Circle – Long Duration Credit				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Long Credit Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 11/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 11/2018
	Yes	No	N/A	Explanation
k) Internal Long Duration – Long Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
A maximum of 30% of the portfolio may be invested in U.S. dollar denominated non-U.S. fixed income securities.	✓			
A maximum of 10% of the portfolio may be invested in U.S. dollar denominated emerging market securities.	✓			
A maximum of the appropriate benchmark plus 5% of the portfolio may be invested in convertible and municipal securities.	✓			
Average portfolio quality will be BBB+ or better. Securities shall be rated investment grade at time of purchase.	✓			
Outperform the Bloomberg US Gov Long Term Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 01/2019
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 01/2019

	Yes	No	N/A	Explanation
I) Internal Low Duration – Low Duration Government				
Obligations issued or guaranteed by the U.S. government, U.S. agencies or U.S. government-sponsored corporations and agencies are eligible without limit.	✓			
All other issuers are subject to a 5% per issuer limit excluding investments in commingled vehicles	✓			
Corporate securities will be subject to a maximum limit of 20%.	✓			
Portfolio duration must be within plus or minus 30% of the Bloomberg Barclays US Gov't: 1-3 Year Bond Index.	✓			
Average portfolio quality will be A or better.	✓			
Outperform the Bloomberg US Gov 1-3 Year Bond Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.			N/A	Inception date: 03/2018
Performance should rank in the top 40th percentile of peer manager universe as measured by the State's Consultant, gross of fees, over a full market cycle, approximated by the most recent five-year period.			N/A	Inception date: 03/2018

	Yes	No	N/A	Explanation
9. Cash and Cash Equivalents Portfolios				
JP Morgan Cash Composite*				
a) JP Morgan Treasury Cash				
The portfolio's weighted average maturity shall not exceed 90 days.	✓			
All securities shall have a maximum maturity of 365 days.	✓			
The maximum average cash flow weighted duration of the portfolio shall not exceed 90 days.	✓			
The market value of the portfolio shall remain within +/- 0.5% of 1.0% of amortized cost.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment in any single issuer must not exceed 5% of the outstanding issues of that issuer.	✓			
Investment performance must exceed Monitored Repurchase Agreement Rate and the cash equivalents allocation by the 90-day T-Bill rate, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: JP Morgan Treasury Cash net of fees return was 1.0% vs. 1.1% for the ICE BofAML 3 Mo US T-Bill Index
b) JP Morgan Treasury Extended Cash				Note this account began liquidation in December.
Maximum average cash flow weighted duration is not to exceed 1 year.	✓			
Individual securities must not exceed a cash flow weighted duration of 2 years.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment in any single issuer must not exceed 5% of the outstanding issues of that issuer.	✓			
Investment Performance must exceed an Equal Weighted Blend of the BofA Merrill Lynch 1-3 Year Agency, 1-3 Year Treasury, and a 0-3 Year Mortgage Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.	✓			

*During the fourth quarter of 2011, JP Morgan Treasury Cash and JP Morgan Treasury Extended Cash were combined. Net of fees performance shown consists of performance calculated by RVK, Inc. prior to 12/31/2011 and performance calculated by JP Morgan thereafter.

	Yes	No	N/A	Explanation
JP Morgan Wyo-Star Cash Composite*				
c) JP Morgan Wyo-Star Cash				
The portfolio's weighted average maturity is not to exceed 90 days.	✓			
All securities must have a maximum maturity of 365 days.	✓			
The maximum average cash flow weighted duration of the portfolio must not exceed 90 days.	✓			
The market value of the portfolio must remain within +/- 0.5% of 1% of amortized cost.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment performance must exceed Monitored Repurchase Agreement Rate and the cash equivalents allocation by the 90-day T-Bill rate, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: JP Morgan Wyo-Star Cash net of fees return was 1.0% vs. 1.1% for the ICE BofAML 3 Mo US T-Bill Index
d) JP Morgan Wyo-Star Extended Cash				
Maximum average cash flow weighted duration is not to exceed 3 years.	✓			
Individual securities must not exceed a cash flow weighted duration of 5 years.	✓			
A maximum of 5% of total assets may be placed in securities of one issuer except for government securities.	✓			
Investment Performance must exceed an Equal Weighted Blend of the BofA Merrill Lynch 1-3 Year Agency, 1-3 Year Treasury, and a 0-3 Year Mortgage Index, net of fees, over a full market cycle, approximated by the most recent 5-year period.		✗		5-year: JP Morgan Wyo-Star Extended Cash net of fees return was 1.5% vs. 1.6% for the Blended Index
The extended portion of WYO-STAR may not exceed 35% of the market value of the portfolio at the time of purchase.	✓			

*During the fourth quarter of 2011, JP Morgan Wyo-Star Cash and JP Morgan Wyo-Star Extended Cash were combined. Net of fees performance shown consists of performance calculated by RVK, Inc. prior to 12/31/2011 and performance calculated by JP Morgan thereafter.

