

# MONTANA

## BOARD OF INVESTMENTS

REGULAR BOARD MEETING  
November 20, 2024

### COMMITTEE MEETINGS

#### A. **Audit Committee – Mark Barry, Chair**

Committee Members – Peterson, Bennett, Trost, Iverson

9:30 AM

1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
2. Approval of October 9, 2024, Committee Minutes
3. Executive Director Comments
4. Audit Checklist
5. Annual Statutory Compliance Checklist - **Decision**
6. Audit Committee Charter Review – **Decision**
7. Draft FY 2024 Annual Report – **Decision**

### BREAK

10:30 AM

#### Tab 1 **CALL TO ORDER – Jack Prothero, Chairman**

10:45 AM

- A. Notice of Video Recording of Meeting
- B. Roll Call
- C. Public Comment – *Public Comment on issues with Board Jurisdiction*
- D. Approval of the October 9, 2024, Meeting Minutes
- E. Administrative Business
  1. Audit Committee Report - **Decisions**
- F. Comments from TRS and PERS Board Members
- G. Comments from Board Legislative Liaisons

#### Tab 2 **EXECUTIVE DIRECTOR REPORTS – Dan Villa**

11:15 AM

- A. Member Requests from Prior Meeting
- B. Monthly Snapshot
- C. Memorandum of Understanding
- D. 2025 Legislative Session
- E. LPAC Annual Reporting
- F. Securities Litigation Annual Review
- G. Policy 10.217 – Reauthorization of Investment Vendors

#### Tab 3 **MONTANA LOAN PROGRAM – Doug Hill, Director of Commercial Loans**

11:30 AM

- A. Commercial and Residential Portfolios Report

#### Tab 4 **BOND PROGRAM – Louise Welsh, Director of Municipal Loans**

11:45 PM

- A. INTERCAP
  1. Activity Report
  2. Staff Approved Loans Report

### LUNCH

12:00 PM

<b>Tab 5 TRS and MPERA Relationship – Bill Holahan, Executive Director, MPERA &amp; Shawn Graham, Executive Director, TRS</b>	<b>1:00 PM</b>
<b>Tab 6 INVESTMENT POLICY STATEMENTS - <i>Decisions</i></b>	<b>1:30 PM</b>
<b>Tab 7 RVK</b>	<b>1:45 PM</b>
<b>BREAK</b>	<b>2:45 PM</b>
<b>Tab 8 INVESTMENT UPDATE</b>	<b>3:00 PM</b>
<b>RECAP OF STAFF TO DO LIST AND ADJOURNMENT – Jack Prothero, Chairman</b>	



# MONTANA

## BOARD OF INVESTMENTS

### REGULAR BOARD MEETING MINUTES OCTOBER 9, 2024

Official meeting minutes are the recordings posted at <https://leg.mt.gov/lrd/>  
(timestamps may differ)

#### Call to Order

The Board of Investment's meeting was called to order by Board Chairman Jack Prothero at 11:34 a.m. on Wednesday, October 9, 2024.

#### Attendance

Board Members Present: Jack Prothero, Tim Kober, Mark Barry, Cindy Younkin, Maggie Peterson, Dwaine Iverson, Jeff Meredith, Dan Trost, Porter Bennett

Board Members Absent: None

Legislative Liaisons Present: None

Legislative Liaisons Absent: Senator Jeremy Trebas, Representative Bob Keenan

Board Staff Present: Brenda Thomas, Cort Jensen, Dan Villa, Doug Hill, Eron Krpan, Jason Brent, Jessilynn Salois, John Carpenter, John Romasko, Jon Putnam, Julie Feldman, Kirsten Haswell, Louise Welsh, Peggy MacEwen, Peggy Saarela, Polly Boutin, Roberta Diaz, Sam Holman, Savannah Morgan, Sheli Jacoby, Steve Strong, Tim House, Willie Gross

Interested Parties Present: Jay Getz - @HOME Montana Properties, Missoula, MT; Cyril Espanol – With Intelligence; Franco Wang – CEM Benchmarking; Becky Gratsinger – RVK; Paige Blaser - RVK

#### **Tab 1 CALL TO ORDER** (00:08 – first recording)

##### **A. Notice of Video Recording** (00:25)

Chairman Prothero advised of audio and video recording of the meeting.

##### **B. Roll Call** (00:32)

The roll was taken. Nine Board members were present, forming a quorum.

##### **C. Public Comment** (01:33)

Chairman Prothero asked for public comment. None was given.

##### **D. Approval of Minutes** (01:53)

October 9, 2024, Regular Board Meeting Minutes

Member Younkin motioned to approve. Member Trost seconded the motion, which passed unanimously.

##### **E. Administrative Business**

##### **1. Audit Committee Report** (02:26)

Committee Chair Barry briefed the Board.

Committee Chair Barry motioned for full Board approval of the SOC 1, Type 2 Audit Report. Member Peterson seconded the motion, which passed unanimously.

**2. Loan Committee Report (06:52)**

Committee Chair Jeff Meredith briefed the Board.

**3. Human Resources Committee Report (07:29)**

Committee Chair Maggie Peterson briefed the Board.

Committee Chair Maggie Peterson motioned for full Board approval of the staff recommendation to name Ms. Peggy MacEwen as the Chief Operating Officer/Deputy Director in an exempt position and modify the salary to align with the new title. Member Younkin seconded the motion, which passed unanimously.

**F. Comments from Pension Board Members (08:49)**

Member Trost and Member Peterson briefed the Board.

**G. Comments from Legislative Liaisons (15:13)**

Senator Jeremy Trebas and Representative Bob Keenan were absent.

**Tab 2 EXECUTIVE DIRECTOR REPORTS (15:48)**

**A. Member Requests from Prior Meeting**

Executive Director Villa briefed the Board.

**B. Monthly Snapshot**

Executive Director Villa briefed the Board.

**C. 2025 Board Meeting Calendar - Decision**

Executive Director Villa briefed the Board. After discussion, it was decided that the December 2025 meeting would be one day and held on December 10.

Chairman Prothero asked for a motion to approve the 2025 Board meeting calendar with the included change. Member Younkin motioned to approve. Member Peterson seconded the motion, which passed unanimously.

**Tab 3 INVESTMENT POLICY STATEMENTS - Decision (00:15 – in second recording)**

Executive Director Villa briefed the Board and answered questions.

Chairman Prothero called for a motion to approve the change recommended to Investment Policy Statement 40.943. Member Trost motioned to approve. Member Peterson seconded the motion, which passed unanimously.

Chairman Prothero called for a motion to approve the new Repayment Account Investment Policy Statement 40.954. Member Peterson motioned to approve. Member Trost seconded the motion, which passed unanimously.

**Tab 4 CEM BENCHMARKING – COST REPORTING ANALYSIS (06:07)**

Franco Wang with CEM Benchmarking briefed the Board and answered questions.

**Tab 5 SEPARATE ACCOUNTS INVESTMENT REVIEW (40:00)**

Jon Romasko, Kirsten Haswell, Sam Holman, and Willie Gross briefed the Board and answered questions.

**Tab 6 ASSET ALLOCATION (01:23:45)**

Jon Putnam briefed the Board and answered questions.

Chairman Prothero called for a motion to approve the staff-recommended changes to the Consolidated Asset Pension Pool (CAPP). Member Bennett motioned to approve. Member Barry seconded the motion, which passed unanimously.

Chairman Prothero called for a motion to approve the staff-recommended changes to The Trust Funds Investment Pool (TFIP). Member Younkin motioned to approve. Member Bennett seconded the motion, which passed unanimously.

Chairman Prothero called for a motion to approve the staff-recommended changes to the State Fund Investment Pool (SFIP). Member Bennett motioned to approve. Member Younkin seconded the motion, which passed unanimously.

#### **RECAP OF STAFF TO-DO LIST AND ADJOURNMENT** (02:03:42)

Chairman Prothero adjourned the meeting at 3:37 p.m.

#### **MONTANA BOARD OF INVESTMENTS**

APPROVE: \_\_\_\_\_  
Jack Prothero, Chair

ATTEST: \_\_\_\_\_  
Dan Villa, Executive Director

DATE: \_\_\_\_\_



# MONTANA

## BOARD OF INVESTMENTS

**To:** Members of the Board  
**From:** Dan Villa, Executive Director  
**Date:** November 20, 2024  
**Re:** Executive Director Report


- A. Member Requests from Prior Meeting
- B. Monthly Snapshot – *Attached*
- C. 2025 Legislative Session
- D. LPAC Annual Reporting - *Attached*
- E. Securities Litigation Annual Review – *Attached*
- F. Policy 10.217 – Reauthorization of Investment Vendors - *Attached*



**STIP Sectors**

Sector	Percentage
ASSET BACKED COMMERCIAL PAPER	28.4%
TREASURIES	19.0%
CERTIFICATES OF DEPOSITS	16.6%
FEDERAL AGENCIES	13.5%
CORPORATE COMMERCIAL PAPER	11.0%
CORPORATE NOTES	10.0%
MONEY MARKET FUNDS	1.6%

\*Difference of \$177,136,839 is attributable the portion of STIP held within CAPP 97,061,745 and TFIP 15,047,509 as a cash investment and distributions held over month end 65,027,586. Such value is represented in the NAV for the CAPP and STIP columns.

MBOI Snapshot Asset Ownership View 9/30/2024 Unaudited										
									Total Net	
	CAPP Holdings	CAPP %	STIP Holdings*	STIP %	TFIP Holdings	TFIP%	Other Holdings <sup>1</sup>	Other %	Asset Value	
Total Funds \$(000)	\$15,360,083	53.58%	\$8,310,540	28.99%	\$3,192,613	11.14%	\$1,804,011	6.29%	\$28,667,246	
Pensions	CAPP	%	STIP	%	TFIP	%	Other	%	Total	
FIREFIGHTERS RETIREMENT	\$ 704,238	99.00%	\$ 7,481	1.05%	\$ -	0.00%	\$ (367,612)	0.00%	\$ 711,351	
GAME WARDENS RETIREMENT	\$ 362,062	98.83%	\$ 4,285	1.17%	\$ -	0.00%	\$ -	0.00%	\$ 366,348	
HIGHWAY PATROL RETIREMENT	\$ 230,172	98.80%	\$ 2,794	1.20%	\$ -	0.00%	\$ -	0.00%	\$ 232,965	
JUDGES RETIREMENT	\$ 142,078	98.96%	\$ 1,498	1.04%	\$ -	0.00%	\$ -	0.00%	\$ 143,576	
POLICE OFFICERS RETIREMENT	\$ 629,315	98.95%	\$ 6,667	1.05%	\$ -	0.00%	\$ -	0.00%	\$ 635,983	
PUBLIC EMPLOYEES RETIREMENT	\$ 7,407,100	98.87%	\$ 84,672	1.13%	\$ -	0.00%	\$ -	0.00%	\$ 7,491,772	
SHERIFFS RETIREMENT	\$ 579,621	98.91%	\$ 6,367	1.09%	\$ -	0.00%	\$ -	0.00%	\$ 585,988	
TEACHERS RETIREMENT	\$ 5,249,560	98.97%	\$ 54,501	1.03%	\$ -	0.00%	\$ -	0.00%	\$ 5,304,062	
VOL FIREFIGHTERS RETIREMENT	\$ 55,935	99.00%	\$ 566	1.00%	\$ -	0.00%	\$ -	0.00%	\$ 56,501	
Total	\$ 15,360,083	98.92%	\$ 168,830	1.09%	\$ -	0.00%	\$ (367,612)	0.00%	\$ 15,528,546	
Trust Funds	CAPP	%	STIP	%	TFIP	%	Other	%	Total	
ABANDONED MINE RECLAMATION	\$ -	0.00%	\$ 8,133	99.57%	\$ -	0.00%	\$ 35	0.43%	\$ 8,168	
BARKER HUGHESVILLE ST RESPONSE	\$ -	0.00%	\$ 1,694	17.75%	\$ 7,820	81.93%	\$ 31	0.32%	\$ 9,544	
BELT WATER TREATMENT PLANT	\$ -	0.00%	\$ 3,000	11.71%	\$ 22,525	87.94%	\$ 88	0.34%	\$ 25,613	
BUTTE AREA ONE REST	\$ -	0.00%	\$ 1,085	18.17%	\$ 4,869	81.51%	\$ 19	0.32%	\$ 5,974	
BUTTE AREA REDEVELOP AUTHORITY	\$ -	0.00%	\$ 1,737	12.78%	\$ 11,810	86.90%	\$ 43	0.31%	\$ 13,589	
CLARK FORK REST	\$ -	0.00%	\$ 5,091	20.12%	\$ 20,134	79.56%	\$ 82	0.32%	\$ 25,307	
CLARK FORK SITE RESP ACTION	\$ -	0.00%	\$ 5,997	11.29%	\$ 46,943	88.40%	\$ 166	0.31%	\$ 53,106	
COAL TAX PARK TRUST FUND	\$ -	0.00%	\$ 2,517	8.00%	\$ 28,848	91.69%	\$ 97	0.31%	\$ 31,463	
CULTURAL TRUST FUND	\$ -	0.00%	\$ 638	3.71%	\$ 16,502	95.99%	\$ 52	0.30%	\$ 17,192	
DEBT AND LIABILITY FREE ACCOUNT	\$ -	0.00%	\$ 216,932	99.58%	\$ -	0.00%	\$ 914	0.42%	\$ 217,846	
E HELENA GREENWAY TRAIL MAINT	\$ -	0.00%	\$ 264	27.52%	\$ 693	72.15%	\$ 3	0.33%	\$ 960	
EAST HELENA COMPENSATION FUND	\$ -	0.00%	\$ 1,610	91.00%	\$ 152	8.58%	\$ 7	0.41%	\$ 1,769	
ENDOWMENT FOR CHILDREN	\$ -	0.00%	\$ 74	4.97%	\$ 1,402	94.73%	\$ 5	0.31%	\$ 1,480	
FLYING J CECRA FACILITIES FUND	\$ -	0.00%	\$ 501	18.08%	\$ 2,260	81.60%	\$ 9	0.32%	\$ 2,770	
FWP MITIGATION TRUST	\$ -	0.00%	\$ 2,929	28.17%	\$ 6,944	66.78%	\$ 525	5.05%	\$ 10,397	
HAROLD HAMM ENDOWMENT	\$ -	0.00%	\$ 9	16.63%	\$ 44	83.05%	\$ 0	0.32%	\$ 53	
INVASIVE SPECIES TRUST FUND	\$ -	0.00%	\$ 645	19.85%	\$ 2,595	79.82%	\$ 11	0.33%	\$ 3,251	
LIBBY ASBESTOS SITE STATE COST	\$ -	0.00%	\$ 650	13.59%	\$ 4,116	86.05%	\$ 17	0.35%	\$ 4,783	
LUTTRELL PIT - OPER & MAINT	\$ -	0.00%	\$ 280	13.96%	\$ 1,720	85.73%	\$ 6	0.32%	\$ 2,006	
MONTANA HIST AND CIVICS ENDOW	\$ -	0.00%	\$ 1,480	99.58%	\$ -	0.00%	\$ 6	0.42%	\$ 1,487	
MONTANA HISTORICAL SOCIETY	\$ -	0.00%	\$ 1,067	24.93%	\$ 3,199	74.74%	\$ 14	0.33%	\$ 4,280	
MONTANA STATE LIBRARY TRUST	\$ -	0.00%	\$ 166	11.72%	\$ 1,250	87.97%	\$ 4	0.31%	\$ 1,421	
MT HOUSING INFRASTRUCTURE	\$ -	0.00%	\$ 55,931	52.57%	\$ -	0.00%	\$ 50,472	47.43%	\$ 106,403	
MT POLE SUPERFUND SETTLEMENT	\$ -	0.00%	\$ 4,591	23.99%	\$ 14,484	75.68%	\$ 63	0.33%	\$ 19,138	
NOXIOUS WEED MGMT TRUST FUND	\$ -	0.00%	\$ -	0.00%	\$ 10,405	99.70%	\$ 31	0.30%	\$ 10,436	
OLDER MONTANANS TRUST FUND	\$ -	0.00%	\$ 13	3.93%	\$ 322	95.77%	\$ 1	0.30%	\$ 336	
POTTER TRUST FUND	\$ -	0.00%	\$ 43	16.43%	\$ 217	83.25%	\$ 1	0.32%	\$ 261	
PUBLIC SCHOOL TRUST	\$ -	0.00%	\$ 10,894	1.15%	\$ 934,466	98.55%	\$ 2,846	0.30%	\$ 948,205	
REAL PROPERTY TRUST FUND	\$ -	0.00%	\$ 319	4.42%	\$ 6,879	95.27%	\$ 22	0.31%	\$ 7,220	
RESOURCE INDEMNITY TRUST FUND	\$ -	0.00%	\$ 23	0.02%	\$ 106,807	99.68%	\$ 321	0.30%	\$ 107,151	
SMELTER HILL UPLANDS REST FUND	\$ -	0.00%	\$ 1,406	16.06%	\$ 7,319	83.62%	\$ 28	0.32%	\$ 8,753	
STREAMSIDE TAILINGS OU FUND	\$ -	0.00%	\$ 2,116	12.61%	\$ 14,618	87.08%	\$ 53	0.31%	\$ 16,787	
TOBACCO TRUST FUND	\$ -	0.00%	\$ 8,540	2.74%	\$ 302,272	96.96%	\$ 944	0.30%	\$ 311,757	
UPPER BLACKFT RESP ACT & REST	\$ -	0.00%	\$ 881	90.85%	\$ 85	8.74%	\$ 4	0.41%	\$ 969	
UPPER CLRK FK RIVER BASIN RES	\$ -	0.00%	\$ 337	1.48%	\$ 22,393	98.22%	\$ 69	0.30%	\$ 22,799	
UPPER CLRK FK RIVER BASIN REST	\$ -	0.00%	\$ 2,968	4.40%	\$ 64,267	95.30%	\$ 205	0.30%	\$ 67,440	
WILDLIFE HABITAT TRUST FUND	\$ -	0.00%	\$ 1,453	8.65%	\$ 15,284	91.04%	\$ 52	0.31%	\$ 16,789	
WORK FORCE HOUSING	\$ -	0.00%	\$ 11,497	96.50%	\$ -	0.00%	\$ 418	3.50%	\$ 11,914	
YELLOWSTONE PIPELINE CLEANUPFD	\$ -	0.00%	\$ 2,009	32.69%	\$ 4,116	66.97%	\$ 21	0.34%	\$ 6,146	
ZORTMAN/LANDUSKY LT WATER	\$ -	0.00%	\$ 17,330	99.58%	\$ -	0.00%	\$ 73	0.42%	\$ 17,404	
ZORTMANLANDUSKY LT WATER TRUST	\$ -	0.00%	\$ 22,539	99.58%	\$ -	0.00%	\$ 95	0.42%	\$ 22,635	
Total	\$ -	0.00%	\$ 399,389	18.62%	\$ 1,687,760	78.68%	\$ 57,855	2.70%	\$ 2,145,004	
Coal Severance	CAPP	%	STIP	%	TFIP	%	Other	%	Total	
BIG SKY ECONOMIC DEV FUND	\$ -	0.00%	\$ 4,953	3.31%	\$ 144,296	96.39%	\$ 450	0.30%	\$ 149,698	
COAL SEVERANCE TAX PERM FUND	\$ -	0.00%	\$ 27,035	4.87%	\$ 339,633	61.21%	\$ 188,174	33.91%	\$ 554,842	
CONSERVATION DISTRICT FUND	\$ -	0.00%	\$ 6,233	24.57%	\$ 19,070	75.16%	\$ 71	0.28%	\$ 25,374	
MONTANA COAL ENDOWMENT FUND	\$ -	0.00%	\$ 3,069	1.12%	\$ 270,080	98.58%	\$ 824	0.30%	\$ 273,974	
MT COAL ENDOWMENT REGIONAL WAT	\$ -	0.00%	\$ 1,192	1.25%	\$ 93,477	98.44%	\$ 286	0.30%	\$ 94,954	
SCHOOL FACILITIES FUND	\$ -	0.00%	\$ 4,491	2.10%	\$ 208,482	97.60%	\$ 643	0.30%	\$ 213,616	
Total	\$ -	0.00%	\$ 46,973	3.58%	\$ 1,075,037	81.91%	\$ 190,448	14.51%	\$ 1,312,458	
Operating Funds	CAPP	%	STIP	%	TFIP	%	Other	%	Total	
FWP GENERAL LICENSE ACCOUNT	\$ -	0.00%	\$ 63,191	65.25%	\$ 30,093	31.07%	\$ 3,557	3.67%	\$ 96,841	
MONTANA LOCAL GOVERNMENTS	\$ -	0.00%	\$ 1,581,126	99.57%	\$ -	0.00%	\$ 6,867	0.43%	\$ 1,587,993	
MONTANA STATE AGENCIES	\$ -	0.00%	\$ 2,591,541	99.58%	\$ -	0.00%	\$ 10,838	0.42%	\$ 2,602,378	
MONTANA STATE UNIVERSITY	\$ -	0.00%	\$ 318,160	84.33%	\$ 57,585	15.26%	\$ 1,530	0.41%	\$ 377,275	
MONTANA TECH	\$ -	0.00%	\$ 7,520	93.92%	\$ 454	5.67%	\$ 33	0.41%	\$ 8,007	
STATE TREASURER'S FUND	\$ -	0.00%	\$ 2,762,232	90.53%	\$ 258,694	8.48%	\$ 30,417	1.00%	\$ 3,051,343	
UNIVERSITY OF MONTANA	\$ -	0.00%	\$ 78,764	72.61%	\$ 29,336	27.04%	\$ 380	0.35%	\$ 108,480	
Total	\$ -	0.00%	\$ 7,402,534	94.51%	\$ 376,161	4.80%	\$ 53,622	0.68%	\$ 7,832,318	
Insurance Reserves	CAPP	%	STIP	%	TFIP	%	Other	%	Total	
HAIL INSURANCE INVESTMENTS	\$ -	0.00%	\$ 5,646	99.58%	\$ -	0.00%	\$ 24	0.42%	\$ 5,670	
MONTANA STATE FUND	\$ -	0.00%	\$ 46,704	3.05%	\$ -	0.00%	\$ 1,486,334	96.95%	\$ 1,533,038	
MUS GROUP INSURANCE	\$ -	0.00%	\$ 86,889	85.23%	\$ 12,725	12.48%	\$ 2,336	2.29%	\$ 101,950	
MUS WORKERS COMPENSATION	\$ -	0.00%	\$ 9,880	70.98%	\$ 3,985	28.63%	\$ 54	0.39%	\$ 13,920	
PERS-DCRP LT DISABILITY PLAN	\$ -	0.00%	\$ 671	5.97%	\$ -	0.00%	\$ 10,563	94.03%	\$ 11,233	
STATE EMPLOYEE GROUP BENEFITS	\$ -	0.00%	\$ 141,468	77.92%	\$ 36,943	20.35%	\$ 3,136	1.73%	\$ 181,547	
SUBSEQUENT INJURY TRUST FUND	\$ -	0.00%	\$ 1,556	99.50%	\$ -	0.00%	\$ 8	0.50%	\$ 1,564	
Total	\$ -	0.00%	\$ 292,813	15.84%	\$ 53,654	2.90%	\$ 1,502,454	81.26%	\$ 1,848,921	

Short Term Investment Pool			
Account	# Accounts	Total Market Value	%
Total State	363	6,901,608,582	81.3%
Total Local	199	1,586,067,939	18.7%
<b>Total STIP</b>	<b>562</b>	<b>\$ 8,487,676,521</b>	<b>100.0%</b>
STIP Reserve		\$ 91,990,589	
Prior month average STIP Yield		5.1695%	

Intercap Statistics	
Loans Outstanding	\$ 74,867,517
Bonds Outstanding	\$ 74,000,000
Number of Borrowers	127
Loan Rate	5.75%

**Montana Department of Commerce and Montana Board of Investments**  
**Memorandum of Understanding No. 1-2024**

**Section 1. Parties**

This memorandum of understanding (MOU) is entered into by the Montana Department of Commerce (MDOC) and the Montana Board of Investments (MBOI).

**Section 2. Background**

- a) MBOI is solely responsible for investment of public funds and management of the state Unified Investment Program. Art. VIII, § 13, Mont. Const.; § 17-6-201, MCA. MBOI has other responsibilities as prescribed by statute.
- b) MBOI is authorized to hire and prescribe the duties and annual salaries of eight employees, including a chief investment officer, executive director, and six professional staff (MBOI Professional Staff). § 2-15-1808(2), MCA. MBOI also has authority to hire employees to assist in the sale of bond anticipation notes, § 17-5-1507(3)(a), MCA, and as necessary to carry out its powers under the Municipal Finance Consolidation Act, § 17-5-1611(11), MCA.
- c) MBOI is in all other respects administratively attached to MDOC. § 2-15-1808(1), MCA.
- d) MBOI must exercise its quasi-judicial, fiduciary, and policy-making functions independently of MDOC. § 2-15-121(1)(a), MCA.
- e) MDOC must direct and supervise budgeting, recordkeeping, and other administrative services to MBOI, including the provision of additional staff to MBOI and concurrent authority over MBOI staffing decisions. § 2-15-121(2), MCA; *Miske v. Mont. Dep't of Nat. Res. & Conservation*, 2023 MT 141.
- f) MBOI Professional Staff and three additional employees as designated by MBOI are exempt from Parts 1 through 3 and 10 of Title 2, Chapter 18. § 2-18-103(10).

**Section 3. Purpose and Objective**

The purpose of this MOU is to clarify the administrative and clerical responsibilities between MBOI and MDOC regarding MBOI staff, budgeting, and reports.

**Section 4. Allocation of Responsibilities**

- a) MDOC and MBOI agree that their authority and functions are as follows:

i) SABHRS Data Entry/Processing (Human Resources and Fiscal)

MBOI is responsible for data entry tasks such as payroll, employee reimbursements, pro cards; accounting such as payables, receipts, journals, and budget status reporting; and substantive review and approval of employee reimbursements, pro cards, accounting, etc., subject to rules and procedures established by the Montana Department of Administration (MDOA). MDOC may monitor MBOI to ensure compliance at MDOC's discretion.

ii) Recruitment and Selection

MBOI is responsible for management of the recruitment and selection process of MBOI staff, including all recruitment postings, selection of employees, and records maintenance, subject to rules and procedures established by MDOA pursuant to Title 2, Chapter 18. MDOC may monitor MBOI to ensure compliance at MDOC's discretion. MDOC shall approve the hiring of MDOC staff paid for with revenue from the assets MBOI manages provided MBOI demonstrates to MDOC that the hire is exclusively for the operations and obligations of the assets MBOI manages and is a reasonable administrative expense of the assets MBOI manages, as required by law.

iii) Supervision, Performance Management, Employee Relations, and Discipline

A) MBOI is responsible for supervising and managing employee performance, relations, discipline, and personnel files for MBOI staff. MDOC must be immediately notified of any disciplinary matters as they arise and may otherwise monitor MBOI to ensure compliance with this responsibility at MDOC's discretion. All MBOI staff personnel files currently in the possession of MDOC shall be transferred to MBOI within 30 days of the execution of this MOU.

B) MDOC agrees to provide uninterrupted, necessary access to MBOI Staff and MDOC Staff Providing Services to MBOI to the SABHRS and SOMRS systems to efficiently and effectively perform MBOI HR functions.

iv) Pay and Compensation

MBOI shall be responsible for an employee pay plan, professional growth plans, and maintaining requisite documentation for MBOI staff, subject to MDOA rules implementing Title 2, Chapter 18, provided that MBOI Professional Staff and three additional staff designated by MBOI are exempt from Parts 1 through 3 and 10 of Title 2, Chapter 18 pursuant to § 2-18-103(1), MCA. MDOC may monitor MBOI to ensure compliance with applicable employment laws and MDOA rules at MDOC's discretion.

v) Classification

MBOI must use MDOC, MDOA, or contractors approved by MDOA for classification of non-exempt positions.

vi) Budgetary Requests

As required by MCA 2-15-121(2)(b), MBOI must submit timely budgetary requests through MDOC. MDOC shall include all budget requests paid for from the revenue of the assets managed by MBOI in MDOC's budget provided MBOI demonstrates to MDOC that the request is exclusively for the operations, obligations, and reasonable expenses of the assets MBOI manages, as required by law. MBOI may input budgetary requests on IBARs or the state budget system through MDOC.

vii) Reports

MBOI may present required reports to the Governor and the Legislature on its own behalf.

**Section 4. Term of MOU**

The initial term of this MOU shall commence upon execution by both parties and shall conclude on June 30, 2025. Thereafter, the term of this MOU will automatically renew for successive biennia unless one party provides written notice to the other party at least 60 days in advance of the end of the then existing term that it does not wish to renew the term of this MOU.

**Section 5. Amendment**

This MOU may be amended by a written agreement signed by both parties.

**Section 6. Integration**

This MOU represents the parties' complete and final understanding and supersedes all prior agreements, informal understandings, or oral agreements.

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Paul Green      Date  
Director, MDOC

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Dan Villa      Date  
Executive Director, MBOI

Approved for Legal Content:

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John Semmens      Date  
Chief Legal Counsel, MDOC

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Cort Jensen      Date  
Chief Legal Counsel, MBOI



# MONTANA

## BOARD OF INVESTMENTS

**TO:** Members of the Board  
**FROM:** Doug Hill, Director of In-State Loan Programs  
**DATE:** November 20, 2024  
**RE:** Commercial and Residential Loan Portfolios

The Participation Loan Program reflected an outstanding balance, as of September 30, 2024, of \$101,437,461 and represents 47 loans with a yield of 2.89%. There are two loan reservations that total \$17,714,042 and one loan committed for \$2,280,000. There are no past-due loans.

The Infrastructure Loan Program reflected an outstanding balance, as of September 30, 2024, of \$7,598,517 and represents 7 loans with a yield of 4.07%. There is one loan committed for \$1,650,000. There are no past-due loans.

The Intermediary Relending Program reflected an outstanding balance, as of September 30, 2024, of \$5,453,839 and represents 40 loans with a yield of 2.00%. There are two loan reservations that total \$583,333. There are no past-due loans.

The Science and Tech portfolio reflected an outstanding balance, as of September 30, 2024, of \$308,862 and represents one loan with a yield of 7.50%. There are no past-due loans.

The Montana Facility Finance Authority portfolio reflected an outstanding balance, as of September 30, 2024, of \$11,230,563, and represents 16 loans with a yield of 3.36%. There are two loan reservations that total \$2,156,651. There are no past-due loans.

The Veterans Home Loan Mortgage portfolio reflected an outstanding balance, as of September 24, 2024, of \$47,823,483 and represents 269 loans with a yield of 2.13%. There are seven loan reservations that total \$2,005,550. There are three loans over 90 days past due, totaling \$482,123, or 1% of the portfolio.

The Multifamily Coal Trust Homes Program reflected an outstanding balance, as of September 24, 2024, of \$24,918,195. There are 6 funded pre-HB819 loans that total \$11,943,953 with a yield of 2.21%. There is one committed loan for \$1,932,000 with an interest rate of 2.00%. There are four loans funded post-HB819 that total \$12,974,242 with a yield of 3.65%. There are seven committed loans totaling \$21,957,845 with a yield of 3.65%. There are five reserved loans totaling \$16,677,031 with a yield of 3.82%. The October minimum rate is 3.49%, and the average coal trust investment performance is 3.99%. There are no past-due loans.

The Residential loan portfolio reflected an outstanding balance, as of September 24, 2024, of \$1,033,717 and represents 32 loans with a yield of 6.25%. There are no outstanding reservations. There are no loans over 90 days past-due.

The Montana Down Payment Assistance Program reflected an outstanding balance, as of September 30, 2024, of \$48,436,744 and represents 92 loans. Repayment of these loans begins in January 2027.





# MONTANA

BOARD OF INVESTMENTS

## INTERCAP

# Q1

### \$120M Bond Series 2022:

Current Bond Rate	5.049%
Outstanding	74,000,000
Available for Drawdown	46,000,000

<b>Total Committed</b>	<b>752,660,055</b>
<b>Total Funded</b>	<b>716,960,627</b>

### Loans:

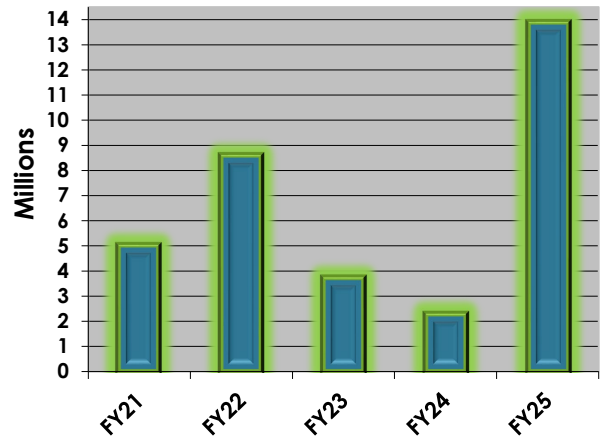
Current Loan Rate	5.75% auto
Outstanding	74,867,517
Pending Commitments	35,699,428

Borrowers	127
Debt Service Schedules	236
Autopay	89%

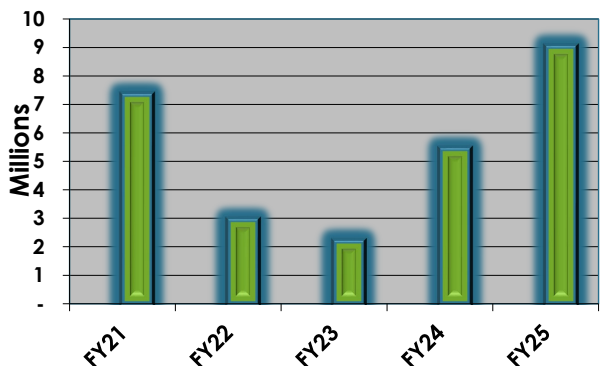
FY2025		
Month	Commitments	Fundings
July-24	300,000	7,486,040
August	11,436,720	1,137,340
September	2,180,000	430,401
October		
November		
December		
January		
February		
March		
April		
May		
June-25		
<b>To Date</b>	<b>13,916,720</b>	<b>9,053,782</b>

Note: Commitments include withdrawn and expired loans.

### Commitments FY Q1 Comparison



### Fundings FY Q1 Comparison



### Variable Loan Rate History February 16, 2017 - February 15, 2025

February 16, 2017 - February 15, 2018	<u>2.50%</u>
February 16, 2018 - February 15, 2019	<u>3.15%</u>
February 16, 2019 - February 15, 2020	<u>3.37%</u>
February 16, 2020 - February 15, 2021	<u>2.50%*</u>

February 16, 2021 - February 15, 2022	<u>1.65%</u>
February 16, 2022 - February 15, 2023	<u>1.50%**</u>
February 16, 2023 - February 15, 2024	<u>5.75%**</u>
February 16, 2024 - February 15, 2025	<u>5.75%**</u>

\*BOI decreased interest rates for INTERCAP loans to 1.00% until August 15, 2020 in response to the COVID-19 pandemic.

\*\*Autopay rates began in 2022. Existing borrower loans not set up for autopay in these years were charged 1.55%, 6.00% & 6.25% respectively for processing.

# MONTANA

## BOARD OF INVESTMENTS

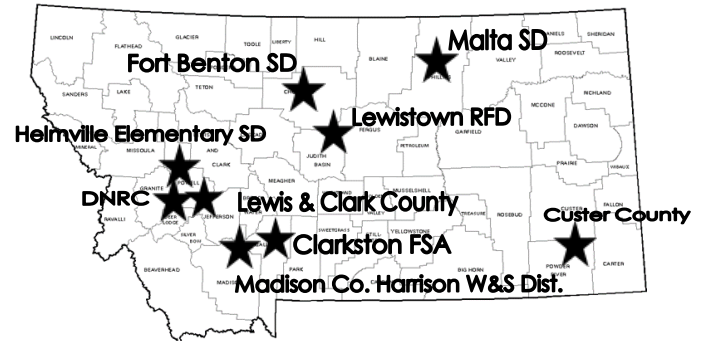
### I N T E R C A P

**TO:** Members of the Board

**FROM:** Louise Welsh,  
Director of Municipal Loans

**DATE:** November 20, 2024

**RE:** INTERCAP Staff Approved Loans Committed – Staff approved the following loans from July 1, 2024, to September 30, 2024.



Borrower:	Helmville Elementary School
Purpose:	Employee housing
Staff Approval Date:	July 18, 2024
Board Loan Amount:	\$300,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$300,000
Term:	15

Borrower:	Clarkston Fire Service Area
Purpose:	Fire tender
Staff Approval Date:	August 20, 2024
Board Loan Amount:	\$ 28,000
Other Funding Sources:	\$ 72,000
Total Project Cost:	\$100,000
Term:	4

Borrower:	Lewis and Clark County
Purpose:	Lucky Strike Rural Improvement District (RID)
Staff Approval Date:	August 23, 2024
Board Loan Amount:	\$78,079
Other Funding Sources:	\$ 0
Total Project Cost:	\$78,079
Term:	15

Borrower:	Lewis and Clark County
Purpose:	Oro Fino Rural Improvement District (RID)
Staff Approval Date:	August 23, 2024
Board Loan Amount:	\$317,641
Other Funding Sources:	\$ 0
Total Project Cost:	\$317,641
Term:	15

Borrower:	Department of Natural Resources and Conservation (DNRC)		
Purpose:	Financing for the Drinking Water and Water Pollution Control State Revolving Funds and the Renewable Resource Grant and Loan Program.		
BOI Policy 70.120 Staff Approval Authorization:	\$15,000,000		
Staff approved:	\$11,000,000	Approval Date:	August 23, 2024
Commitment Remaining/Loans Outstanding Total:	\$ 1,128,438		
Authorization Available:	\$ 2,871,562		
Term:	2-10 years		
Informational Update:	On February 28, 2024, the Board approved a \$1 million 2-year bond anticipation note as interim financing in anticipation of the DNRC issuing a general obligation bond for its Renewable Resource Grant and Loan Program. The loan structure for this commitment was upgraded to a 10-year general obligation bond with the state's full faith and credit and taxing power irrevocably pledged as security for repayment.		

Borrower:	Madison County Harrison Water & Sewer District (Harrison)
Purpose:	Grant Writing
Staff Approval Date:	August 29, 2024
Board Loan Amount:	\$13,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$13,000
Term:	3 years

Borrower:	Lewistown Rural Fire District
Purpose:	Replacement mini pumper truck
Staff Approval Date:	September 5, 2024
Board Loan Amount:	\$230,000
Other Funding Sources:	\$228,006
Total Project Cost:	\$458,006
Term:	10 years

Borrower:	Fort Benton School District
Purpose:	Plumbing and building repairs
Staff Approval Date:	September 10, 2024
Board Loan Amount:	\$500,000 (split equally between the Elementary and High Schools)
Other Funding Sources:	\$ 0
Total Project Cost:	\$500,000
Term:	15 years

Borrower:	Custer County
Purpose:	Lined landfill cell project
Staff Approval Date:	September 13, 2024
Board Loan Amount:	\$ 950,000
Other Funding Sources:	\$2,110,202
Total Project Cost:	\$3,060,202
Term:	7 years

Borrower:	Malta K-12 School District
Purpose:	High School Gym/Auditorium reroof and Elementary HVAC upgrade
Staff Approval Date:	September 17, 2024
Board Loan Amount:	\$500,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$500,000
Term:	8 years







# **Montana Public Employees' Retirement Board Valuation Results June 30, 2024**

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William Holahan, Executive Director

[bill.holahan@mt.gov](mailto:bill.holahan@mt.gov)



# The Purpose of an Actuarial Valuation

**Develop**

- Develop a strategy to systematically fund the promised benefits of the system

**Measure**

- Measure assets and liabilities (future benefit payments)

**Determine**

- Determine actuarial contribution rates

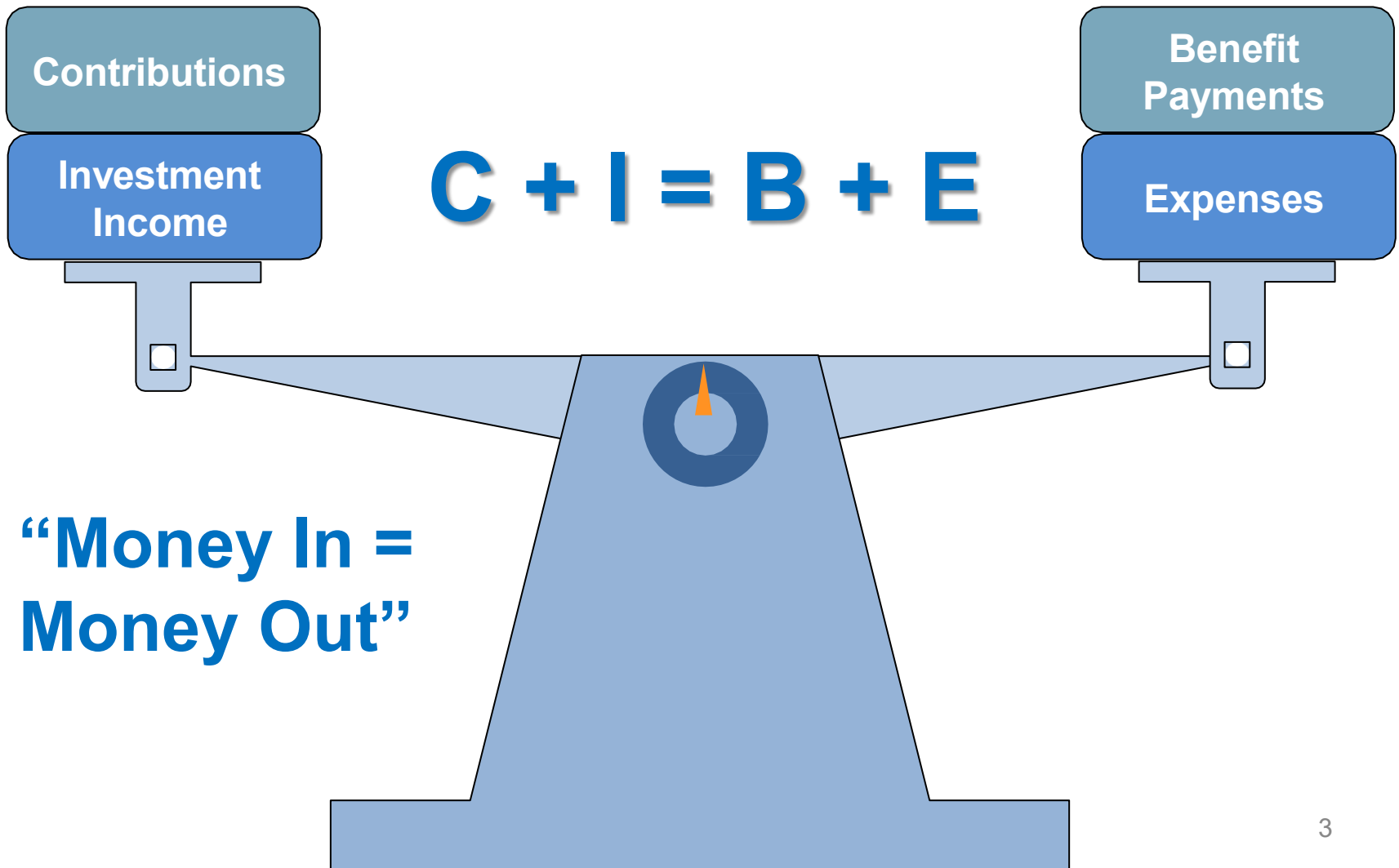
**Analyze**

- Analyze experience (actual vs. expected)

**Report**

- Report on trends, risks, accounting, etc.

# Basic Retirement Funding Formula





# Benefit Financing

$$C + I = B + E$$

“B” depends on

Plan Provisions  
Experience

“C” depends on

Short Term  
Actuarial Assumptions  
Actuarial Cost Method

Long Term  
I, B, E

# June 30, 2024 PERS Funding Results





# PERS Valuation Highlights

## Plan Experience

### Assets



Market value of asset returns were 8.94% while returns on actuarial smoothed assets was 9.03%.

### UAAL



UAAL decreased \$7.6 million from \$2,361.8M to \$2,354.2M.

## Key Results

### Funded Ratio



Funded ratio using actuarial value of assets increased from 74.77% to 75.72%.

### Amortization Period



Amortization period declined from 28 years to 27 years.



# PERS Asset Experience



## Asset Returns

- Both Market and Actuarial asset returns are net of Investment and Administrative Expenses.
- Market: 8.94% (1.64% more than 7.30% expected)
- Actuarial: 9.03% (1.73% more than 7.30% expected)



## Deferred Experience

- Market value of assets are \$91,518,975 less than the actuarial value of assets.
- Experience is recognized over a four-year period.