Custom Benchmark Comments

The Wyoming State Actual Allocation Index is calculated using beginning month asset class weights applied to the appropriate asset class benchmark return, using the Russell 3000 Index for US all cap equities, the Russell 2000 Index for US small cap equity, MSCI ACW Ex US Index (Net) for international equities, MLP Custom Index for MLPs, Bloomberg US Agg Bond Index for core fixed income, S&P/LSTA Lvg'd Loan Index for bank loans, EMD Blended Benchmark for EMD, NCREIF Open-End Diversified Core Equity Index (Gross) (AWA) for real estate, the State's actual private equity investment returns for private equity, HFRI FOF Comp Index for Diversified Hedge Funds, and ICE BofA Merrill Lynch 90 day US T-Bill rate for cash equivalents.

Pooled Fund actual allocation indices are calculated using beginning month asset class weights applied to the appropriate asset class benchmark return, using the Russell 3000 Index for US all cap equities, the Russell 2000 Index for US small cap equity, MSCI ACW Ex US Index (Net) for international equities, MLP Custom Index for MLPs, Bloomberg US Agg Bond Index for core fixed income, S&P/LSTA Lvg'd Loan Index for bank loans, EMD Blended Benchmark for EMD, NCREIF Open-End Diversified Core Equity Index for real estate, the State's actual private equity investment returns for private equity, HFRI FOF Comp Index for Diversified Hedge Funds, and the State Agency Pool Custom Index for the State Agency Pool allocation.

- The Wyoming State Custom Index is calculated using beginning month asset class weights applied to the appropriate asset class benchmark return through 12/31/2019. As of 01/01/2020, the Index is calculated using the weighted average of the respective Investment Funds' Target Allocation Indices.
- The All Cap US Equity Custom Index consists of the Russell 3000 Index through 02/29/2020, and the S&P 500 Index thereafter.
- The MLP Custom Index consists of the S&P MLP Index (TR) through 06/30/2019, the Alerian MLP Index through 12/31/2019, and 50% Alerian MLP Index / 50% Alerian Midstream Energy Index thereafter.
- The International Equity Custom Index consists of the MSCI EAFE Index (USD) (Gross) through July 2010 and the MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Internal Intermediate Govt Fixed Income Portfolio Index currently consists of the Bloomberg US Treasury Index. November 2019 performance consists of the Internal Intermediate Govt Fixed Income Portfolio. Prior to November 2019, the index consists of Bloomberg US Gov't Int Term Bond Index. Prior to December 2009, the index consisted of the Bloomberg US Gov't Crdt Bond Index.
- The PIMCO Custom Index consists of the Bloomberg US Agg Bond Index through February 2018, the Bloomberg US Agg Int Index through June 2019, the Bloomberg US Agg Bond Index through 03/26/2020, account performance from 03/27/2020 through 04/03/2020, and the Bloomberg US Agg Bond Index thereafter.
- The Low Duration Fixed Income Custom Index consists of the Bloomberg US Gov't Crdt 1-3 Yr Bond Index through 06/30/2019 and the Bloomberg US Gov't 1-3 Yr Bond Index thereafter.
- The State Street All Cap Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross) through 02/27/2020, State Street All Cap account performance on 02/28/2020, and the S&P 500 Index thereafter.
- The EMD Custom Index consists of the JPM GBI-EM Gbl Dvf'd Index through 02/29/2020 and 70% JPM GBI-EM Gbl Dvf'd Index / 30% JPM CEMBI Brd Dvf'd Index thereafter.
- The Payden & Rygel Custom Index consists of the Bloomberg US Corp Inv Grade Index through 03/25/2020, account performance from 03/26/2020 through 03/31/2020, and Bloomberg US Corp Inv Grade Index thereafter.
- Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.
- The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. The primary benchmark for JP Morgan Cash is the ICE BofAML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index through 06/30/2019, and the ICE BofAML 3 Mo US T-Bill Index thereafter.
- The Wyo-Star Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for Wyo-Star Cash is the ICE BofAML 3 Mo US T-Bill Index and for Wyo-Star Extd is the JP Morgan Blended Index.