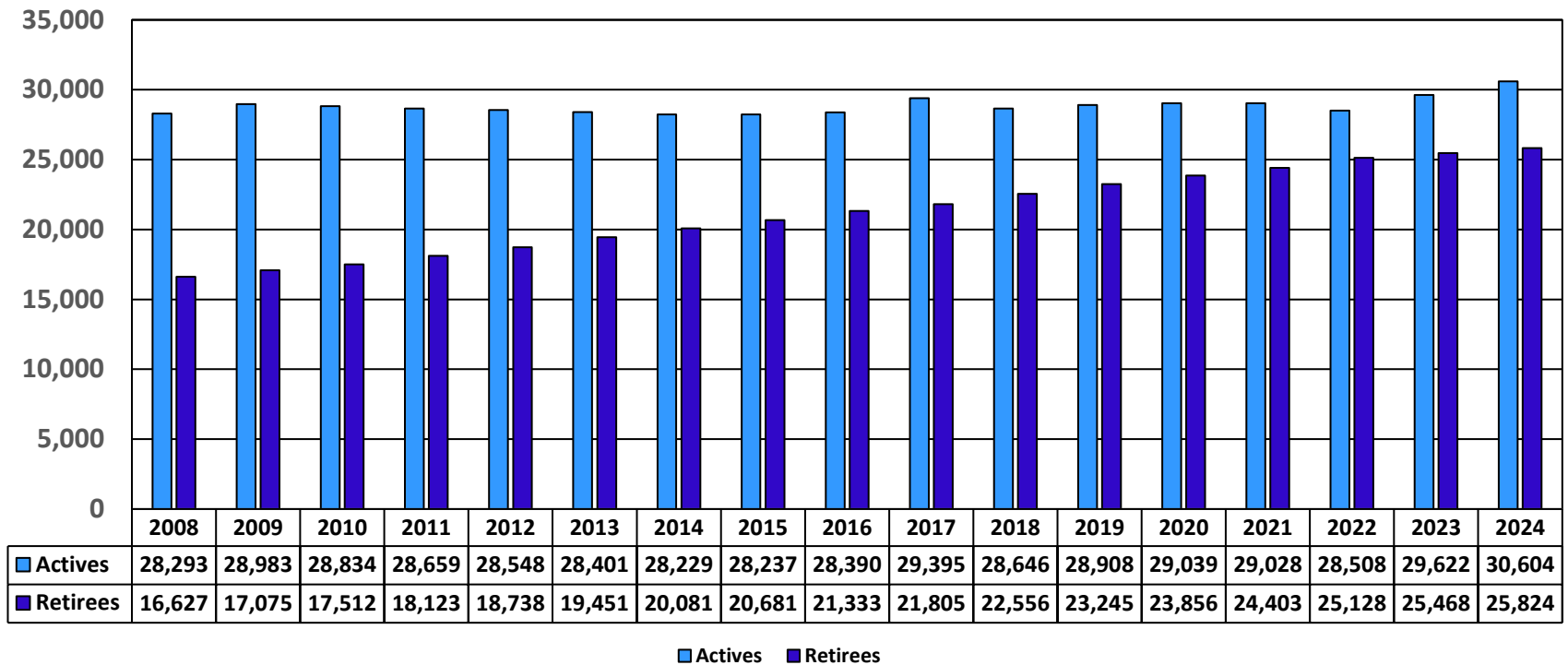


## Deferred Experience Recognition

- 2025 Investment Loss: (\$164.3M)
- 2026 Investment Gain: \$45.0M
- 2027 Investment Gain: \$27.8M



# PERS Active and Retired Membership



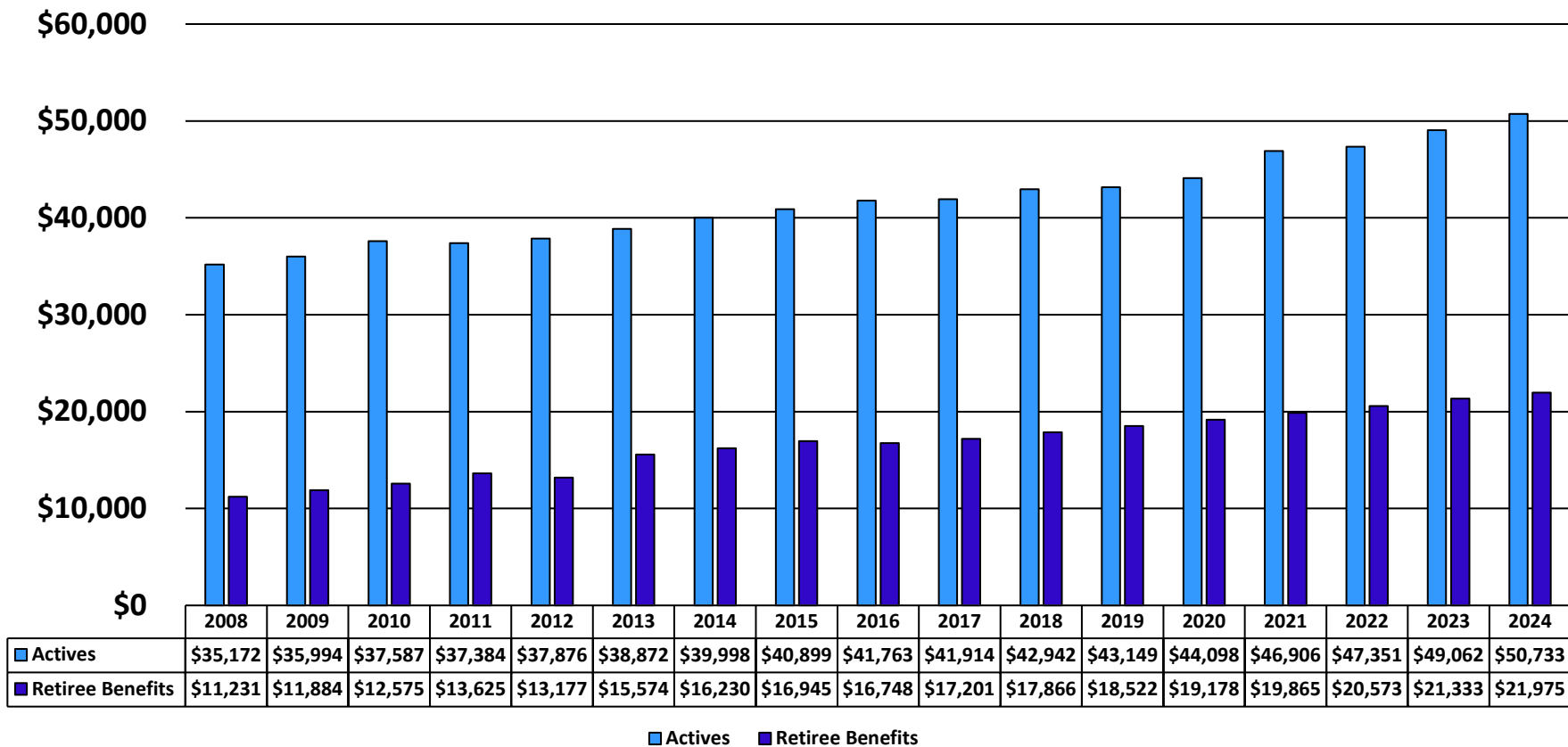
0.51% annual increase for active members since 2008; 3.3% increase for 2024.

2.79% annual increase for retired members since 2008; 1.39% increase for 2024.

0.6 retirees per active 16 years ago; 0.84 retirees per active now.



# PERS Average Salary and Benefits



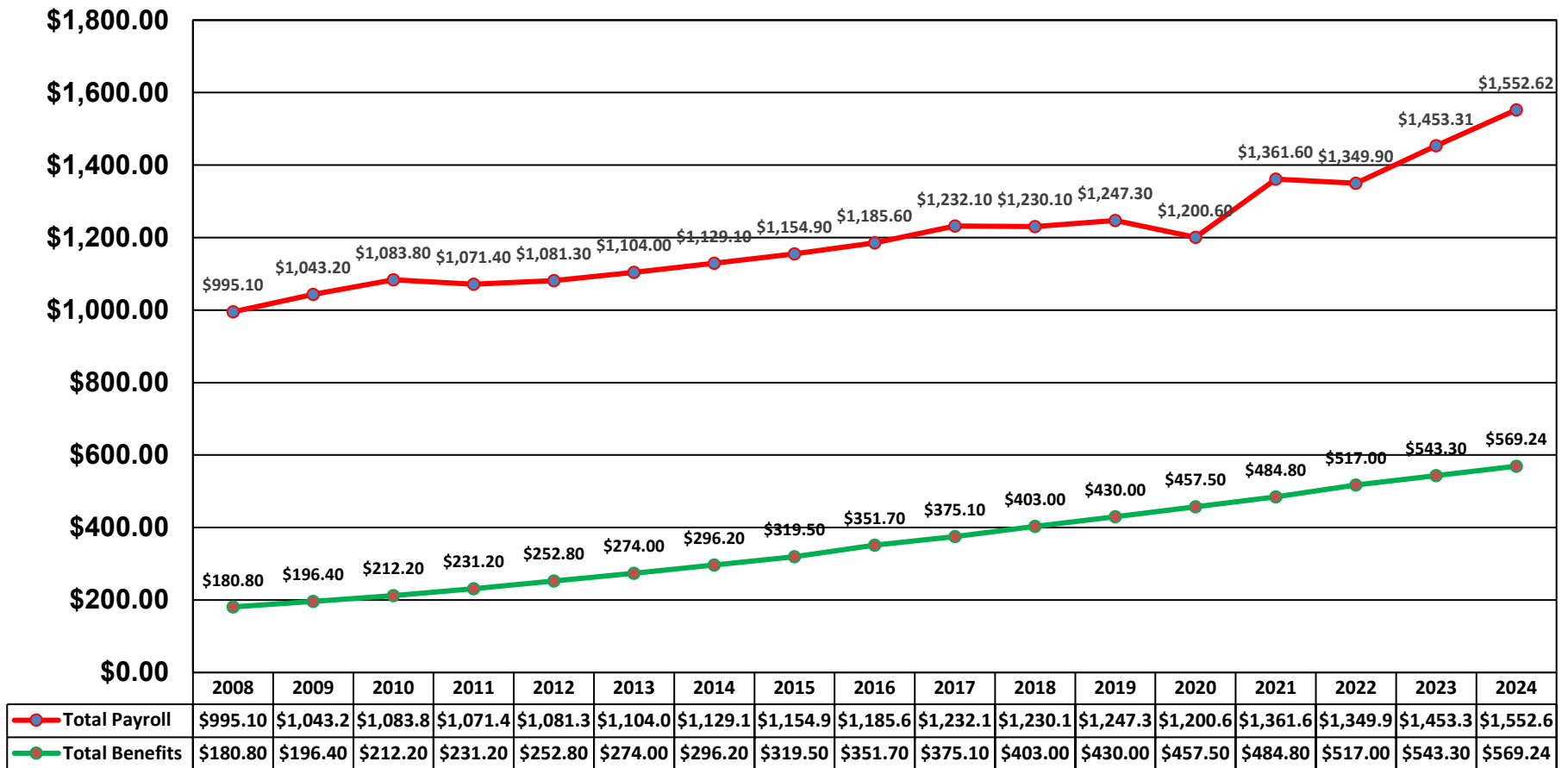
2.33% annual increase for average salary since 2008; 3.4% increase for 2024.

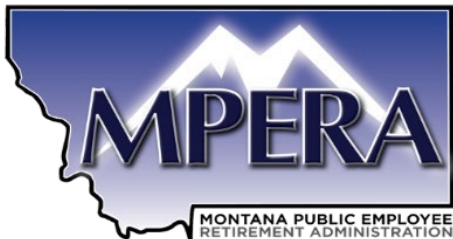
4.37% annual increase for average benefits since 2008; 3% increase for 2024.



# PERS Payroll & Benefits

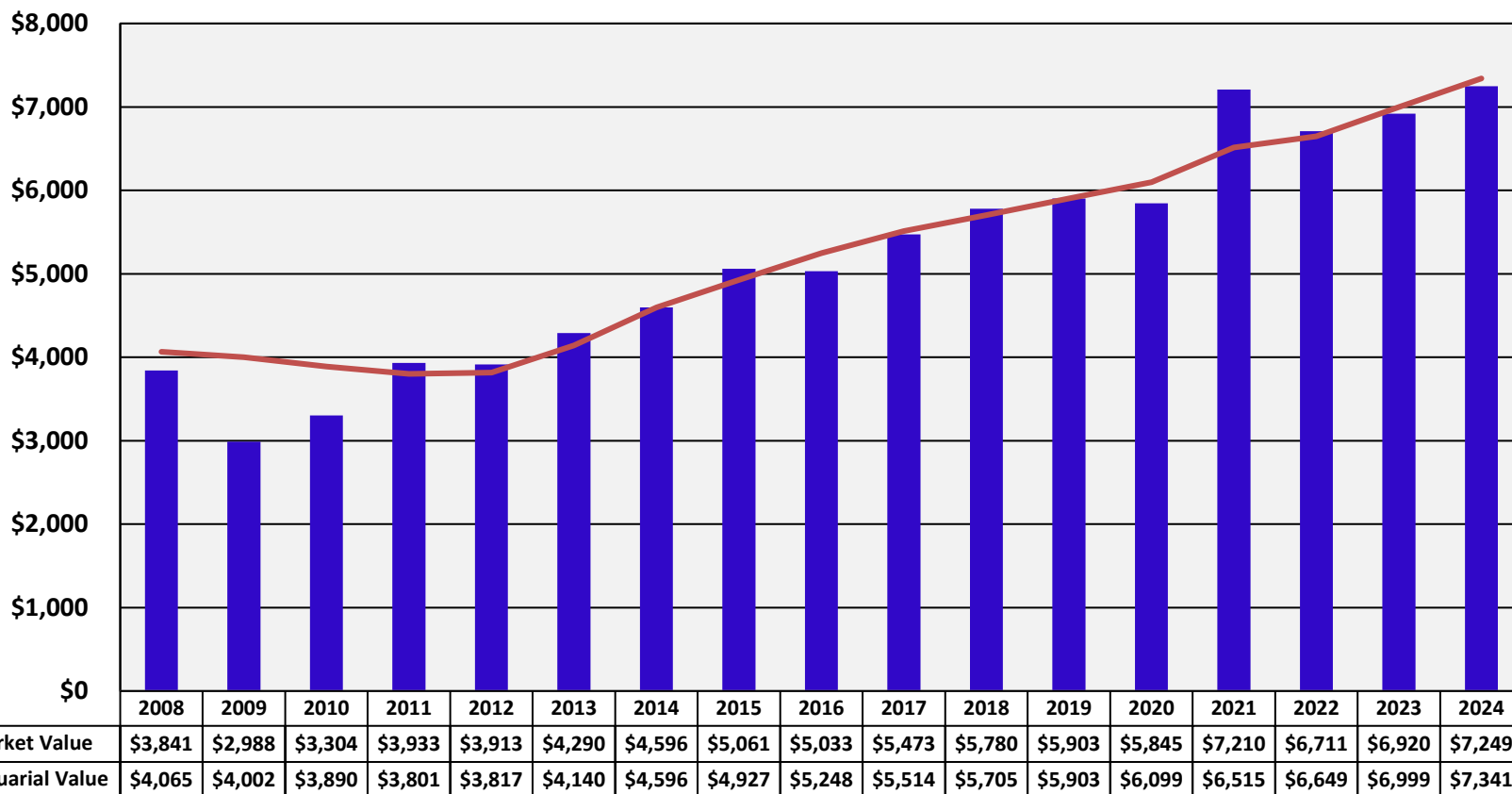
(\$ Millions)





# PERS Assets

(\$ Millions)



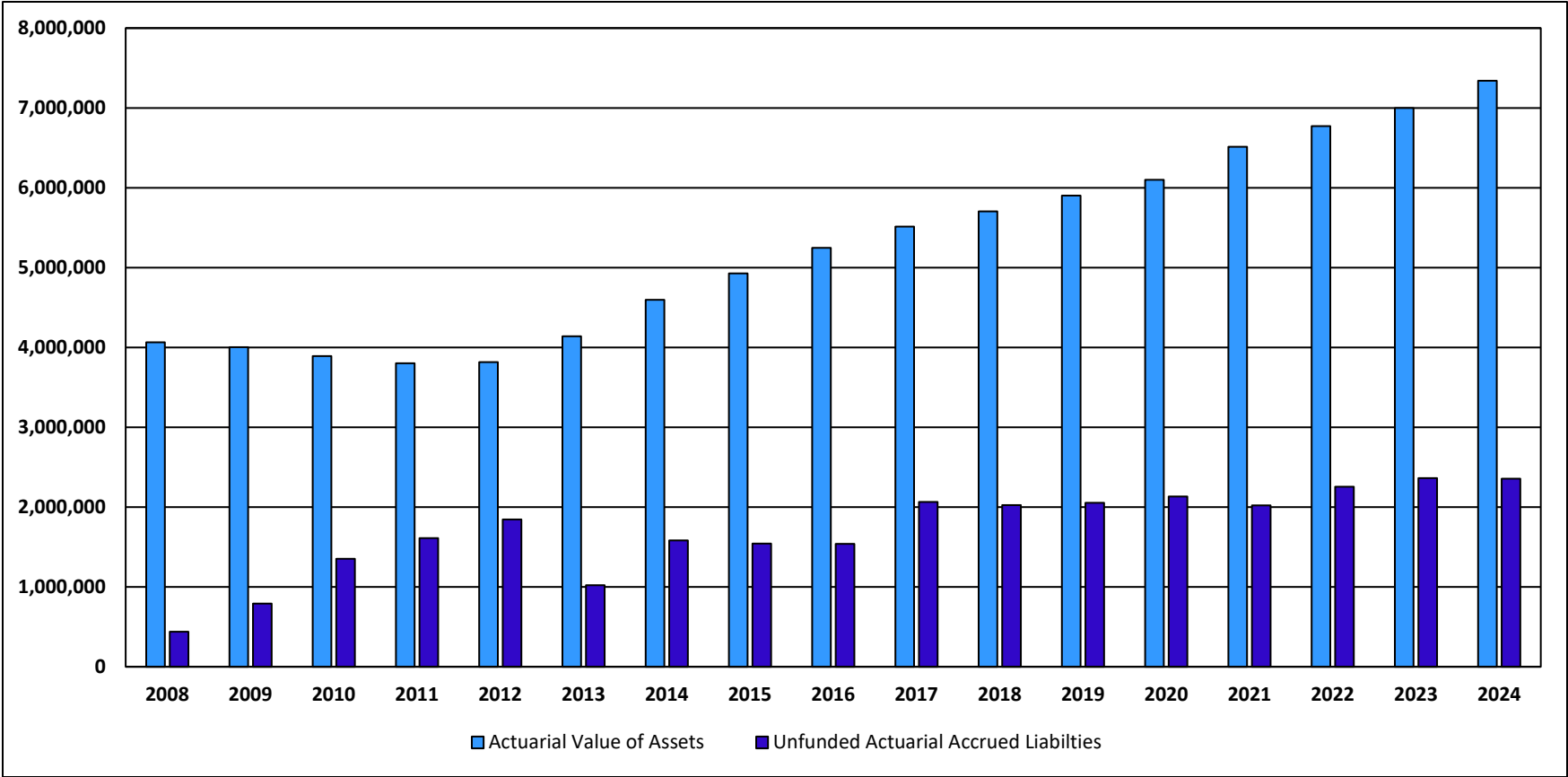
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Market Return	(4.9)%	(20.9)%	12.9%	21.7%	2.3%	13.0%	17.1%	4.6%	2.0%	11.9%	8.9%	5.7%	2.7%	27.8%	(4.2)%	8.35%	8.94%
Actuarial Return	7.6%	(0.2)%	(1.2)%	(0.1)%	3.3%	11.9%	13.2%	9.6%	9.3%	8.1%	6.7%	7.1%	7.1%	10.8%	8.2%	7.55%	9.03%





# PERS Actuarial Assets vs UAAL

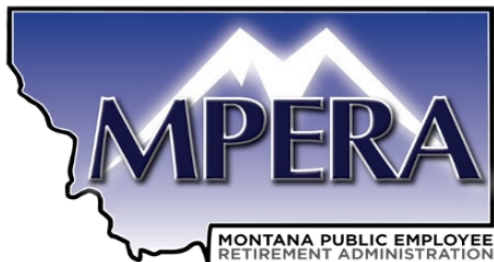
(\$ Millions)



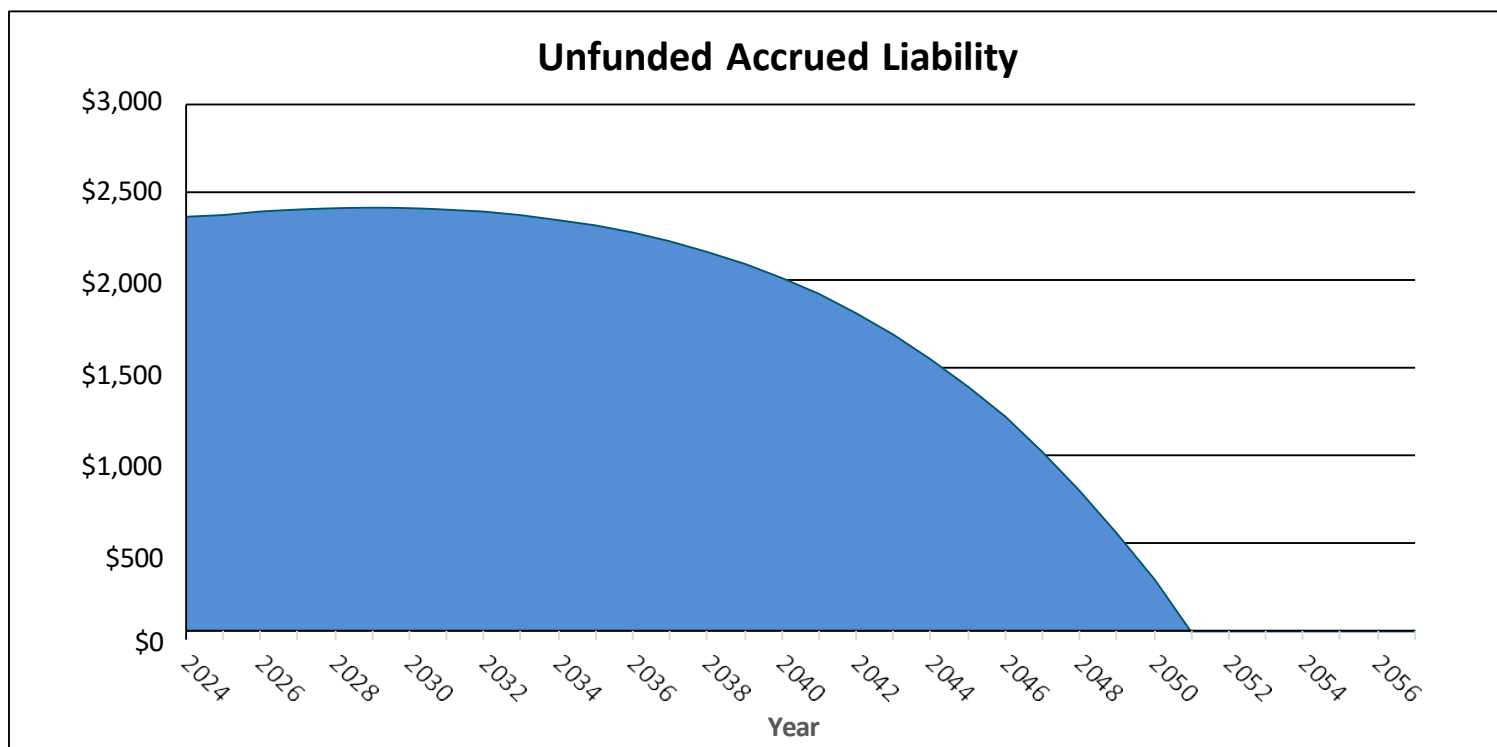


# PERS Funding Results

	June 30, 2023 Valuation	June 30, 2024 Valuation
Total Normal Cost Rate	9.45%	9.83%
Rate to Amortize UAL	7.58%	7.20%
Transfer to DB Education Fund	<u>0.04%</u>	<u>0.04%</u>
Statutory Funding Rate*	17.07%	17.07%
Actuarial Accrued Liability	\$9,361.8 billion	\$9,695.5 billion
Actuarial Value of Assets	\$6,999.3 billion	\$7,341.3 billion
Unfunded Accrued Liability	\$2,361.8 billion	\$2,354.2 billion
Funded Ratio	74.77%	75.72%
Amortization Period*	28 Years	27 Years



# Progress Toward 100% Funding



**Projected UAAL- Level % of Pay**



# Valuation Results - Other Plans

System	Funded Ratio		Amortization Period		ADEC Rate for FY2025	ADEC Rate for FY2026	Shortfall Due to .5% Cap	Legacy UAAL Balance	Cont. UAAL Balance
	2023	2024	Legacy 2024	Contemp. 2024					
JRS***	181%	183%	0	0	0.00%	0.00%	0.00%	\$0	\$0
HPORS**	67%	78%	24	0	34.40%	34.90%	(0.13%)	\$67.5 m	\$0
SRS	78%	83%	24	10	12.074%	12.079%	0.00%	\$115.7 m	\$2.09 m
GWPORS	82%	94%	24	10	9.62%	9.18%	0.00%	\$22.3 m	\$870k

System	Annual Legacy Payment	Annual Contemporary Payment
JRS	\$0	\$0
HPORS	\$4.69 million	\$0
SRS	\$8.05 million	\$274,939
GWPORS	\$1.55 million	\$114,299



# Valuation Results - Other Plans

## HPORS

Year	ER % HB569 (.5% Cap)	Actuarially Determined Rate	Surplus/Shortfall	2024 ER Contribution Rate	Surplus/Shortfall Under 2024 Rate
2023	38.330%	NA	NA	38.33%	
2024	38.330%	NA	NA	38.33%	
2025	34.400%	34.400%	0.00%	38.33%	3.930%
2026	34.900%	35.030%	0.130%	38.33%	3.300%
2027	35.400%	37.970%	2.570%	38.33%	0.360%
2028	35.900%	37.120%	1.220%	38.33%	1.210%

## GWPORS

Year	ER % HB569 (.5% Cap)	Actuarially Determined Rate	Surplus/Shortfall	2024 ER Contribution Rate	Surplus/Shortfall Under 2024 Rate
2023	9.000%	NA	NA	10.56%	
2024	10.560%	NA	NA	10.56%	
2025	9.620%	9.62%	0.00%	10.56%	0.940%
2026	9.180%	9.18%	0.00%	10.56%	1.380%
2027	9.680%	9.97%	0.29%	10.56%	0.590%
2028	9.380%	9.38%	0.00%	10.56%	1.180%

## SRS

Year	ER % HB569 (.5% Cap)	Actuarially Determined Rate	Surplus/Shortfall	2024 ER Contribution Rate	Surplus/Shortfall Under 2024 Rate
2023	13.115%	NA	NA	13.115%	
2024	13.115%	NA	NA	13.115%	
2025	12.074%	12.074%	0.00%	13.115%	1.041%
2026	12.079%	12.079%	0.00%	13.115%	1.036%
2027	12.579%	13.086%	0.51%	13.115%	0.029%
2028	12.589%	12.589%	0.00%	13.115%	0.526%



# Valuation Results - Other Plans

System	Funded Ratio		Amortization Period		Rate			30-Year Funding Rate	
	2023	2024	2023	2024	Member	Employer	Total	2023	2024
<b>MPORS</b>	73%	75%	21	18	9.00%	43.78%	52.78%	46.72%	48.50%
<b>FURS</b>	83%	85%	12	8	10.70%	46.97%	57.67%	41.52%	43.72%
<b>VFCA*</b>	98%	107%	3	0	5% of premium taxes			\$796,125	\$445,283

\* The actual contributions for the fiscal year ending 2023 and 2024 were \$3,156,488 and \$3,519,342, respectively.



# Montana Teachers' Retirement System

## **Montana Teachers' Retirement System Valuation Results July 1, 2024**

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# Why does my Plan need an Actuary?

## Develop

- Develop a strategy to systematically fund the promised benefits of the system

## Measure

- Measure assets and liabilities (future benefit payments)

## Determine

- Determine actuarial contribution rates

## Analyze

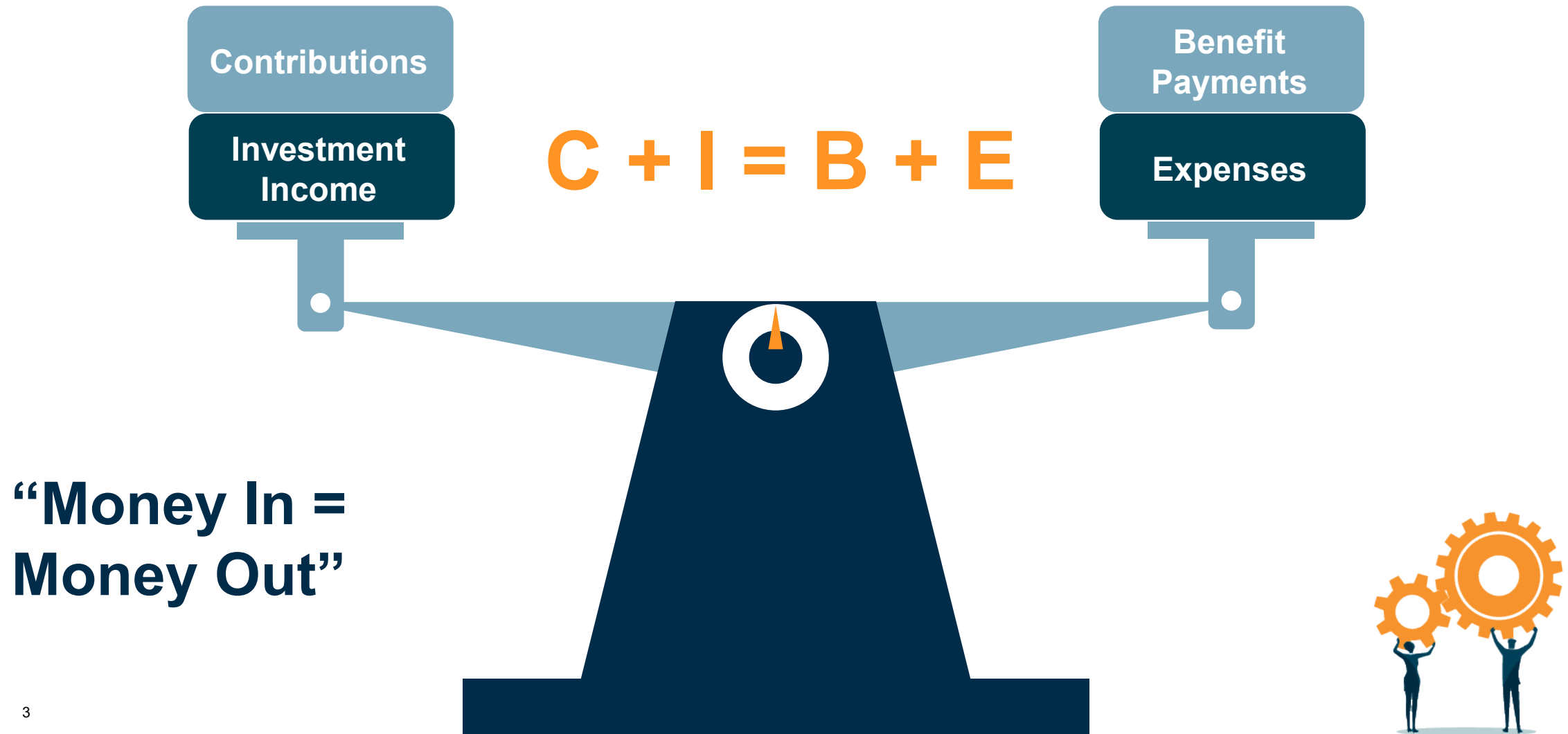
- Analyze experience (actual vs. expected)

## Report

- Report on trends, risks, accounting, etc.



# Basic Retirement Funding Formula



$$C + I = B + E$$

“B” depends on

Plan Provisions

Experience

“C” depends on

Short Term

Actuarial Assumptions

Actuarial Cost Method

Long Term

I, B, E



# July 1, 2024 Funding Results



## Plan Experience

### Assets



Market value of asset returns were 8.9% while returns on actuarial smoothed assets were 9.1%.

### UAAL



UAAL decreased 78.0M from \$1,886.4M to \$1,808.4M.

## Key Results

### Funded Ratio



Funded ratio using actuarial value of assets increased from 72.49% to 74.26%.

### Amortization Period



Amortization period declined from 24 years to 21 years.



## Asset Returns

- Both Market and Actuarial asset returns are net of Investment and Administrative Expenses.
- Market: 8.89% (1.59% more than 7.30% expected)
- Actuarial: 9.09% (1.79% more than 7.30% expected)



## Deferred Experience

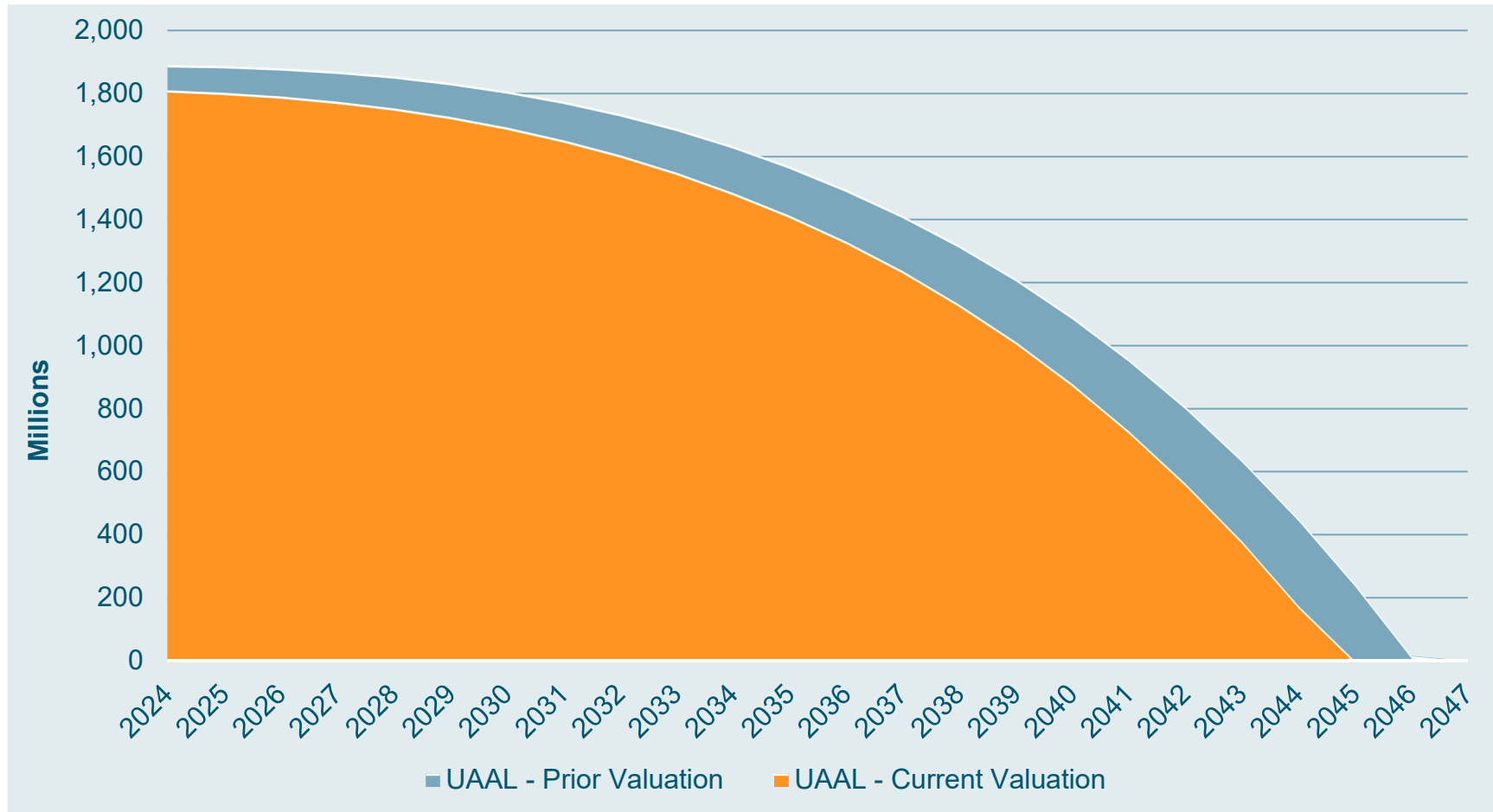
- Market value of assets are \$65,365,613 less than the actuarial value of assets.
- Experience is recognized over a four-year period.



## Deferred Experience Recognition

- 2025 Investment Loss: (\$115.3) million
- 2026 Investment Gain: \$30.8 million
- 2027 Investment Gain: \$19.2 million

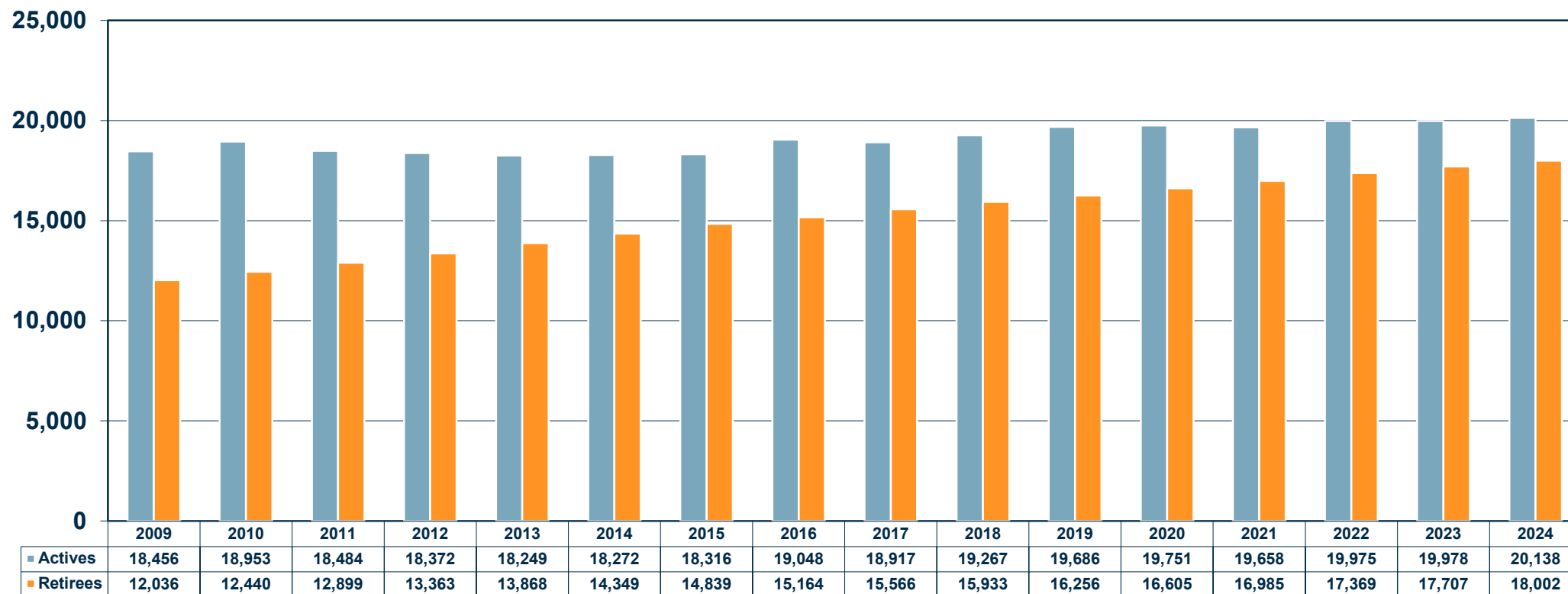
# Progress Toward 100% Funding



Due to favorable plan experience during the prior year, the expected full funding date has moved from 2047 to 2045.



# Active and Retired Membership

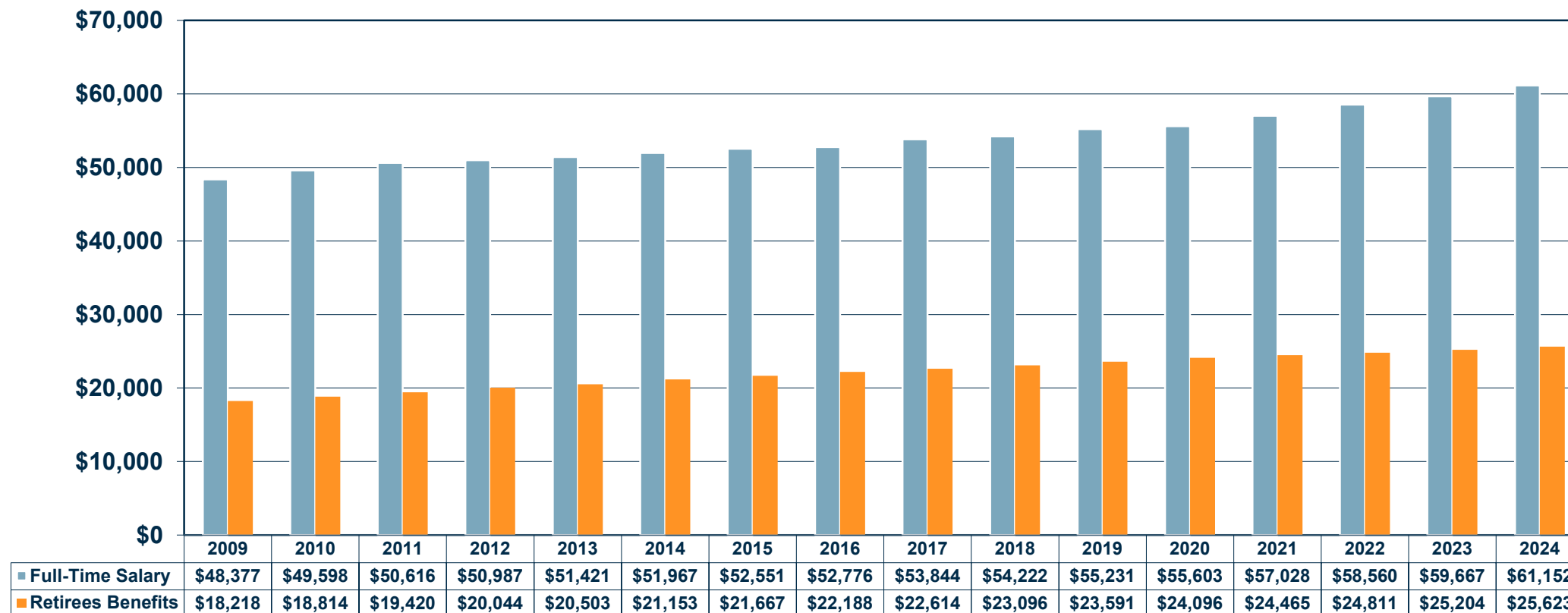


0.6% annual increase for active members since 2009; 0.8% increase for 2024.

2.7% annual increase for retired members since 2009; 1.7% increase for 2024.

1.5 actives per retiree 15 years ago; 1.1 actives per retiree now.

# Average Salary and Benefits

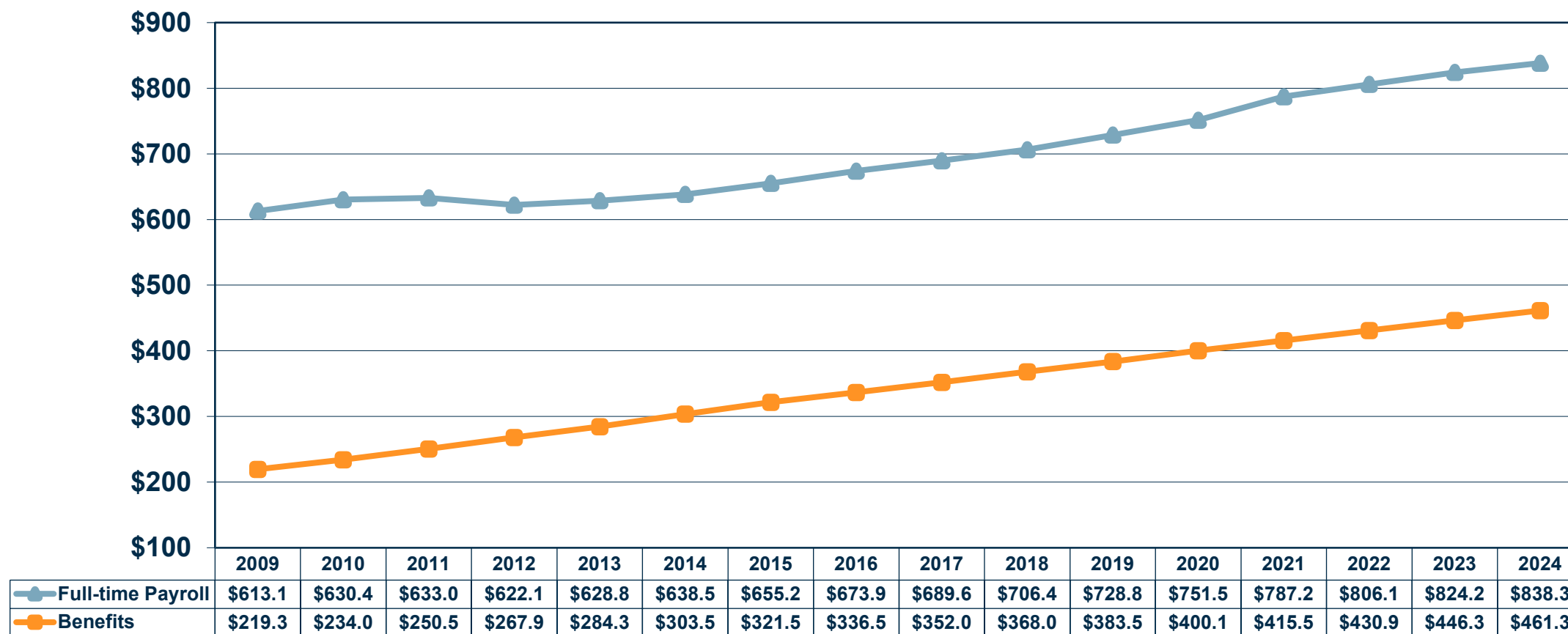


1.6% annual increase for average salary since 2009; 2.5% increase for 2024.