Performance & Holding Comments

RVK, Inc. shows performance beginning with the first full month following inception. Inception date shown for the Int'l Equity and JP Morgan Cash Composites represents the first date of performance calculated by RVK, Inc.

Performance shown for Pooled Funds is calculated on a capital-weighted basis using beginning-period allocations and does not reflect net cash flows.

Performance shown for the UW Portfolio Management Program prior to 07/01/2009 includes their participation in the State Agency Pool. Performance calculated for the UW Portfolio Management Program after 02/01/2013 has not been verified by RVK as the assets have been moved to a platform in which the custodian does not provide a reconcilable return.

Performance for the Internal Intermediate Govt Fixed Income Portfolio excludes distressed securities taken in-kind following the liquidation of WAMCO Core Plus.

Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.

Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark.

Composite performance shown for Fixed Income is historically exclusive of convertibles.

Alternative Investment Comments

Reporting for Private Equity performance was changed from cost basis to the latest portfolio valuation adjusted for cash flows, consistent with the supplementary alternatives report. This methodology change involved reflecting the difference between cost value and the most recent valuation, resulting in a significant positive performance impact on the total fund during 2nd quarter 2008.

Valuations for non-core real estate and private equity were changed from a one-quarter lag to as of the most recent valuation, adjusted for subsequent cash flows. This methodology change involved reflecting all cash flows occurring during 4th quarter 2011 as of January 2012, resulting in a minor positive performance impact on the total fund during 1st quarter 2012. Investment (Cost) Values are not lagged.

Performance for non-core real estate and private equity investments is calculated on an IRR basis. For further analysis, please refer to the supplementary alternatives performance report.

Cheyenne Capital Fund valuations set forth herein could be materially different once underlying investments are realized. Market conditions at the time of exit could be substantially different than at the reporting period, resulting in valuations different than those represented above.

Miscellaneous Comments

Wyoming State Treasurer's Office fiscal year ends on June 30th.

Fixed Income style peer groups have low populations, and may cause ranks to change significantly from quarter to quarter.

"IM" is the acronym for Investment Metrics, the provider of peer group data used in ranking investment manager and asset class performance.

During the 4th quarter of 2012, WAMCO Core Plus, Neuberger Berman Core Plus, PIMCO Core Plus, PIMCO Mortgages, JP Morgan Mortgages, WAMCO Corporates, Logan Circle, and PIMCO Global/EM began the liquidation process to transition assets to the State's new fixed income asset class structure. The proceeds were used to fund State Street TIPS, C.S. McKee, JP Morgan Core, MacKay Shields, Neuberger Berman Core, PIMCO Core, and Wells Capital. During the 1st quarter of 2013, additional assets were transitioned to Neuberger Berman Credit, Seix, Investec, and Stone Harbor.

During the 4th quarter of 2014, State Street S&P 500 and Gabelli began the liquidation process to transition assets to the State's new US equity asset class structure. The proceeds were used to fund State Street All Cap, Epoch, Lazard, and RBC. During the 1st quarter of 2015, additional assets were transitioned to Arrowstreet.

During the 4th quarter of 2015, the Workers Compensation Fund was reclassified as a Permanent Fund.

During the 1st quarter of 2016, the State funded the Internal International Equity Portfolio, using proceeds from the liquidation of The Boston Company.

During the 3rd quarter of 2016, Bloomberg acquired the Barclays Global Family of Fixed Income Indices. Naming conventions have been updated to "Bloomberg" to reflect the acquisition.

During the 3rd quarter of 2016, MacKay Shields began the liquidation process, with proceeds used to increase allocations to C.S. McKee and the Internal Intermediate Govt Fixed Income Portfolio.

During the 1st quarter of 2017, Neuberger Berman Core and Wells Capital began their respective liquidation processes.

During the 2nd quarter of 2017, Manning & Napier began the liquidation process.

During the 4th quarter of 2017, Lazard began the liquidation process.

During the 4th quarter of 2017, Intercontinental Exchange (ICE) acquired the BofA Merrill Lynch Global Research FICC index platform. As a result, all BofA Merrill Lynch indices have been rebranded to "ICE BofA Merrill Lynch".

During the 1st quarter of 2018, Arrowstreet was reclassified as International Equity and the Internal Low Duration portfolio was funded.