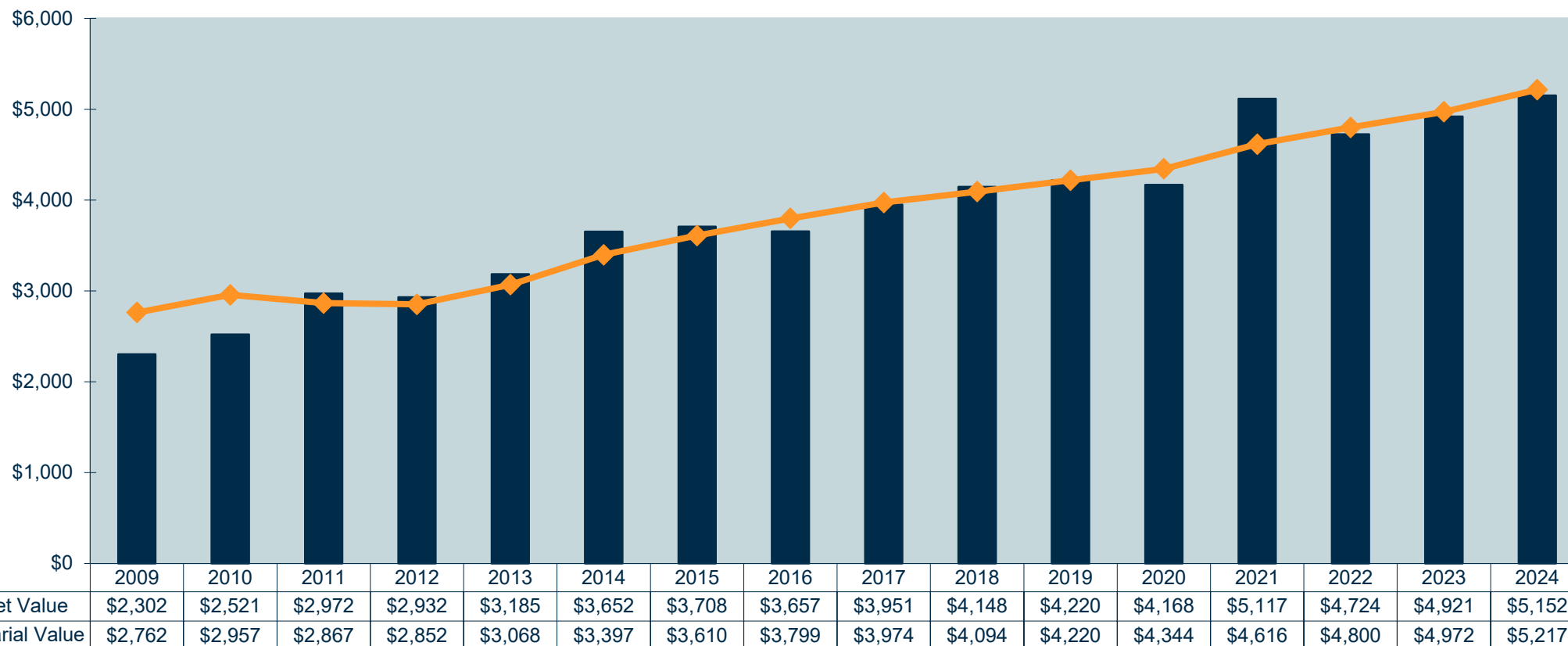
2.3% annual increase for average benefits since 2009; 1.7% increase for 2024.



# Payroll & Benefits (Millions)

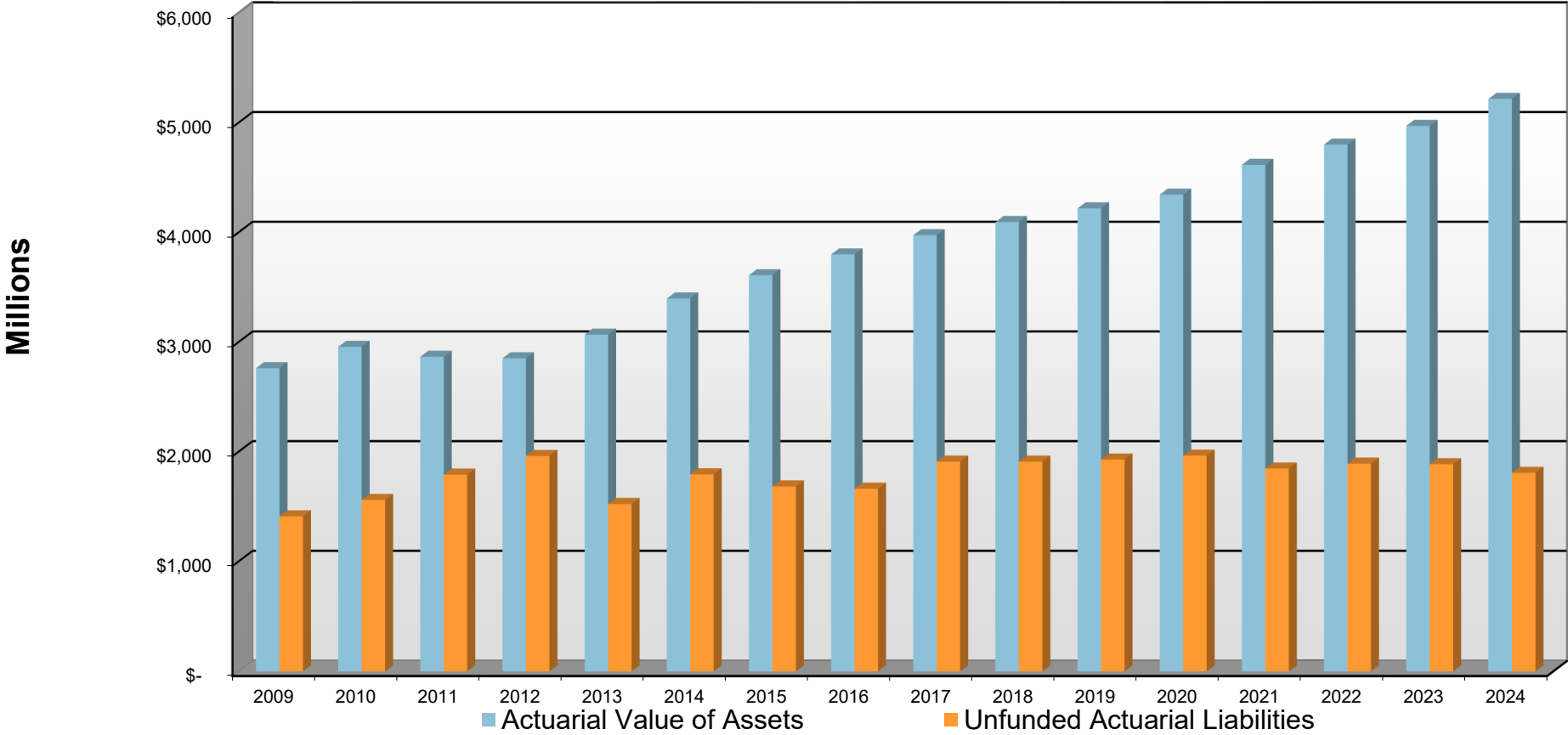


# Assets (\$ Millions)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Market Return	(20.8)%	12.9%	21.7%	2.2%	12.9%	17.1%	4.6%	2.1%	11.9%	8.8%	5.7%	2.7%	27.7%	(4.1)%	8.3%	8.9%
Actuarial Return	(10.3)%	9.8%	(0.1)%	3.2%	12.0%	13.2%	9.6%	8.8%	8.2%	6.9%	7.0%	7.0%	10.7%	8.1%	7.7%	9.1%

# Actuarial Assets vs. UAAL



# Funding Results

	July 1, 2024 Valuation	July 1, 2023 Valuation
Total Normal Cost Rate	10.76%	10.75%
Less Member Rate	<u>8.15%</u>	<u>8.15%</u>
Employer Normal Cost Rate	2.61%	2.60%
Rate to Amortize UAL	<u>9.35%</u>	<u>9.36%</u>
Total Employer Statutory Rate	11.96%	11.96%
Actuarial Accrued Liability	\$7,025.6 million	\$6,858.3 million
Actuarial Value of Assets	\$5,217.2 million	\$4,971.9 million
Unfunded Accrued Liability	\$1,808.4 million	\$1,886.4 million
Funded Ratio	74.26%	72.49%
Amortization Period	21 Years	24 Years





# MONTANA

## BOARD OF INVESTMENTS

**TO:** Members of the Board  
**FROM:** John Romasko, Director of Fixed Income  
Willie Gross, Fixed Income Investment Analyst  
**DATE:** November 20, 2024  
**RE:** Investment Policy Statements

### **Kyiyo Pow Wow**

Staff is proposing changes to the permitted investment ranges, reducing the maximum public equity to 70%, increasing the maximum Trust Funds Investment Pool to 70%, and removing the maximum on STIP.

Staff recently had discussions with the University of Montana where they expressed the intention to spend approximately 5% of the fund annually to support the operations of the Pow Wow. Additionally, they would like to see growth in the fund to at least offset inflation. The account will be funded from discretionary funds. The fund is expected to be permanent, but there is no restriction on corpus.

### **Lubrecht Experimental Forest**

Staff is proposing changes to the permitted investment ranges, reducing the maximum public equity to 70%, increasing the maximum Trust Funds Investment Pool to 70%, and removing the maximum on STIP.

Staff recently discussed spending funds sporadically at a pace of approximately 5% annually and variation between 0% and 10% annually with the University of Montana. Additionally, they would like to see growth in the fund to at least offset inflation. The account will be funded from the proceeds from carbon offset credits already sold to energy-producing companies.

# MONTANA

## BOARD OF INVESTMENTS

### BOARD ADOPTED POLICY

POLICY NUMBER: 40.946

EFFECTIVE DATE: IBD February 16, 2022TITLE: Kyiyo Pow Wow  
Investment Policy StatementSUPERSEDES: February 16, 2022 N/A

BOARD ADOPTION: February 16, 2022

REVIEWED: November 20, 2024

#### I. Introduction

A. The purpose of this policy statement is to provide a framework for Kyiyo Pow Wow investments under the guidance of the Board.

B. The Annual Kyiyo Pow Wow Celebration is one of the oldest traditions of Kyiyo. The Annual Pow Wow Celebration unifies all Native Americans from across the nation in an event full of dancing, singing, and sharing of stories between all in attendance. The celebration is a time to preserve the rich heritage of Native Americans and renew the thoughts of the old traditions. The diversity of each tribe represented at the Pow Wow is shown within the dancing styles and traditional dress of the dancers. Although from a wide array of backgrounds, each dancer comes together to celebrate what their culture truly represents. A one-time gift to the University of Montana was directed to establish an endowment to support the UM Kyiyo Pow Wow student group and named for Chief Earl Old Person.

~~B.-The client expects to make approximately 5% annual distributions from the fund.-~~

#### II. Statement of Purpose

A. The purpose of this policy is to:

1. Establish the investment objectives and performance standards of the Kyiyo Pow Wow account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost-effective manner.

#### III. Investment Objective

A. Strategic

1. The Board's primary objective is to achieve long-term capital appreciation in excess of inflation.
2. The Board's secondary objective is to provide investment income that assists the Kyiyo Pow Wow account in maintaining the account into perpetuity. Both objectives must be compatible with the Board's risk tolerance and prudent investment practices. The Board seeks to maintain a long-term perspective in formulating and implementing investment policies and evaluating investments.

B. Performance - Success in achieving this objective will be measured by comparing the risk and return of the account to the S&P 500 for domestic equities, MSCI ACWI Ex US Index for international equities, Trust Funds Investment Pool benchmark, and the Short-Term Investment Pool benchmark, each weighted proportionately to the portfolio's holdings, over a five (5) year moving average.

C. Time Horizon - Kyiyo Pow Wow is a perpetual account. The Board expects to meet or exceed all objectives over a long-term investment horizon. Over shorter periods, the anticipated market

Adopted: February 16, 2022

Revised IBDReviewed November 20, 2024

volatility, and specific actions, including risk mitigation efforts of the Board, may lead to unfavorable, but expected deviation from these objectives.

D. Investment Guidelines - The Board will have full discretion to manage the Kyiyo Pow Wow portfolio consistent with this policy. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.

E. Permitted Investments

1. Kyiyo Pow Wow may only invest in the following:

- a) Public Equities;
- b) TFIP; and
- c) STIP or any cash vehicle at the Custodial Bank

F. Other Restrictions

- 1. A maximum of ~~seventy ninety-nine~~ percent (~~7099~~%) of the market value of the portfolio will be invested in ~~public equity funds or ETFs, public equities.~~
- 2. A maximum of ~~twenty-seventy~~ percent (~~720~~%) in TFIP.
- 3. ~~A maximum of ten percent (10%) in the STIP and other cash equivalents.~~

G. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any situations where the allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.

Authority: Montana Constitution, Article VIII, Section 13  
 Section 2-15-1808, MCA  
 Section 17-1-113, MCA  
 Sections 17-6-201 through 17-6-205, MCA



# MONTANA

## BOARD OF INVESTMENTS

### BOARD ADOPTED POLICY

POLICY NUMBER: 40.945

EFFECTIVE DATE: IBD February 16, 2022

TITLE: Lubrecht Experimental Forest  
Investment Policy Statement

SUPERSEDES: February 16, 2022

BOARD ADOPTION: February 16, 2022

REVIEWED: November 20, 2024

#### I. Introduction

A. The purpose of this policy is to provide a framework for the Lubrecht Experimental Forest investments under the guidance of the Board.

B. Lubrecht Experimental Forest is managed by the W.A. Franke College of Forestry and Conservation at the University of Montana as an outdoor classroom for the students and as a recreational retreat for the public. Lubrecht Experimental Forest has ski and hiking trails, lodging, and conference services. The College of Forestry and Conservation executed a contract to sell carbon-offset credits to energy producing companies and are now able to use those funds for the ongoing perpetual maintenance of the Forest.

~~B. The client expects to make approximately 5% annual distributions from the fund. Timing of distributions is unknown and there may be instances in which the distributions significantly exceed the 5% estimate.~~

#### II. Purpose

A. The purpose of this policy statement is to:

1. Establish the investment objectives and performance standards of the Lubrecht Experimental Forest account; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost-effective manner.

#### III. Investment Objective

A. Strategic

1. The Board's primary objective is to achieve long-term capital appreciation in excess of inflation; and
2. The Board's secondary objective is to provide investment income that assists the Lubrecht Experimental Forest account in maintaining the forest into perpetuity. Both objectives must be compatible with the Board's risk tolerance and prudent investment practices. The Board seeks to maintain a long-term perspective in formulating and implementing investment policies and evaluating investments.

B. Performance - Success in achieving this objective will be measured by comparing the risk and return of the account to the S&P 500 for domestic equities, MSCI ACWI Ex US Index for international equities, Trust Funds Investment Pool benchmark, and the Short-Term Investment Pool benchmark, each weighted proportionately to the portfolio's holdings, over a five (5) year moving average.

C. Time Horizon - Lubrecht Experimental Forest is a perpetual account. The Board expects to meet or exceed all objectives over a long-term investment horizon. Over shorter periods, the

Adopted: February 16, 2022

Revised IBD

Reviewed November 20, 2024

anticipated market volatility, and specific actions, including risk mitigation efforts of the Board, may lead to unfavorable but expected deviation from these objectives.

D. Investment Guidelines - The Board will have full discretion to manage the Lubrecht Experimental Forest portfolio consistent with this policy. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.

E. Permitted Investments

1. Lubrecht Experimental Forest may only invest in the following:

- a) Public Equities;
- b) TFIP; and
- c) STIP or any cash vehicle at the Custodial Bank

F. Other Restrictions

- 1. A maximum of ~~seventy ninety-nine~~ percent (~~7099~~%) of the market value of the portfolio will be invested in ~~public equity funds or ETFs. public equities.~~
- 2. A maximum of ~~twenty-seventy~~ percent (~~720~~%) in TFIP.
- 3. ~~A maximum of ten percent (10%) in the STIP and other cash equivalents.~~

G. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any situations where the allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.

Authority: Montana Constitution, Article VIII, Section 13  
 Section 2-15-1808, MCA  
 Section 17-1-113, MCA  
 Sections 17-6-201 through 17-6-205, MCA





# Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: September 30, 2024



**Montana Board of Investments**  
**Comparative Performance**  
**Retirement Plans**

**As of September 30, 2024**

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Public Employees' Retirement - Net</b>	<b>4.41</b>	<b>9.19</b>	<b>16.08</b>	<b>5.30</b>	<b>8.97</b>	<b>8.11</b>	<b>7.89</b>	<b>7.43</b>	<b>11.46</b>	<b>-8.48</b>	<b>17.61</b>	<b>11.94</b>	<b>16.77</b>	<b>7.84</b>	<b>07/01/1994</b>
Public Employees' Benchmark	5.58	10.06	19.02	4.97	8.31	7.59	7.67	N/A	12.75	-10.81	13.79	12.22	20.26	N/A	
Difference	-1.17	-0.87	-2.94	0.33	0.66	0.52	0.22	N/A	-1.29	2.33	3.82	-0.28	-3.49	N/A	
<b>Public Employees' Retirement - Gross</b>	<b>4.59</b>	<b>9.93</b>	<b>17.04</b>	<b>6.12</b>	<b>9.68</b>	<b>8.80</b>	<b>8.51</b>	<b>7.98</b>	<b>12.21</b>	<b>-7.89</b>	<b>18.32</b>	<b>12.53</b>	<b>17.44</b>	<b>8.22</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	16	15	6	15	31	38	29	37	42	45	
<b>Teachers' Retirement - Net</b>	<b>4.42</b>	<b>9.20</b>	<b>16.08</b>	<b>5.29</b>	<b>8.96</b>	<b>8.10</b>	<b>7.88</b>	<b>7.43</b>	<b>11.44</b>	<b>-8.52</b>	<b>17.61</b>	<b>11.93</b>	<b>16.78</b>	<b>7.85</b>	<b>07/01/1994</b>
Teachers' Benchmark	5.58	10.07	19.02	4.94	8.30	7.58	7.66	N/A	12.71	-10.86	13.78	12.21	20.27	N/A	
Difference	-1.16	-0.87	-2.94	0.35	0.66	0.52	0.22	N/A	-1.27	2.34	3.83	-0.28	-3.49	N/A	
<b>Teachers' Retirement - Gross</b>	<b>4.60</b>	<b>9.94</b>	<b>17.04</b>	<b>6.10</b>	<b>9.67</b>	<b>8.79</b>	<b>8.51</b>	<b>7.98</b>	<b>12.19</b>	<b>-7.93</b>	<b>18.32</b>	<b>12.52</b>	<b>17.45</b>	<b>8.23</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	17	15	6	15	31	38	29	37	42	41	
<b>Police Retirement - Net</b>	<b>4.41</b>	<b>9.20</b>	<b>16.12</b>	<b>5.32</b>	<b>8.97</b>	<b>8.11</b>	<b>7.89</b>	<b>7.40</b>	<b>11.49</b>	<b>-8.48</b>	<b>17.58</b>	<b>11.95</b>	<b>16.80</b>	<b>7.73</b>	<b>07/01/1994</b>
Police Benchmark	5.59	10.07	19.08	4.99	8.32	7.60	7.68	N/A	12.77	-10.80	13.73	12.23	20.30	N/A	
Difference	-1.18	-0.87	-2.96	0.33	0.65	0.51	0.21	N/A	-1.28	2.32	3.85	-0.28	-3.50	N/A	
<b>Police Retirement - Gross</b>	<b>4.60</b>	<b>9.94</b>	<b>17.08</b>	<b>6.13</b>	<b>9.68</b>	<b>8.80</b>	<b>8.52</b>	<b>7.95</b>	<b>12.24</b>	<b>-7.89</b>	<b>18.28</b>	<b>12.54</b>	<b>17.47</b>	<b>8.10</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	16	14	6	17	31	38	29	37	42	59	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees.  
 Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

**Montana Board of Investments  
Comparative Performance  
Retirement Plans**

**As of September 30, 2024**

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Firefighters' Retirement - Net</b>	<b>4.41</b>	<b>9.19</b>	<b>16.11</b>	<b>5.32</b>	<b>8.97</b>	<b>8.11</b>	<b>7.90</b>	<b>7.42</b>	<b>11.49</b>	<b>-8.47</b>	<b>17.58</b>	<b>11.95</b>	<b>16.79</b>	<b>7.72</b>	<b>07/01/1994</b>
Firefighters' Benchmark	5.59	10.06	19.06	4.98	8.31	7.60	7.68	N/A	12.77	-10.80	13.73	12.23	20.29	N/A	
Difference	-1.18	-0.87	-2.95	0.34	0.66	0.51	0.22	N/A	-1.28	2.33	3.85	-0.28	-3.50	N/A	
<b>Firefighters' Retirement - Gross</b>	<b>4.59</b>	<b>9.94</b>	<b>17.07</b>	<b>6.13</b>	<b>9.68</b>	<b>8.80</b>	<b>8.52</b>	<b>7.96</b>	<b>12.24</b>	<b>-7.88</b>	<b>18.28</b>	<b>12.53</b>	<b>17.46</b>	<b>8.10</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	16	14	6	16	31	38	29	37	42	60	
<b>Sheriffs' Retirement - Net</b>	<b>4.41</b>	<b>9.19</b>	<b>16.07</b>	<b>5.30</b>	<b>8.97</b>	<b>8.11</b>	<b>7.89</b>	<b>7.42</b>	<b>11.45</b>	<b>-8.47</b>	<b>17.61</b>	<b>11.94</b>	<b>16.75</b>	<b>7.75</b>	<b>07/01/1994</b>
Sheriffs' Benchmark	5.58	10.05	19.00	4.94	8.30	7.58	7.67	N/A	12.67	-10.81	13.79	12.22	20.23	N/A	
Difference	-1.17	-0.86	-2.93	0.36	0.67	0.53	0.22	N/A	-1.22	2.34	3.82	-0.28	-3.48	N/A	
<b>Sheriffs' Retirement - Gross</b>	<b>4.59</b>	<b>9.93</b>	<b>17.03</b>	<b>6.11</b>	<b>9.68</b>	<b>8.80</b>	<b>8.52</b>	<b>7.96</b>	<b>12.20</b>	<b>-7.87</b>	<b>18.32</b>	<b>12.53</b>	<b>17.42</b>	<b>8.13</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	63	66	25	16	15	6	16	31	38	29	37	43	57	
<b>Highway Patrol Retirement - Net</b>	<b>4.41</b>	<b>9.19</b>	<b>16.07</b>	<b>5.30</b>	<b>8.97</b>	<b>8.11</b>	<b>7.89</b>	<b>7.43</b>	<b>11.42</b>	<b>-8.46</b>	<b>17.62</b>	<b>11.94</b>	<b>16.78</b>	<b>7.75</b>	<b>07/01/1994</b>
Highway Patrol Benchmark	5.58	10.06	19.01	4.93	8.29	7.58	7.67	N/A	12.59	-10.79	13.80	12.24	20.26	N/A	
Difference	-1.17	-0.87	-2.94	0.37	0.68	0.53	0.22	N/A	-1.17	2.33	3.82	-0.30	-3.48	N/A	
<b>Highway Patrol Retirement - Gross</b>	<b>4.59</b>	<b>9.93</b>	<b>17.03</b>	<b>6.11</b>	<b>9.68</b>	<b>8.80</b>	<b>8.52</b>	<b>7.98</b>	<b>12.17</b>	<b>-7.87</b>	<b>18.33</b>	<b>12.53</b>	<b>17.45</b>	<b>8.12</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	16	14	6	15	31	37	29	37	42	57	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments  
Comparative Performance  
Retirement Plans

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Game Wardens' Retirement - Net</b>	<b>4.41</b>	<b>9.19</b>	<b>16.08</b>	<b>5.30</b>	<b>8.96</b>	<b>8.10</b>	<b>7.89</b>	<b>7.39</b>	<b>11.43</b>	<b>-8.48</b>	<b>17.62</b>	<b>11.91</b>	<b>16.77</b>	<b>7.76</b>	<b>07/01/1994</b>
Game Wardens' Benchmark	5.59	10.06	19.02	4.92	8.28	7.57	7.66	N/A	12.60	-10.82	13.79	12.18	20.25	N/A	
Difference	-1.18	-0.87	-2.94	0.38	0.68	0.53	0.23	N/A	-1.17	2.34	3.83	-0.27	-3.48	N/A	
<b>Game Wardens' Retirement - Gross</b>	<b>4.59</b>	<b>9.94</b>	<b>17.04</b>	<b>6.11</b>	<b>9.67</b>	<b>8.79</b>	<b>8.51</b>	<b>7.93</b>	<b>12.18</b>	<b>-7.88</b>	<b>18.32</b>	<b>12.50</b>	<b>17.44</b>	<b>8.13</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	17	15	6	19	31	38	29	39	42	56	
<b>Judges' Retirement - Net</b>	<b>4.42</b>	<b>9.20</b>	<b>16.09</b>	<b>5.30</b>	<b>8.97</b>	<b>8.11</b>	<b>7.89</b>	<b>7.43</b>	<b>11.46</b>	<b>-8.50</b>	<b>17.63</b>	<b>11.94</b>	<b>16.78</b>	<b>7.76</b>	<b>07/01/1994</b>
Judges' Benchmark	5.59	10.08	19.04	4.96	8.31	7.59	7.68	N/A	12.73	-10.84	13.80	12.22	20.27	N/A	
Difference	-1.17	-0.88	-2.95	0.34	0.66	0.52	0.21	N/A	-1.27	2.34	3.83	-0.28	-3.49	N/A	
<b>Judges' Retirement - Gross</b>	<b>4.60</b>	<b>9.95</b>	<b>17.05</b>	<b>6.11</b>	<b>9.68</b>	<b>8.80</b>	<b>8.52</b>	<b>7.97</b>	<b>12.21</b>	<b>-7.91</b>	<b>18.34</b>	<b>12.53</b>	<b>17.45</b>	<b>8.13</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	63	62	66	25	16	14	6	15	31	38	29	37	42	56	
<b>Volunteer Firefighters' Retirement - Net</b>	<b>4.42</b>	<b>9.21</b>	<b>16.10</b>	<b>5.30</b>	<b>8.97</b>	<b>8.11</b>	<b>7.88</b>	<b>7.41</b>	<b>11.44</b>	<b>-8.50</b>	<b>17.61</b>	<b>11.94</b>	<b>16.79</b>	<b>7.59</b>	<b>07/01/1994</b>
Volunteer Firefighters' Benchmark	5.60	10.08	19.04	4.93	8.30	7.58	7.67	N/A	12.66	-10.86	13.85	12.18	20.31	N/A	
Difference	-1.18	-0.87	-2.94	0.37	0.67	0.53	0.21	N/A	-1.22	2.36	3.76	-0.24	-3.52	N/A	
<b>Volunteer Firefighters' Retirement - Gross</b>	<b>4.60</b>	<b>9.95</b>	<b>17.06</b>	<b>6.11</b>	<b>9.67</b>	<b>8.79</b>	<b>8.50</b>	<b>7.95</b>	<b>12.19</b>	<b>-7.91</b>	<b>18.31</b>	<b>12.53</b>	<b>17.46</b>	<b>7.96</b>	<b>07/01/1994</b>
All Public Plans (>\$5B) Total Fund Median	4.81	10.49	17.90	4.92	8.97	8.20	7.77	7.64	11.25	-9.52	16.83	12.08	17.25	8.18	
Rank	62	62	66	25	16	15	7	17	31	38	29	37	42	73	

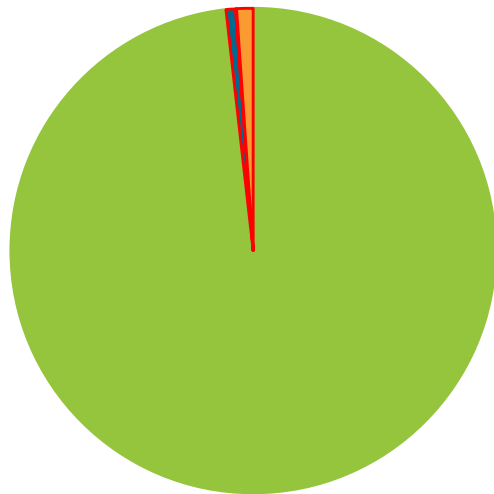
Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

**Montana Board of Investments**  
**Asset Allocation by Segment**  
**Retirement Plans**

**As of September 30, 2024**

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	7,407,100,017	48.22	84,671,509	50.26	7,491,771,525	48.25
Teachers' Retirement	5,249,560,327	34.18	54,501,372	32.35	5,304,061,698	34.16
Firefighters' Retirement	704,237,721	4.58	7,113,515	4.22	711,351,236	4.58
Police Retirement	629,315,491	4.10	6,667,058	3.96	635,982,549	4.10
Sheriffs' Retirement	579,621,472	3.77	6,366,899	3.78	585,988,371	3.77
Game Wardens' Retirement	362,062,331	2.36	4,285,182	2.54	366,347,513	2.36
Highway Patrol Retirement	230,171,657	1.50	2,793,779	1.66	232,965,436	1.50
Judges' Retirement	142,078,307	0.92	1,497,792	0.89	143,576,098	0.92
Volunteer Firefighters' Retirement	55,935,405	0.36	565,764	0.34	56,501,169	0.36
<b>Retirement Plans Total Fund Composite</b>	<b>15,360,082,727</b>	<b>98.92</b>	<b>168,462,870</b>	<b>1.08</b>	<b>15,528,545,597</b>	<b>100.00</b>

**September 30, 2024 : \$15,528,545,597**



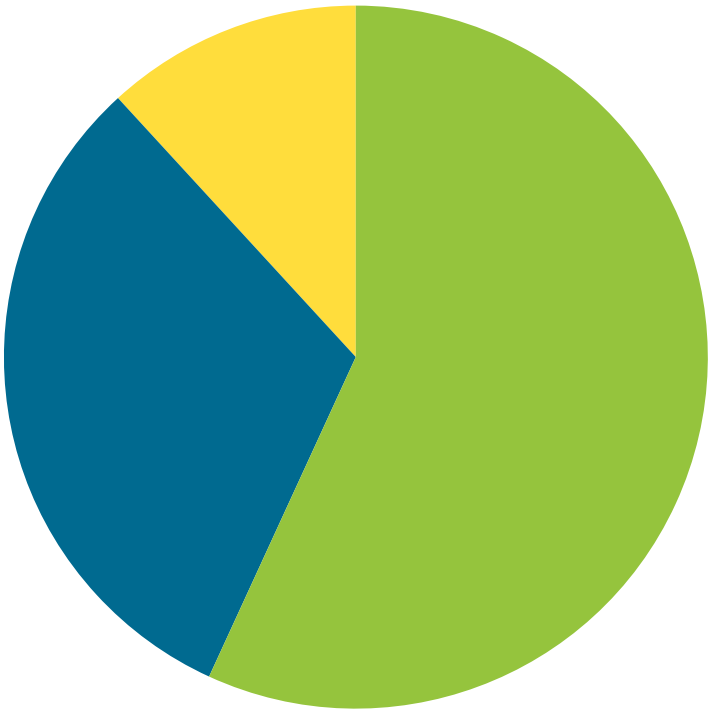
**Segments**

	<b>Market Value (\$)</b>	<b>Allocation (%)</b>
CAPP Ex Cash	15,251,149,049	98.21
CAPP Cash Pension	98,678,748	0.64
CAPP Asset Class Cash	10,254,930	0.07
Short Term Investment Pool (STIP)	168,462,870	1.08
Total Cash	277,396,548	1.79

Allocations shown may not sum up to 100% exactly due to rounding. Retirement Plan market values may differ from State Street due to uninvested amounts not included in segment totals.



September 30, 2024 : \$27,020,551,768



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	15,360,082,754	56.85
Short Term Investment Pool	8,467,856,377	31.34
Trust Funds Investment Pool	3,192,612,638	11.82

Allocations shown may not sum up to 100% exactly due to rounding. Market values do not include pending transactions.

**Montana Board of Investments**  
**Comparative Performance**  
**Investment Pools**

**As of September 30, 2024**

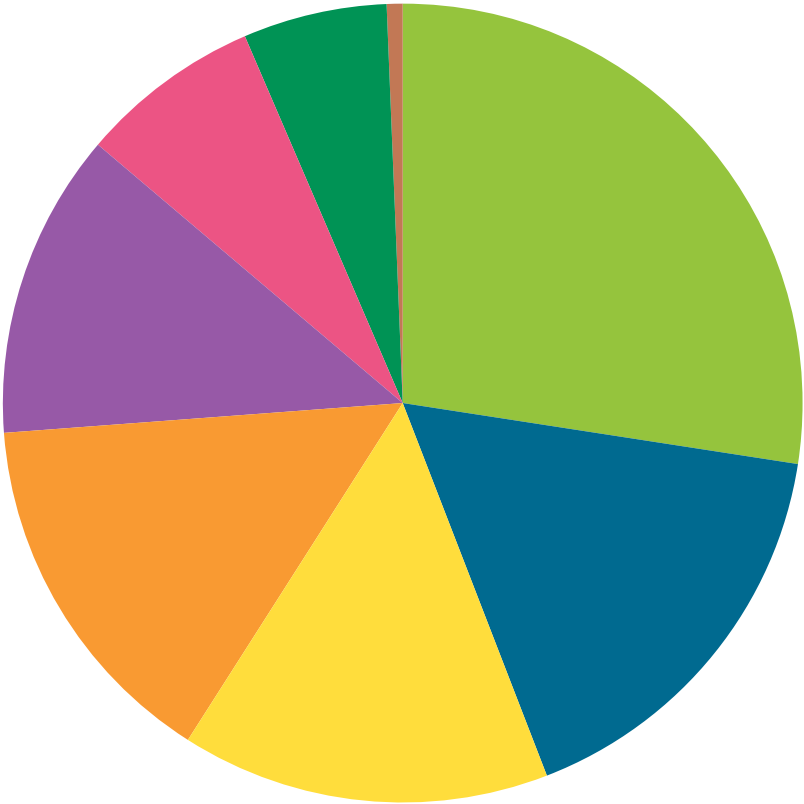
	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Consolidated Asset Pension Pool (CAPP)</b>	<b>4.45</b>	<b>9.26</b>	<b>16.21</b>	<b>5.32</b>	<b>9.06</b>	<b>8.20</b>	<b>N/A</b>	<b>11.53</b>	<b>-8.60</b>	<b>17.83</b>	<b>12.10</b>	<b>17.12</b>	<b>8.56</b>	<b>04/01/2017</b>
CAPP Custom Benchmark	5.64	10.14	19.19	4.96	8.38	7.67	N/A	12.80	-10.99	13.95	12.38	20.70	8.05	
Difference	-1.19	-0.88	-2.98	0.36	0.68	0.53	N/A	-1.27	2.39	3.88	-0.28	-3.58	0.51	
<b>Trust Funds Investment Pool</b>	<b>3.86</b>	<b>2.58</b>	<b>7.52</b>	<b>-0.08</b>	<b>1.52</b>	<b>2.40</b>	<b>2.81</b>	<b>2.59</b>	<b>-6.26</b>	<b>1.49</b>	<b>7.23</b>	<b>8.98</b>	<b>5.33</b>	<b>10/01/1995</b>
Trust Fund Custom Benchmark	3.86	1.89	6.65	-0.19	1.22	2.11	2.29	1.24	-5.04	0.71	7.51	8.72	4.53	
Difference	0.00	0.69	0.87	0.11	0.30	0.29	0.52	1.35	-1.22	0.78	-0.28	0.26	0.80	
<b>Short Term Investment Pool</b>	<b>1.33</b>	<b>4.08</b>	<b>5.51</b>	<b>3.63</b>	<b>2.42</b>	<b>2.32</b>	<b>1.78</b>	<b>5.13</b>	<b>1.67</b>	<b>0.11</b>	<b>0.73</b>	<b>2.28</b>	<b>2.45</b>	<b>04/01/1997</b>
Short Term Custom Index	1.36	4.18	5.64	3.71	2.37	2.27	1.74	5.28	1.69	0.04	0.36	2.14	2.39	
Difference	-0.03	-0.10	-0.13	-0.08	0.05	0.05	0.04	-0.15	-0.02	0.07	0.37	0.14	0.06	
iMoney.net Money Fund (Gross) Median	1.32	4.08	5.58	3.77	2.52	2.43	1.88	5.38	1.83	0.15	0.73	2.45	2.46	
Difference	0.01	0.00	-0.07	-0.14	-0.10	-0.11	-0.10	-0.25	-0.16	-0.04	0.00	-0.17	-0.01	

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. See the Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments  
Asset Allocation  
Consolidated Asset Pension Pool (CAPP)

As of September 30, 2024

September 30, 2024 : \$15,360,082,873



	Market Value (\$)	Allocation (%)
Domestic Equity	4,214,460,562	27.44
Private Investments	2,563,923,373	16.69
International Equity	2,288,404,770	14.90
Core Fixed Income	2,270,584,729	14.78
Real Estate	1,903,016,741	12.39
Non-Core Fixed Income	1,127,039,563	7.34
Real Assets	893,974,388	5.82
Cash Pension	98,678,748	0.64

Allocations shown may not sum up to 100% due to rounding.



Montana Board of Investments  
Comparative Performance  
Consolidated Asset Pension Pool (CAPP)

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>6.33</b>	<b>20.00</b>	<b>34.71</b>	<b>10.12</b>	<b>15.20</b>	<b>13.34</b>	<b>12.45</b>	<b>25.70</b>	<b>-18.98</b>	<b>27.17</b>	<b>20.09</b>	<b>30.75</b>	<b>10.45</b>	<b>05/01/2003</b>
Domestic Equity Custom Index	6.18	20.66	35.31	10.40	15.44	13.88	13.01	26.25	-19.22	26.12	21.10	31.14	11.12	
Difference	0.15	-0.66	-0.60	-0.28	-0.24	-0.54	-0.56	-0.55	0.24	1.05	-1.01	-0.39	-0.67	
<b>International Equity</b>	<b>8.00</b>	<b>13.77</b>	<b>24.84</b>	<b>3.09</b>	<b>7.47</b>	<b>5.42</b>	<b>5.52</b>	<b>14.91</b>	<b>-17.62</b>	<b>7.83</b>	<b>13.35</b>	<b>22.86</b>	<b>5.10</b>	<b>04/01/1997</b>
International Equity Custom Index	8.18	13.90	25.06	3.74	7.66	5.40	5.33	15.62	-16.58	8.53	11.12	21.63	5.37	
Difference	-0.18	-0.13	-0.22	-0.65	-0.19	0.02	0.19	-0.71	-1.04	-0.70	2.23	1.23	-0.27	
<b>Core Fixed Income</b>	<b>5.13</b>	<b>4.77</b>	<b>12.16</b>	<b>-0.90</b>	<b>0.79</b>	<b>1.62</b>	<b>1.96</b>	<b>5.43</b>	<b>-11.91</b>	<b>-1.54</b>	<b>8.23</b>	<b>6.90</b>	<b>5.11</b>	<b>04/01/1995</b>
Core Fixed Income Custom Index	5.20	4.45	11.57	-1.39	0.34	1.20	1.60	5.53	-13.01	-1.54	7.51	6.39	4.49	
Difference	-0.07	0.32	0.59	0.49	0.45	0.42	0.36	-0.10	1.10	0.00	0.72	0.51	0.62	
<b>Non-Core Fixed Income</b>	<b>5.29</b>	<b>7.87</b>	<b>15.22</b>	<b>2.13</b>	<b>3.61</b>	<b>3.82</b>	<b>4.16</b>	<b>11.05</b>	<b>-11.27</b>	<b>3.21</b>	<b>6.37</b>	<b>13.98</b>	<b>6.76</b>	<b>06/01/2009</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	7.81	
Difference	0.01	-0.13	-0.51	-0.96	-1.09	-0.88	-0.88	-2.39	-0.09	-2.05	-0.68	-0.34	-1.05	
<b>Real Assets</b>	<b>2.27</b>	<b>6.30</b>	<b>8.44</b>	<b>10.85</b>	<b>6.96</b>	<b>5.63</b>	<b>N/A</b>	<b>8.48</b>	<b>15.88</b>	<b>21.24</b>	<b>-13.43</b>	<b>-2.18</b>	<b>5.89</b>	<b>04/01/2017</b>
Real Assets Custom Index	7.93	10.76	16.27	6.89	4.61	3.35	1.10	4.39	1.36	13.32	-12.32	13.06	4.00	
Difference	-5.66	-4.46	-7.83	3.96	2.35	2.28	N/A	4.09	14.52	7.92	-1.11	-15.24	1.89	
<b>Real Estate</b>	<b>0.63</b>	<b>-2.00</b>	<b>-2.43</b>	<b>3.43</b>	<b>4.57</b>	<b>5.59</b>	<b>7.26</b>	<b>-5.76</b>	<b>12.00</b>	<b>20.00</b>	<b>-0.35</b>	<b>6.97</b>	<b>4.25</b>	<b>06/01/2006</b>
Real Estate Custom Index	-0.66	-8.06	-9.99	1.02	-2.58	1.07	3.72	-12.88	20.96	13.64	-19.66	25.84	3.98	
Difference	1.29	6.06	7.56	2.41	7.15	4.52	3.54	7.12	-8.96	6.36	19.31	-18.87	0.27	
<b>Cash Pension</b>	<b>1.09</b>	<b>4.65</b>	<b>6.33</b>	<b>4.24</b>	<b>2.81</b>	<b>2.59</b>	<b>N/A</b>	<b>6.01</b>	<b>2.06</b>	<b>0.13</b>	<b>0.84</b>	<b>2.28</b>	<b>2.50</b>	<b>05/01/2017</b>
Short Term Custom Index	1.36	4.18	5.64	3.71	2.37	2.27	1.74	5.28	1.69	0.04	0.36	2.14	2.21	
Difference	-0.27	0.47	0.69	0.53	0.44	0.32	N/A	0.73	0.37	0.09	0.48	0.14	0.29	
<b>Private Investments*</b>	<b>1.29</b>	<b>3.04</b>	<b>4.13</b>	<b>7.12</b>	<b>13.25</b>	<b>12.96</b>	<b>11.75</b>	<b>6.08</b>	<b>5.94</b>	<b>39.81</b>	<b>10.91</b>	<b>12.95</b>	<b>12.44</b>	<b>05/01/2002</b>
Private Investments Custom Index	7.20	10.04	22.57	4.68	10.89	9.23	10.42	17.46	-13.86	16.54	18.90	27.38	10.94	
Difference	-5.91	-7.00	-18.44	2.44	2.36	3.73	1.33	-11.38	19.80	23.27	-7.99	-14.43	1.50	

\*Performance is based on the prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Please see Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

**Montana Board of Investments**  
**Comparative Performance**  
**Investment Pools**

**As of September 30, 2024**

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>6.34</b>	<b>20.18</b>	<b>34.92</b>	<b>10.22</b>	<b>15.39</b>	<b>13.58</b>	<b>12.71</b>	<b>25.77</b>	<b>-18.95</b>	<b>27.47</b>	<b>20.37</b>	<b>31.13</b>	<b>10.72</b>	<b>05/01/2003</b>
All Public Plans-US Equity Segment Median	5.99	18.23	32.50	8.57	13.64	12.26	11.65	23.18	-18.06	24.45	18.90	30.04	10.48	
Rank	38	28	23	23	19	23	19	21	63	30	31	29	28	
Population	60	59	59	54	47	44	42	61	65	70	67	65	10	
<b>International Equity</b>	<b>8.02</b>	<b>13.98</b>	<b>25.09</b>	<b>3.29</b>	<b>7.74</b>	<b>5.70</b>	<b>5.82</b>	<b>15.06</b>	<b>-17.46</b>	<b>8.18</b>	<b>13.71</b>	<b>23.28</b>	<b>5.49</b>	<b>04/01/1997</b>
All Public Plans-Intl. Equity Segment Median	7.77	13.79	25.36	3.98	8.66	6.60	6.53	17.01	-16.87	9.33	12.71	23.68	N/A	
Rank	28	42	64	64	73	77	80	75	57	73	44	60	N/A	
Population	60	58	58	55	50	50	47	60	65	69	68	65	N/A	
<b>Core Fixed Income</b>	<b>5.13</b>	<b>4.92</b>	<b>12.34</b>	<b>-0.82</b>	<b>0.86</b>	<b>1.69</b>	<b>2.01</b>	<b>5.47</b>	<b>-11.87</b>	<b>-1.48</b>	<b>8.31</b>	<b>6.94</b>	<b>5.24</b>	<b>04/01/1995</b>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	5.24	4.96	12.30	-0.96	0.89	2.00	2.34	5.98	-12.95	-1.24	8.34	9.17	5.07	
Rank	79	57	45	35	56	82	81	86	14	63	51	98	23	
Population	125	125	124	123	122	119	116	138	146	152	160	162	56	
<b>Non-Core Fixed Income</b>	<b>5.30</b>	<b>8.54</b>	<b>16.06</b>	<b>2.63</b>	<b>4.13</b>	<b>4.36</b>	<b>4.70</b>	<b>11.61</b>	<b>-11.05</b>	<b>3.63</b>	<b>6.94</b>	<b>14.65</b>	<b>7.31</b>	<b>06/01/2009</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	7.79	
Rank	14	22	12	86	85	79	72	73	83	91	44	41	77	
Population	128	126	126	124	120	117	109	154	168	169	183	195	83	
<b>Trust Funds Investment Pool</b>	<b>3.91</b>	<b>2.89</b>	<b>7.89</b>	<b>0.20</b>	<b>1.72</b>	<b>2.57</b>	<b>2.96</b>	<b>2.84</b>	<b>-6.02</b>	<b>1.59</b>	<b>7.30</b>	<b>9.06</b>	<b>5.42</b>	<b>10/01/1995</b>
All Public Plans-US Fixed Income Segment Median	4.68	4.56	11.07	-0.76	1.22	2.20	2.42	5.79	-11.80	-0.11	8.62	9.25	N/A	
Rank	87	99	93	28	37	27	30	87	14	12	78	53	N/A	
Population	61	61	61	57	50	49	46	63	70	73	74	68	N/A	
<b>Real Estate</b>	<b>0.97</b>	<b>-1.04</b>	<b>-1.28</b>	<b>4.59</b>	<b>5.82</b>	<b>7.03</b>	<b>8.70</b>	<b>-4.54</b>	<b>13.02</b>	<b>21.37</b>	<b>1.11</b>	<b>8.65</b>	<b>5.66</b>	<b>06/01/2006</b>
All Public Plans-Real Estate Segment Median	0.55	-1.97	-4.24	4.65	5.69	6.93	8.10	-6.02	13.88	20.84	1.66	7.65	N/A	
Rank	36	36	26	53	48	49	33	41	56	47	72	39	N/A	
Population	44	40	40	36	28	22	15	40	42	41	38	35	N/A	