During the 2nd quarter of 2018, Cohen & Steers, Grosvenor Diversified Hedge Funds, and Internal Diversified Hedge Funds were funded.

Miscellaneous Comments (Continued)

During the 2nd quarter of 2018, the Hybrid Assets Composite was created for convertibles, preferred stock, and MLPs.

During the 2nd quarter of 2018, RBC began the liquidation process.

During the 3rd quarter of 2018, Internal Equity Russell 2000 was funded.

During the 3rd quarter of 2018, Harvest was funded.

During the 4th quarter of 2018, Logan Circle, Internal Long Duration Fixed Income Portfolio, and State Street Low Duration were funded.

During the 1st quarter of 2019, Epoch began the liquidation process.

During the 2nd quarter of 2019, Allianz, Stone Harbor, Fisher, JPM Core, NB Credit, Seix, State Street TIPS, and State Street Low Duration began the liquidation process.

During the 3rd quarter of 2019, Credit Suisse, Octagon, and Internal Ladder Portfolio were funded.

During the 4th quarter of 2019, Harding Loevner, State Street Russell 2000, Harvest Passive, Payden & Rygel, and JPM MBS were funded, and CS McKee began the liquidation process.

Glossary

Active Return - The difference between the investment manager/composite performance relative to the performance of an appropriate market benchmark.

Active Share - Measures the degree to which the holdings of a fund differ from the holdings of the benchmark. Active share is calculated by taking the sum of the absolute value of the differences of the weight of each holding in the fund versus the weight of each holding in the benchmark and dividing by two.

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. *Average Quality for managers unable to provide this statistic is instead provided by Morningstar; if unavailable on Morningstar, it has been estimated using a credit quality distribution provided by the manager.* There are two primary rating agencies in the US. *Moody's* assigns ratings on a system that employs up to four symbols (consisting of letters and numbers) such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. *Standard & Poor's (S&P)* employs a system that uses + and - along with letters such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>
Higher Credit Quality – Investment Grade			Lower Credit Quality – Below Investment Grade		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	B	B2	
A	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Benchmark Effect - The difference between the blended return of each respective managers' benchmark within a composite and the composite's benchmark return.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Box Plots - A graphical representation of the distribution of observations. From top to bottom, the four boxes represent the spread between the maximum value and the minimum value in each quartile. A quartile represents the values that divide the observations into four quarters (i.e., 1st quartile, 2nd quartile, 3rd quartile, and 4th quartile). The median observation is where the 2nd quartile and 3rd quartile meet.

Buy and Hold Attribution - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS) which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector, as defined by S&P Capital IQ data.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category. Stocks are unclassified when there is not enough data to determine a size and style metric.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Consumer Confidence - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

Federal Funds Rate - The interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. It is one of the most influential interest rates in the US economy, since it affects monetary and financial conditions, which in turn have a bearing on key aspects of the broad economy including employment, growth and inflation.



Glossary

- Option-Adjusted Spread** - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.
- Purchasing Managers Index (PMI)** - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.
- Real Gross Domestic Product (Real GDP)** - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.
- US Dollar Total Weighted Index** - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- VIX** - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."
- Cash Flow Effect** - The composite's active return minus the sum of each managers' active return minus the benchmark effect.
- Consistency** - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.
- Convexity** - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.
- Correlation** - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.
- Coupon Rate** - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.
- Current Yield** - The annual income of a security divided by the security's current price.
- Down Market Capture** - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.
- Downside Risk** - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative returns for the selected periodicity. The higher the factor, the riskier the product.
- Earnings Per Share** - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.
- Effective Duration** - The approximate percentage change in a bond's price for a 100 basis point change in yield.
- Excess Return vs. Market** - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.
- Excess Return vs. Risk Free** - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.
- Excess Risk** - A measure of the standard deviation of a portfolio's performance relative to the risk free return.
- Expense Ratios** - Morningstar is the source for mutual fund expense ratios.
- Gain/Loss** - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.
- Indices** - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.
- Information Ratio** - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.
- Liability Driven Investing (LDI)** - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.
- Estimated Funded Status** - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.
- Estimated PV of Liabilities** - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.
- Duration of Liabilities** - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary.
- Duration of Assets** - The dollar-weighted average duration of all the individual Plan assets.
- Estimated Plan Hedge Ratio** - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.

Glossary

Modified Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

Mutual Fund Performance - Whenever possible, manager performance is extended for any share class that does not have 10 years of history. Using Morningstar's methodology, a single ticker within the same fund family (often the oldest share class) is chosen to append historical performance.