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments  
Comparative Performance  
Equity Composites

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Domestic Large Cap Equity - Net</b>	<b>5.93</b>	<b>21.74</b>	<b>36.37</b>	<b>11.28</b>	<b>16.29</b>	<b>14.58</b>	<b>13.42</b>	<b>27.18</b>	<b>-19.30</b>	<b>28.39</b>	<b>21.44</b>	<b>31.06</b>	<b>10.32</b>	<b>12/01/2006</b>
S&P 500 Index (Cap Wtd)	5.89	22.08	36.35	11.91	15.98	14.50	13.38	26.29	-18.11	28.71	18.40	31.49	10.41	
Difference	0.04	-0.34	0.02	-0.63	0.31	0.08	0.04	0.89	-1.19	-0.32	3.04	-0.43	-0.09	
<b>Domestic Large Cap Equity - Gross</b>	<b>5.93</b>	<b>21.75</b>	<b>36.39</b>	<b>11.29</b>	<b>16.39</b>	<b>14.71</b>	<b>13.56</b>	<b>27.19</b>	<b>-19.29</b>	<b>28.61</b>	<b>21.66</b>	<b>31.29</b>	<b>10.51</b>	<b>12/01/2006</b>
IM U.S. Large Cap Equity (SA+CF) Median	5.97	20.24	34.87	10.83	15.27	13.83	12.89	25.14	-17.03	27.40	18.31	30.48	10.46	
Rank	51	39	36	41	30	32	34	34	68	37	34	43	48	
<b>Domestic Mid Cap Equity - Net</b>	<b>6.97</b>	<b>13.37</b>	<b>26.56</b>	<b>7.52</b>	<b>11.76</b>	<b>10.08</b>	<b>9.57</b>	<b>16.39</b>	<b>-13.07</b>	<b>25.15</b>	<b>13.53</b>	<b>28.03</b>	<b>9.15</b>	<b>01/01/2005</b>
Russell Mid Cap Index	9.21	14.63	29.33	5.75	11.30	10.48	10.19	17.23	-17.32	22.58	17.10	30.54	9.69	
Difference	-2.24	-1.26	-2.77	1.77	0.46	-0.40	-0.62	-0.84	4.25	2.57	-3.57	-2.51	-0.54	
<b>Domestic Mid Cap Equity - Gross</b>	<b>6.97</b>	<b>13.37</b>	<b>26.56</b>	<b>7.52</b>	<b>11.76</b>	<b>10.20</b>	<b>9.85</b>	<b>16.39</b>	<b>-13.07</b>	<b>25.15</b>	<b>13.53</b>	<b>28.11</b>	<b>9.54</b>	<b>01/01/2005</b>
IM U.S. Mid Cap Equity (SA+CF) Median	7.84	13.23	26.76	6.67	11.73	10.88	10.72	18.30	-13.95	24.75	14.21	30.24	10.27	
Rank	60	48	52	42	48	61	72	67	44	45	58	66	82	
<b>Domestic Small Cap Equity - Net</b>	<b>9.01</b>	<b>10.95</b>	<b>26.60</b>	<b>5.35</b>	<b>10.99</b>	<b>9.17</b>	<b>9.95</b>	<b>18.15</b>	<b>-16.81</b>	<b>27.56</b>	<b>13.07</b>	<b>25.76</b>	<b>11.36</b>	<b>03/01/2003</b>
Russell 2000 Index	9.27	11.17	26.76	1.84	9.39	7.36	8.78	16.93	-20.44	14.82	19.96	25.53	10.28	
Difference	-0.26	-0.22	-0.16	3.51	1.60	1.81	1.17	1.22	3.63	12.74	-6.89	0.23	1.08	
<b>Domestic Small Cap Equity - Gross</b>	<b>9.02</b>	<b>10.97</b>	<b>26.64</b>	<b>5.38</b>	<b>11.18</b>	<b>9.45</b>	<b>10.35</b>	<b>18.18</b>	<b>-16.79</b>	<b>28.00</b>	<b>13.50</b>	<b>26.25</b>	<b>11.82</b>	<b>03/01/2003</b>
IM U.S. Small Cap Equity (SA+CF) Median	8.45	11.90	26.40	4.78	11.25	9.50	10.39	17.48	-16.55	23.78	17.62	25.83	12.15	
Rank	41	61	48	44	52	51	53	45	52	33	59	48	59	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments  
Comparative Performance  
Equity Composites

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>International Large Cap Passive - Net</b>	<b>7.83</b>	<b>14.13</b>	<b>25.17</b>	<b>4.18</b>	<b>7.65</b>	<b>5.52</b>	<b>5.46</b>	<b>15.68</b>	<b>-15.86</b>	<b>7.76</b>	<b>10.81</b>	<b>21.59</b>	<b>6.70</b>	<b>06/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	8.06	14.21	25.35	4.14	7.59	5.44	5.22	15.62	-16.00	7.82	10.65	21.51	6.53	
Difference	-0.23	-0.08	-0.18	0.04	0.06	0.08	0.24	0.06	0.14	-0.06	0.16	0.08	0.17	
<b>International Large Cap Passive - Gross</b>	<b>7.84</b>	<b>14.16</b>	<b>25.21</b>	<b>4.22</b>	<b>7.70</b>	<b>5.57</b>	<b>5.52</b>	<b>15.71</b>	<b>-15.82</b>	<b>7.82</b>	<b>10.87</b>	<b>21.66</b>	<b>6.77</b>	<b>06/01/2009</b>
<b>International Equity Active - Net</b>	<b>8.07</b>	<b>13.75</b>	<b>24.85</b>	<b>2.03</b>	<b>7.39</b>	<b>5.47</b>	<b>6.11</b>	<b>13.90</b>	<b>-19.26</b>	<b>7.77</b>	<b>15.91</b>	<b>25.83</b>	<b>4.18</b>	<b>04/01/1997</b>
MSCI ACW Ex US Index (USD) (Net)	8.06	14.21	25.35	4.14	7.59	5.44	5.22	15.62	-16.00	7.82	10.65	21.51	N/A	
Difference	0.01	-0.46	-0.50	-2.11	-0.20	0.03	0.89	-1.72	-3.26	-0.05	5.26	4.32	N/A	
<b>International Equity Active - Gross</b>	<b>8.20</b>	<b>14.17</b>	<b>25.46</b>	<b>2.55</b>	<b>7.94</b>	<b>6.01</b>	<b>6.65</b>	<b>14.48</b>	<b>-18.82</b>	<b>8.30</b>	<b>16.50</b>	<b>26.48</b>	<b>4.71</b>	<b>04/01/1997</b>
IM International Large Cap Core Equity (SA+CF) Median	6.97	14.13	25.71	5.22	9.00	6.50	6.56	17.94	-15.93	11.88	11.78	23.63	7.23	
Rank	29	50	56	87	82	68	44	88	75	79	29	31	100	
<b>International Value - Net</b>	<b>8.99</b>	<b>16.12</b>	<b>26.28</b>	<b>5.63</b>	<b>8.29</b>	<b>6.23</b>	<b>6.09</b>	<b>14.97</b>	<b>-13.14</b>	<b>9.32</b>	<b>9.31</b>	<b>20.76</b>	<b>3.75</b>	<b>11/01/2006</b>
MSCI ACW Ex US Val Index (USD) (Net)	9.26	14.40	24.04	7.49	7.79	4.87	4.28	17.30	-8.59	10.46	-0.77	15.72	3.40	
Difference	-0.27	1.72	2.24	-1.86	0.50	1.36	1.81	-2.33	-4.55	-1.14	10.08	5.04	0.35	
<b>International Value - Gross</b>	<b>9.11</b>	<b>16.50</b>	<b>26.84</b>	<b>6.12</b>	<b>8.80</b>	<b>6.74</b>	<b>6.62</b>	<b>15.49</b>	<b>-12.73</b>	<b>9.85</b>	<b>9.87</b>	<b>21.37</b>	<b>4.31</b>	<b>11/01/2006</b>
IM International Large Cap Value Equity (SA+CF) Median	8.52	13.83	23.56	7.20	9.08	6.40	6.35	18.77	-8.96	12.25	4.44	21.12	5.24	
Rank	43	18	21	66	56	32	42	80	71	67	26	45	86	
<b>International Growth - Net</b>	<b>7.06</b>	<b>9.68</b>	<b>22.30</b>	<b>-1.01</b>	<b>5.88</b>	<b>4.86</b>	<b>5.59</b>	<b>13.80</b>	<b>-23.99</b>	<b>3.79</b>	<b>23.08</b>	<b>31.39</b>	<b>3.85</b>	<b>11/01/2006</b>
MSCI ACW Ex US Grth Index (USD) (Net)	6.92	14.06	26.75	0.81	7.09	5.77	5.97	14.03	-23.05	5.09	22.20	27.34	4.73	
Difference	0.14	-4.38	-4.45	-1.82	-1.21	-0.91	-0.38	-0.23	-0.94	-1.30	0.88	4.05	-0.88	
<b>International Growth - Gross</b>	<b>7.19</b>	<b>10.09</b>	<b>22.92</b>	<b>-0.50</b>	<b>6.43</b>	<b>5.42</b>	<b>6.16</b>	<b>14.39</b>	<b>-23.58</b>	<b>4.33</b>	<b>23.74</b>	<b>32.10</b>	<b>4.39</b>	<b>11/01/2006</b>
IM International Large Cap Growth Equity (SA+CF) Median	6.71	12.92	26.05	2.08	8.74	7.46	7.49	17.08	-22.09	10.93	22.45	29.57	6.07	
Rank	43	77	81	74	90	87	84	82	53	85	47	25	100	
<b>International Small Cap - Net</b>	<b>7.98</b>	<b>14.64</b>	<b>25.17</b>	<b>0.88</b>	<b>7.81</b>	<b>4.89</b>	<b>6.16</b>	<b>14.01</b>	<b>-21.69</b>	<b>11.57</b>	<b>14.63</b>	<b>23.91</b>	<b>5.09</b>	<b>09/01/2006</b>
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	8.90	11.93	23.25	1.39	8.21	5.20	6.08	15.66	-19.97	12.93	14.24	22.42	5.61	
Difference	-0.92	2.71	1.92	-0.51	-0.40	-0.31	0.08	-1.65	-1.72	-1.36	0.39	1.49	-0.52	

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of Acadian Ex US Small Cap (SA) and BlackRock ACW Ex US Sm Cap Index (CF).

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

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	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Domestic Large Cap Equity</b>														
<b>BlackRock MSCI US Equity Index (SA) - Net</b>	<b>5.92</b>	<b>21.66</b>	<b>36.22</b>	<b>11.09</b>	<b>15.92</b>	<b>N/A</b>	<b>N/A</b>	<b>27.11</b>	<b>-19.46</b>	<b>26.95</b>	<b>21.33</b>	<b>N/A</b>	<b>15.57</b>	<b>04/01/2019</b>
MSCI US Index (USD) (Gross)	5.93	21.69	36.22	11.10	15.94	14.44	13.30	27.10	-19.46	26.97	21.37	31.64	15.59	
Difference	-0.01	-0.03	0.00	-0.01	-0.02	N/A	N/A	0.01	0.00	-0.02	-0.04	N/A	-0.02	
<b>BlackRock MSCI US Equity Index (SA) - Gross</b>	<b>5.92</b>	<b>21.67</b>	<b>36.24</b>	<b>11.10</b>	<b>15.93</b>	<b>N/A</b>	<b>N/A</b>	<b>27.12</b>	<b>-19.45</b>	<b>26.96</b>	<b>21.34</b>	<b>N/A</b>	<b>15.58</b>	<b>04/01/2019</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	5.88	21.07	35.27	11.09	15.53	13.83	13.18	24.70	-16.54	27.75	17.69	30.13	15.26	
Rank	46	46	42	50	38	N/A	N/A	29	78	56	28	N/A	40	
<b>Northern Trust MSCI US Index (SA) - Net</b>	<b>5.92</b>	<b>21.66</b>	<b>36.23</b>	<b>11.10</b>	<b>15.93</b>	<b>N/A</b>	<b>N/A</b>	<b>27.12</b>	<b>-19.46</b>	<b>26.97</b>	<b>21.34</b>	<b>31.70</b>	<b>15.49</b>	<b>11/01/2018</b>
MSCI US Index (USD) (Gross)	5.93	21.69	36.22	11.10	15.94	14.44	13.30	27.10	-19.46	26.97	21.37	31.64	15.49	
Difference	-0.01	-0.03	0.01	0.00	-0.01	N/A	N/A	0.02	0.00	0.00	-0.03	0.06	0.00	
<b>Northern Trust MSCI US Index (SA) - Gross</b>	<b>5.92</b>	<b>21.67</b>	<b>36.25</b>	<b>11.11</b>	<b>15.94</b>	<b>N/A</b>	<b>N/A</b>	<b>27.13</b>	<b>-19.45</b>	<b>26.98</b>	<b>21.36</b>	<b>31.71</b>	<b>15.50</b>	<b>11/01/2018</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	5.88	21.07	35.27	11.09	15.53	13.83	13.18	24.70	-16.54	27.75	17.69	30.13	14.97	
Rank	46	46	41	50	38	N/A	N/A	29	78	56	28	31	41	
<b>iShares:Core S&amp;P Tot USM (ITOT) - Net</b>	<b>6.15</b>	<b>20.39</b>	<b>35.08</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>26.41</b>	<b>-19.46</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.87</b>	<b>12/01/2021</b>
S&P Tot Mkt Index	6.16	20.61	35.24	10.12	15.15	13.64	12.75	26.06	-19.53	25.66	20.79	30.90	8.80	
Difference	-0.01	-0.22	-0.16	N/A	N/A	N/A	N/A	0.35	0.07	N/A	N/A	N/A	0.07	
<b>iShares:Core S&amp;P 500 (IVV) - Net</b>	<b>5.81</b>	<b>21.93</b>	<b>35.94</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>25.74</b>	<b>-17.03</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10.59</b>	<b>12/01/2021</b>
S&P 500 Index (Cap Wtd)	5.89	22.08	36.35	11.91	15.98	14.50	13.38	26.29	-18.11	28.71	18.40	31.49	10.27	
Difference	-0.08	-0.15	-0.41	N/A	N/A	N/A	N/A	-0.55	1.08	N/A	N/A	N/A	0.32	
<b>Domestic Mid Cap Equity</b>														
<b>iShares:Core S&amp;P Md-Cp (IJH) - Net</b>	<b>6.97</b>	<b>13.37</b>	<b>26.56</b>	<b>7.52</b>	<b>11.76</b>	<b>9.46</b>	<b>N/A</b>	<b>16.39</b>	<b>-13.07</b>	<b>25.15</b>	<b>13.53</b>	<b>26.24</b>	<b>9.60</b>	<b>07/01/2017</b>
S&P Mid Cap 400 Index (Cap Wtd)	6.94	13.54	26.79	7.47	11.78	9.96	10.32	16.44	-13.06	24.76	13.66	26.20	10.08	
Difference	0.03	-0.17	-0.23	0.05	-0.02	-0.50	N/A	-0.05	-0.01	0.39	-0.13	0.04	-0.48	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



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	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Domestic Small Cap Equity</b>														
<b>BlackRock MSCI USA Small Cap Index (SA) - Net</b>	<b>8.81</b>	<b>11.00</b>	<b>26.37</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.40</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.79</b>	<b>09/01/2022</b>
MSCI US Sm Cap Index (USD) (Net)	8.71	10.68	25.86	3.64	10.47	8.78	9.40	17.86	-17.55	19.11	18.32	26.74	12.30	
Difference	0.10	0.32	0.51	N/A	N/A	N/A	N/A	0.54	N/A	N/A	N/A	N/A	0.49	
<b>BlackRock MSCI USA Small Cap Index (SA) - Gross</b>	<b>8.82</b>	<b>11.03</b>	<b>26.41</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.43</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.83</b>	<b>09/01/2022</b>
IM U.S. Small Cap Core Equity (SA+CF) Median	9.06	12.41	26.98	5.13	11.72	9.50	10.56	17.25	-16.11	24.25	18.89	25.88	13.80	
Rank	56	61	57	N/A	N/A	N/A	N/A	38	N/A	N/A	N/A	N/A	64	
<b>iShares:Core S&amp;P Sm-Cp (IJR) - Net</b>	<b>10.14</b>	<b>9.07</b>	<b>25.45</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.85</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>11.25</b>	<b>11/01/2022</b>
S&P Sm Cap 600 Index (Cap Wtd)	10.13	9.33	25.86	3.99	10.21	8.37	10.05	16.05	-16.10	26.82	11.29	22.78	11.55	
Difference	0.01	-0.26	-0.41	N/A	N/A	N/A	N/A	-0.20	N/A	N/A	N/A	N/A	-0.30	

Gross of fees performance is not available (N/A) for the following funds: iShares:Core S&P Tot USM (ITOT), iShares:Core S&P 500 (IVV), iShares:Core S&P Md-Cp (IJH), and iShares:Core S&P Sm-Cp (IJR).

The current annual expense ratios for the iShares:Core S&P Tot USM (ITOT), iShares:Core S&P 500 (IVV), iShares:Core S&P Md-Cp (IJH), and iShares:Core S&P Sm-Cp (IJR) are 0.03%, 0.03%, 0.05%, and 0.06%, respectively.

See the Addendum for custom index specification.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

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	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>International Developed Large Cap Equity</b>														
<b>Acadian Asset Non-US Equity (SA) - Net</b>	<b>7.55</b>	<b>17.79</b>	<b>27.80</b>	<b>6.46</b>	<b>9.81</b>	<b>7.15</b>	<b>7.54</b>	<b>13.66</b>	<b>-13.02</b>	<b>16.67</b>	<b>8.89</b>	<b>19.38</b>	<b>4.85</b>	<b>11/01/2006</b>
MSCI ACW Ex US Val Index (USD) (Net)	9.26	14.40	24.04	7.49	7.79	4.87	4.28	17.30	-8.59	10.46	-0.77	15.72	3.40	
Difference	-1.71	3.39	3.76	-1.03	2.02	2.28	3.26	-3.64	-4.43	6.21	9.66	3.66	1.45	
<b>Acadian Asset Non-US Equity (SA) - Gross</b>	<b>7.67</b>	<b>18.18</b>	<b>28.38</b>	<b>6.95</b>	<b>10.33</b>	<b>7.67</b>	<b>8.07</b>	<b>14.18</b>	<b>-12.61</b>	<b>17.23</b>	<b>9.45</b>	<b>19.98</b>	<b>5.41</b>	<b>11/01/2006</b>
IM ACWI Ex US Value (SA+CF) Median	7.98	15.26	26.28	7.01	9.19	6.63	6.60	19.95	-11.11	11.13	6.65	21.34	5.21	
Rank	56	9	21	54	36	25	19	89	61	9	44	57	39	
<b>Lazard Asset Management (SA) - Net</b>	<b>10.88</b>	<b>14.07</b>	<b>24.40</b>	<b>4.87</b>	<b>7.10</b>	<b>5.48</b>	<b>N/A</b>	<b>16.54</b>	<b>-13.28</b>	<b>4.11</b>	<b>9.59</b>	<b>21.70</b>	<b>5.09</b>	<b>06/01/2015</b>
Lazard Custom Index	8.06	14.21	25.35	4.14	7.59	5.09	4.43	15.62	-16.00	7.82	10.65	21.51	4.76	
Difference	2.82	-0.14	-0.95	0.73	-0.49	0.39	N/A	0.92	2.72	-3.71	-1.06	0.19	0.33	
<b>Lazard Asset Management (SA) - Gross</b>	<b>10.99</b>	<b>14.44</b>	<b>24.94</b>	<b>5.36</b>	<b>7.61</b>	<b>5.99</b>	<b>N/A</b>	<b>17.06</b>	<b>-12.84</b>	<b>4.62</b>	<b>10.14</b>	<b>22.31</b>	<b>5.62</b>	<b>06/01/2015</b>
IM ACWI Ex US Value (SA+CF) Median	7.98	15.26	26.28	7.01	9.19	6.63	6.60	19.95	-11.11	11.13	6.65	21.34	6.57	
Rank	20	57	61	71	86	69	N/A	65	62	94	40	40	76	
<b>BlackRock ACW Ex US SuperFund A (CF) - Net</b>	<b>7.95</b>	<b>14.26</b>	<b>25.24</b>	<b>4.29</b>	<b>7.74</b>	<b>5.62</b>	<b>5.41</b>	<b>15.74</b>	<b>-15.77</b>	<b>8.00</b>	<b>10.80</b>	<b>21.77</b>	<b>6.73</b>	<b>06/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	8.06	14.21	25.35	4.14	7.59	5.44	5.22	15.62	-16.00	7.82	10.65	21.51	6.53	
Difference	-0.11	0.05	-0.11	0.15	0.15	0.18	0.19	0.12	0.23	0.18	0.15	0.26	0.20	
<b>BlackRock ACW Ex US SuperFund A (CF) - Gross</b>	<b>7.96</b>	<b>14.29</b>	<b>25.29</b>	<b>4.34</b>	<b>7.80</b>	<b>5.68</b>	<b>5.48</b>	<b>15.77</b>	<b>-15.72</b>	<b>8.07</b>	<b>10.88</b>	<b>21.85</b>	<b>6.80</b>	<b>06/01/2009</b>
IM All ACWI Ex US (SA+CF) Median	7.46	14.14	26.14	4.47	8.58	6.53	6.61	17.13	-16.92	9.74	14.84	25.13	8.07	
Rank	44	50	62	52	72	76	85	67	43	64	60	68	91	
<b>iShares:Core MSCI EAFE (IEFA) - Net</b>	<b>7.45</b>	<b>12.90</b>	<b>25.11</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.26</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>22.92</b>	<b>11/01/2022</b>
MSCI EAFE IM Index (USD) (Net)	7.71	12.74	24.60	4.60	7.93	5.72	5.76	17.51	-15.53	11.08	8.47	22.44	22.46	
Difference	-0.26	0.16	0.51	N/A	N/A	N/A	N/A	0.75	N/A	N/A	N/A	N/A	0.46	
<b>Baillie Gifford (SA) - Net</b>	<b>9.51</b>	<b>12.45</b>	<b>24.61</b>	<b>-5.26</b>	<b>5.42</b>	<b>4.32</b>	<b>N/A</b>	<b>9.48</b>	<b>-31.43</b>	<b>1.69</b>	<b>34.22</b>	<b>34.34</b>	<b>5.02</b>	<b>06/01/2015</b>
MSCI ACW Ex US Grth Index (USD) (Net)	6.92	14.06	26.75	0.81	7.09	5.77	5.97	14.03	-23.05	5.09	22.20	27.34	5.78	
Difference	2.59	-1.61	-2.14	-6.07	-1.67	-1.45	N/A	-4.55	-8.38	-3.40	12.02	7.00	-0.76	
<b>Baillie Gifford (SA) - Gross</b>	<b>9.64</b>	<b>12.85</b>	<b>25.20</b>	<b>-4.80</b>	<b>5.92</b>	<b>4.82</b>	<b>N/A</b>	<b>10.01</b>	<b>-31.11</b>	<b>2.16</b>	<b>34.86</b>	<b>34.99</b>	<b>5.54</b>	<b>06/01/2015</b>
IM ACWI Ex US Growth (SA+CF) Median	6.72	13.45	26.70	2.05	8.41	6.90	7.28	16.72	-23.43	9.20	22.06	29.53	6.95	
Rank	21	62	75	97	99	98	N/A	97	92	91	13	9	97	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.