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client performance compiled from consultant and custodian data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans. Plan Sponsor Peer Groups are gross of fees.

Investment Manager Peer Groups - RVK utilizes Investment Metrics' Peer Groups for investment manager peer comparison and ranking. The Investment Metrics Peer Group database includes performance and other quantitative data for over 840 investment management firms and 29,000 investments products, across more than 160 standard peer groups. Mutual Fund Peer Groups are net of fees.

Percentile Rankings - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value

100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4th percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK calculates performance for investment managers and composites using different methodologies.

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of $\geq 10\%$ of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Price to Earnings Ratio - The ratio of a company's share price to its per-share earnings

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag.

Return - Compounded rate of return for the period.

% Return - The time-weighted rate of return of a portfolio for a given period.

R-Squared - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Risk Free Benchmark - ICE BofAML 3 Mo US T-Bill Index unless specified otherwise.

Glossary

RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

<u>Asset Class</u>	<u>RVK Liquidity Rating</u>	<u>Asset Class</u>	<u>RVK Liquidity Rating</u>
<u>Liquid Investments</u>		<u>Less Liquid Investments</u>	
T-Bills and Treasuries	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Bank Loans	50
TIPS	95	Stable Value (Plan Sponsor Directed)	50
US Large Cap Equity	95	Absolute Return Strategies	35
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Non-US Large Cap Equity	90	<u>Not Liquid Investments</u>	
Global Tactical Asset Allocation	88	Core Real Estate	25
US Small Cap Equity	85	Core Plus Real Estate	15
REITS	85	Non-Core Real Estate	5
Non-US Small Cap Equity	85	Private Equity Funds of Funds	5
Emerging Markets Equity	85		
Core Fixed Income	85		
Core Plus Fixed Income	80		

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

Spread Duration - The approximate percentage change in a bond's price for a 100 basis point change in its spread over a Treasury of the same maturity.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Time Period Abbreviations - **QTD** - Quarter-to-Date. **CYTD** - Calendar Year-to-Date. **FYTD** - Fiscal Year-to-Date. **YOY** - Year Over Year.

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

<u>Alpha</u>	<u>Capital Appreciation</u>	<u>Capital Preservation</u>	<u>Inflation</u>
Absolute Return Strategies	Public Equity	Core Fixed Income	TIPS
Currency Overlay	Private Equity	CMBS Fixed Income	Bank Loans
	Preferred Securities	Asset Backed Fixed Income	Core Real Estate
	High Yield	Domestic Core Plus Fixed Income	Real Return
	Convertible Fixed Income	Mortgage Backed Fixed Income	Inflation Hedges
	TALF Funds	International Developed Fixed Income	REITS
	Distressed Debt	Cash Equivalents	Commodities
	Emerging Market Fixed Income	Stable Value	
	Value Added Real Estate		
	Opportunistic Real Estate		

Total Fund Attribution - The Investment Decision Process (IDP) model provides an approach to evaluating investment performance that applies to all asset classes and investment styles. The IDP model is based on a top-down hierarchy framework of investment decisions, with each decision contributing to the overall profit or loss. The IDP approach starts from the strategic asset allocation and follows the flow of the investments down to the manager's skill.

Strategic Asset Allocation (SAA) - The percentage return gained or lost from the long-term strategic asset allocation decision, the most significant determinant of long-term performance. SAA is the product of the target asset allocation multiplied by the corresponding benchmark returns.

Tactical Asset Allocation (TAA) - The percentage return gained or lost from not having been precisely allocated at the target asset allocation mix, whether by deviations that are tactical in nature or a by-product of moving towards the target mix. TAA is the product of the actual asset allocation multiplied by the broad asset class benchmarks, less the SAA.

Style Selection (SS) - The percentage return gained or lost from intentional style biases within each asset class (e.g. value rather than core or overweight to emerging markets relative to benchmark). SS is the product of the actual manager allocation within each asset class multiplied by their specific benchmark, less TAA.

Manager's Skill (MS) - The percentage return gained or lost from manager value added relative to their specific benchmark. MS is the product of the actual manager allocation multiplied by their achieved excess return.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Glossary

Treynor Ratio - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolios return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return. The 30-Day SEC Yield is similar to the Yield to Maturity and is reported for mutual funds.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.

PORTLAND

BOISE

CHICAGO

NEW YORK

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