Montana Board of Investments  
Comparative Performance  
International Equity Managers

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Invesco (SA) - Net</b>	<b>5.59</b>	<b>8.01</b>	<b>20.91</b>	<b>2.39</b>	<b>6.22</b>	<b>5.25</b>	<b>N/A</b>	<b>16.78</b>	<b>-17.80</b>	<b>5.60</b>	<b>14.84</b>	<b>29.29</b>	<b>5.04</b>	<b>06/01/2015</b>
MSCI ACW Ex US Grth Index (USD) (Net)	6.92	14.06	26.75	0.81	7.09	5.77	5.97	14.03	-23.05	5.09	22.20	27.34	5.78	
Difference	-1.33	-6.05	-5.84	1.58	-0.87	-0.52	N/A	2.75	5.25	0.51	-7.36	1.95	-0.74	
<b>Invesco (SA) - Gross</b>	<b>5.72</b>	<b>8.43</b>	<b>21.53</b>	<b>2.95</b>	<b>6.82</b>	<b>5.85</b>	<b>N/A</b>	<b>17.41</b>	<b>-17.32</b>	<b>6.20</b>	<b>15.51</b>	<b>30.05</b>	<b>5.67</b>	<b>06/01/2015</b>
IM ACWI Ex US Growth (SA+CF) Median	6.72	13.45	26.70	2.05	8.41	6.90	7.28	16.72	-23.43	9.20	22.06	29.53	6.95	
Rank	77	96	93	45	94	89	N/A	40	22	78	83	44	95	
<b>International Developed Small Cap Equity</b>														
<b>BlackRock ACW Ex US Sm Cap Index (CF) - Net</b>	<b>8.76</b>	<b>11.86</b>	<b>23.02</b>	<b>1.39</b>	<b>8.21</b>	<b>5.33</b>	<b>6.26</b>	<b>15.26</b>	<b>-19.65</b>	<b>12.84</b>	<b>14.45</b>	<b>22.68</b>	<b>7.15</b>	<b>02/01/2012</b>
MSCI ACWI Ex US Sm Cap Index (USD) (Net)	8.90	11.93	23.25	1.39	8.21	5.20	6.08	15.66	-19.97	12.93	14.24	22.42	6.98	
Difference	-0.14	-0.07	-0.23	0.00	0.00	0.13	0.18	-0.40	0.32	-0.09	0.21	0.26	0.17	
<b>BlackRock ACW Ex US Sm Cap Index (CF) - Gross</b>	<b>8.77</b>	<b>11.91</b>	<b>23.09</b>	<b>1.47</b>	<b>8.31</b>	<b>5.43</b>	<b>6.39</b>	<b>15.32</b>	<b>-19.57</b>	<b>12.98</b>	<b>14.50</b>	<b>22.90</b>	<b>7.29</b>	<b>02/01/2012</b>
IM International Small Cap Equity (SA+CF) Median	8.61	11.99	24.57	0.01	8.54	5.61	7.44	15.09	-21.52	13.74	13.95	24.61	9.17	
Rank	48	52	59	47	55	55	77	48	40	57	49	62	91	
<b>Acadian Ex US Small Cap (SA) - Net</b>	<b>7.63</b>	<b>16.29</b>	<b>26.44</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.23</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.50</b>	<b>03/01/2022</b>
MSCI ACW Ex US Sm Cap Index (USD) (Net)	8.90	11.93	23.25	1.39	8.21	5.20	6.08	15.66	-19.97	12.93	14.24	22.42	4.47	
Difference	-1.27	4.36	3.19	N/A	N/A	N/A	N/A	-3.43	N/A	N/A	N/A	N/A	1.03	
<b>Acadian Ex US Small Cap (SA) - Gross</b>	<b>7.79</b>	<b>16.82</b>	<b>27.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.94</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.18</b>	<b>03/01/2022</b>
IM International Small Cap Equity (SA+CF) Median	8.61	11.99	24.57	0.01	8.54	5.61	7.44	15.09	-21.52	13.74	13.95	24.61	4.82	
Rank	71	22	27	N/A	N/A	N/A	N/A	75	N/A	N/A	N/A	N/A	37	
<b>International Emerging Equity</b>														
<b>iShares:Core MSCI EmMkts (IEMG) - Net</b>	<b>7.25</b>	<b>14.58</b>	<b>24.15</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>11.68</b>	<b>-21.88</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.01</b>	<b>01/01/2022</b>
MSCI Emg Mkts IM Index (USD) (Net)	8.24	16.26	25.59	1.01	6.52	4.07	4.25	11.67	-19.83	-0.28	18.39	17.65	1.47	
Difference	-0.99	-1.68	-1.44	N/A	N/A	N/A	N/A	0.01	-2.05	N/A	N/A	N/A	-1.48	

Gross of fees performance is not available (N/A) for the following funds: iShares:Core MSCI EAFE (IEFA), International Equity Pool STIF, and iShares:Core MSCI EmMkts (IEMG). The current annual expense ratios for the iShares:Core MSCI EAFE (IEFA), and iShares:Core MSCI EmMkts (IEMG): are 0.07%, and 0.09%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.

Montana Board of Investments  
Comparative Performance  
Core Fixed Income Managers

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
US Fixed Income Aggregate - Net	5.13	4.77	12.18	-0.91	N/A	N/A	N/A	5.40	-11.87	-1.52	7.65	N/A	0.63	12/01/2019
Bloomberg US Agg Bond Index	5.20	4.45	11.57	-1.39	0.33	1.47	1.84	5.53	-13.01	-1.55	7.51	8.72	0.29	
Difference	-0.07	0.32	0.61	0.48	N/A	N/A	N/A	-0.13	1.14	0.03	0.14	N/A	0.34	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments  
Comparative Performance  
Non-Core Fixed Income Managers

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Neuberger Berman High Yield (SA) - Net</b>	<b>4.75</b>	<b>8.04</b>	<b>15.19</b>	<b>2.62</b>	<b>4.09</b>	<b>4.17</b>	<b>4.40</b>	<b>11.90</b>	<b>-11.34</b>	<b>4.76</b>	<b>6.30</b>	<b>13.75</b>	<b>6.07</b>	<b>01/01/2010</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	6.52	
Difference	-0.53	0.04	-0.54	-0.47	-0.61	-0.53	-0.64	-1.54	-0.16	-0.50	-0.75	-0.57	-0.45	
<b>Neuberger Berman High Yield (SA) - Gross</b>	<b>4.80</b>	<b>8.20</b>	<b>15.43</b>	<b>2.82</b>	<b>4.36</b>	<b>4.49</b>	<b>4.77</b>	<b>12.12</b>	<b>-11.16</b>	<b>4.96</b>	<b>6.75</b>	<b>14.26</b>	<b>6.48</b>	<b>01/01/2010</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.72	3.42	4.74	4.69	5.06	12.64	-9.37	5.31	6.57	14.25	6.61	
Rank	36	30	34	82	73	68	66	64	83	60	46	50	58	
<b>Oaktree US High Yield (SA) (CAPP) - Net</b>	<b>4.98</b>	<b>7.82</b>	<b>15.20</b>	<b>3.37</b>	<b>4.63</b>	<b>N/A</b>	<b>N/A</b>	<b>12.68</b>	<b>-9.92</b>	<b>4.91</b>	<b>6.56</b>	<b>15.44</b>	<b>4.62</b>	<b>01/01/2018</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	4.80	
Difference	-0.30	-0.18	-0.53	0.28	-0.07	N/A	N/A	-0.76	1.26	-0.35	-0.49	1.12	-0.18	
<b>Oaktree US High Yield (SA) (CAPP) - Gross</b>	<b>5.07</b>	<b>8.11</b>	<b>15.62</b>	<b>3.75</b>	<b>5.05</b>	<b>N/A</b>	<b>N/A</b>	<b>13.10</b>	<b>-9.60</b>	<b>5.34</b>	<b>7.07</b>	<b>16.02</b>	<b>5.07</b>	<b>01/01/2018</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	4.80	
Rank	21	33	23	34	34	N/A	N/A	39	53	50	42	17	39	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Net</b>	<b>4.07</b>	<b>6.79</b>	<b>13.30</b>	<b>3.10</b>	<b>4.33</b>	<b>N/A</b>	<b>N/A</b>	<b>12.06</b>	<b>-8.87</b>	<b>4.24</b>	<b>6.32</b>	<b>13.65</b>	<b>4.39</b>	<b>12/01/2017</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	4.79	
Difference	-1.21	-1.21	-2.43	0.01	-0.37	N/A	N/A	-1.38	2.31	-1.02	-0.73	-0.67	-0.40	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Gross</b>	<b>4.17</b>	<b>7.10</b>	<b>13.74</b>	<b>3.50</b>	<b>4.77</b>	<b>N/A</b>	<b>N/A</b>	<b>12.50</b>	<b>-8.52</b>	<b>4.68</b>	<b>6.82</b>	<b>14.18</b>	<b>4.85</b>	<b>12/01/2017</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	4.79	
Rank	66	73	76	48	49	N/A	N/A	54	38	70	46	51	47	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. No peer group is shown for Cohen & Steers Preferred Securities (SA) due to the lack of suitable Preferred Securities peer groups.

Montana Board of Investments  
Comparative Performance  
Non-Core Fixed Income Managers

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Cohen &amp; Steers Preferred Securities (SA) - Net</b>	<b>5.51</b>	<b>11.18</b>	<b>18.90</b>	<b>1.76</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.28</b>	<b>-11.53</b>	<b>3.70</b>	<b>N/A</b>	<b>N/A</b>	<b>3.52</b>	<b>11/01/2020</b>
Cohen & Steers Preferred Securities Custom Benchmark	5.47	10.37	17.78	1.68	N/A	N/A	N/A	8.57	-12.02	2.72	N/A	N/A	3.10	
Difference	0.04	0.81	1.12	0.08	N/A	N/A	N/A	-1.29	0.49	0.98	N/A	N/A	0.42	
<b>Cohen &amp; Steers Preferred Securities (SA) - Gross</b>	<b>5.59</b>	<b>11.45</b>	<b>19.29</b>	<b>2.10</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.64</b>	<b>-11.23</b>	<b>4.06</b>	<b>N/A</b>	<b>N/A</b>	<b>3.87</b>	<b>11/01/2020</b>
<b>Payden &amp; Rygel EMD (SA) - Net</b>	<b>7.10</b>	<b>6.96</b>	<b>16.46</b>	<b>-0.11</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>11.73</b>	<b>-15.45</b>	<b>-3.49</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.67</b>	<b>01/01/2021</b>
Payden & Rygel EMD Custom Benchmark	7.00	7.54	17.04	-0.08	N/A	N/A	N/A	11.59	-15.97	-3.92	N/A	N/A	-0.84	
Difference	0.10	-0.58	-0.58	-0.03	N/A	N/A	N/A	0.14	0.52	0.43	N/A	N/A	0.17	
<b>Payden &amp; Rygel EMD (SA) - Gross</b>	<b>7.19</b>	<b>7.23</b>	<b>16.86</b>	<b>0.24</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.12</b>	<b>-15.15</b>	<b>-3.14</b>	<b>N/A</b>	<b>N/A</b>	<b>-0.32</b>	<b>01/01/2021</b>
IM Emerging Markets Debt (SA+CF) Median	6.48	8.69	16.75	1.66	2.74	2.75	3.51	12.62	-12.08	-2.45	6.69	14.33	0.78	
Rank	33	61	49	83	N/A	N/A	N/A	58	69	58	N/A	N/A	78	
<b>Zazove Convertible Bonds (SA) - Net</b>	<b>4.98</b>	<b>5.48</b>	<b>9.75</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.15</b>	<b>04/01/2023</b>
Bloomberg US Convert's Liquid Bond Index	6.39	7.33	15.04	-1.10	11.07	9.80	9.31	14.64	-20.06	3.07	54.45	22.79	11.43	
Difference	-1.41	-1.85	-5.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4.28	
<b>Zazove Convertible Bonds (SA) - Gross</b>	<b>5.10</b>	<b>5.86</b>	<b>10.29</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.69</b>	<b>04/01/2023</b>
IM U.S. Convertible Bonds (SA+CF) Median	5.16	8.25	15.06	1.03	7.47	7.23	6.81	8.13	-11.70	6.22	18.71	18.70	9.59	
Rank	59	73	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	81	

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Montana Board of Investments  
Comparative Performance  
TFIP Fixed Income Managers

As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
<b>Trust Funds Investment Pool Fixed Income</b>	<b>5.26</b>	<b>5.44</b>	<b>13.11</b>	<b>0.14</b>	<b>1.70</b>	<b>2.54</b>	<b>2.76</b>	<b>7.03</b>	<b>-11.24</b>	<b>-0.47</b>	<b>8.84</b>	<b>9.12</b>	<b>5.27</b>	<b>10/01/1995</b>
Bloomberg US Agg Bond Index	5.20	4.45	11.57	-1.39	0.33	1.47	1.84	5.53	-13.01	-1.55	7.51	8.72	4.37	
Difference	0.06	0.99	1.54	1.53	1.37	1.07	0.92	1.50	1.77	1.08	1.33	0.40	0.90	
<b>Trust Funds Investment Pool Fixed Income</b>	<b>5.26</b>	<b>5.44</b>	<b>13.11</b>	<b>0.14</b>	<b>1.70</b>	<b>2.54</b>	<b>2.76</b>	<b>7.03</b>	<b>-11.24</b>	<b>-0.47</b>	<b>8.84</b>	<b>9.12</b>	<b>5.27</b>	<b>10/01/1995</b>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	5.24	4.96	12.30	-0.96	0.89	2.00	2.34	5.98	-12.95	-1.24	8.34	9.17	4.88	
Rank	46	26	16	8	10	10	12	13	8	21	35	54	6	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Net</b>	<b>4.03</b>	<b>6.70</b>	<b>13.17</b>	<b>3.00</b>	<b>4.25</b>	<b>N/A</b>	<b>N/A</b>	<b>12.02</b>	<b>-9.04</b>	<b>4.31</b>	<b>6.05</b>	<b>N/A</b>	<b>4.35</b>	<b>07/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	4.74	
Difference	-1.25	-1.30	-2.56	-0.09	-0.45	N/A	N/A	-1.42	2.14	-0.95	-1.00	N/A	-0.39	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Gross</b>	<b>4.13</b>	<b>7.01</b>	<b>13.61</b>	<b>3.40</b>	<b>4.69</b>	<b>N/A</b>	<b>N/A</b>	<b>12.46</b>	<b>-8.68</b>	<b>4.74</b>	<b>6.54</b>	<b>N/A</b>	<b>4.78</b>	<b>07/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	4.82	
Rank	66	76	77	52	56	N/A	N/A	55	39	67	53	N/A	55	
<b>Oaktree US High Yield (SA) (TFIP) - Net</b>	<b>4.97</b>	<b>7.91</b>	<b>15.34</b>	<b>3.54</b>	<b>4.77</b>	<b>N/A</b>	<b>N/A</b>	<b>12.72</b>	<b>-9.51</b>	<b>4.93</b>	<b>6.72</b>	<b>N/A</b>	<b>4.96</b>	<b>08/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	4.70	
Difference	-0.31	-0.09	-0.39	0.45	0.07	N/A	N/A	-0.72	1.67	-0.33	-0.33	N/A	0.26	
<b>Oaktree US High Yield (SA) (TFIP) - Gross</b>	<b>5.06</b>	<b>8.20</b>	<b>15.76</b>	<b>3.92</b>	<b>5.20</b>	<b>N/A</b>	<b>N/A</b>	<b>13.14</b>	<b>-9.20</b>	<b>5.36</b>	<b>7.25</b>	<b>N/A</b>	<b>5.38</b>	<b>08/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	4.83	
Rank	21	29	17	29	29	N/A	N/A	38	49	49	38	N/A	20	
<b>Neuberger Berman High Yield (SA) (TFIP) - Net</b>	<b>4.75</b>	<b>8.17</b>	<b>15.35</b>	<b>2.60</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>11.83</b>	<b>-11.43</b>	<b>4.62</b>	<b>N/A</b>	<b>N/A</b>	<b>6.80</b>	<b>04/01/2020</b>
Bloomberg US HY 2% Issuer Cap Index	5.28	8.00	15.73	3.09	4.70	4.70	5.04	13.44	-11.18	5.26	7.05	14.32	7.84	
Difference	-0.53	0.17	-0.38	-0.49	N/A	N/A	N/A	-1.61	-0.25	-0.64	N/A	N/A	-1.04	
<b>Neuberger Berman High Yield (SA) (TFIP) - Gross</b>	<b>4.80</b>	<b>8.33</b>	<b>15.58</b>	<b>2.80</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.05</b>	<b>-11.25</b>	<b>4.81</b>	<b>N/A</b>	<b>N/A</b>	<b>7.05</b>	<b>04/01/2020</b>
IM U.S. High Yield Bonds (SA+CF) Median	4.55	7.64	14.75	3.42	4.75	4.73	5.07	12.64	-9.37	5.31	6.58	14.25	7.75	
Rank	36	26	24	83	N/A	N/A	N/A	67	84	64	N/A	N/A	77	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments  
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	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
Abandoned Mine Trust	1.34	4.09	5.52	3.63	2.43	2.30	1.94	5.13	1.68	0.13	0.73	2.41	3.76	12/01/1993
Barker Hughesville St Response	3.43	2.77	7.16	0.90	N/A	N/A	N/A	2.90	-3.87	1.36	N/A	N/A	1.23	05/01/2020
Belt Water Treatment Plant Fund	3.43	2.84	7.15	0.99	2.07	N/A	N/A	2.96	-3.71	1.34	6.80	8.56	3.10	03/01/2018
Big Sky Economic Development Fund	3.84	2.57	7.41	0.60	1.90	2.64	2.97	2.53	-4.27	1.45	7.12	8.67	4.20	07/01/2005
Butte Area One Restoration	3.42	2.72	7.02	1.10	2.01	2.56	2.53	3.08	-3.26	1.26	6.07	6.76	2.98	11/01/2008
Clark Fork River Restoration	3.42	2.73	7.13	1.14	1.94	2.50	2.53	3.06	-3.17	1.19	5.65	7.04	3.20	11/01/2008
Coal Tax Cultural Trust Fund	3.78	2.60	7.42	0.69	1.93	2.66	2.98	2.73	-4.20	1.43	6.99	8.64	5.41	12/01/1993
Coal Tax Park Acquisition	3.67	2.62	7.35	0.74	1.93	2.66	2.97	2.72	-4.02	1.37	6.86	8.63	5.39	12/01/1993
Conservation District Fund	3.86	1.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.80	12/01/2023
Debt and Liability Fee Account	1.37	4.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.09	11/01/2023
East Helena Compensation Fund	1.64	2.68	5.42	2.63	2.23	2.54	2.38	4.53	0.48	0.42	2.65	5.52	2.20	01/01/2013
East Helena Greenway Trail Maintenance	3.18	3.11	7.02	1.45	N/A	N/A	N/A	3.32	-2.81	N/A	N/A	N/A	1.72	03/01/2021
Endowment for Children	3.77	2.63	7.41	0.72	1.95	2.66	2.93	2.80	-4.18	1.41	7.01	8.54	4.16	08/01/2007
Flying J CECRA Facilities Fund	3.42	2.77	7.15	0.91	N/A	N/A	N/A	2.91	-3.85	1.36	N/A	N/A	1.25	05/01/2020
FWP License Account	2.13	3.48	6.14	2.14	1.76	1.91	1.59	4.04	-1.41	0.46	1.85	3.33	2.77	11/01/1997
FWP Mitigation Trust Fund	3.06	3.18	6.92	1.48	1.79	2.15	1.81	3.41	-2.79	0.98	3.84	5.46	3.59	12/01/1993
FWP Real Property Trust	3.71	2.59	7.37	0.71	1.91	2.64	2.92	2.77	-4.13	1.38	6.83	8.62	4.87	12/01/1993
Group Benefits	1.85	3.74	5.91	2.61	2.13	2.25	1.95	4.16	-0.33	0.63	2.05	4.01	3.65	12/01/1993
Hail Insurance Investments	1.32	2.78	5.90	N/A	N/A	N/A	N/A	4.26	N/A	N/A	N/A	N/A	4.14	11/01/2022
Harold Hamm Endowment	3.46	2.75	7.18	0.86	1.99	2.67	N/A	2.87	-3.94	1.43	6.71	8.45	2.40	07/01/2016
History and Civics Endowment	1.33	4.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.06	01/01/2024
Invasive Species Trust Fund	3.66	2.83	7.51	0.86	N/A	N/A	N/A	2.65	-3.88	1.19	N/A	N/A	0.85	10/01/2020
Libby Asbestos Site State Cost	3.31	2.77	7.05	1.01	N/A	N/A	N/A	2.98	-3.60	1.25	N/A	N/A	1.30	05/01/2020
Luttrell Pit - Operational & Maintenance	3.52	2.76	7.22	1.17	N/A	N/A	N/A	3.07	-3.27	1.36	N/A	N/A	1.40	05/01/2020
Montana Pole	3.28	2.82	7.03	1.26	2.00	2.59	2.74	3.12	-2.92	1.14	5.61	7.48	4.62	09/01/1996
Montana State University	1.74	3.84	5.98	3.11	2.24	2.26	1.84	4.77	0.58	0.30	1.30	2.87	2.11	08/01/2004
Montana State Library Trust	3.59	2.67	8.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.34	10/01/2023
Montana Tech-UM Agency Funds	1.47	4.01	5.62	3.47	2.39	2.33	1.82	4.99	1.36	0.20	1.01	2.56	1.97	03/01/2003
MT BOI - Clark Fork Site	3.62	2.54	7.27	0.78	1.92	2.59	2.81	2.81	-3.95	1.44	6.65	8.00	3.64	11/01/2008
MT BOI UOFM Other	2.12	3.99	6.36	2.67	2.47	2.59	2.40	3.94	-0.16	0.73	3.47	4.54	2.90	08/01/2002
MT Housing Infrastructure Trust	0.95	3.23	4.61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.74	08/01/2023
MUS Group Insurance	1.66	3.89	5.78	3.11	2.31	2.38	2.06	4.74	0.57	0.26	1.70	3.39	1.79	10/01/2011
MUS Workers Compensation	2.05	3.63	6.07	2.81	2.31	2.50	N/A	4.44	0.10	0.46	2.55	4.43	2.26	04/01/2016

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments  
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As of September 30, 2024

	QTD/ FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2023	2022	2021	2020	2019	Since Incep.	Inception Date
Older Montanans Trust	3.80	2.71	7.56	0.73	1.99	2.70	2.97	2.78	-4.23	1.41	7.19	8.62	4.04	08/01/2007
Permanent Coal Trust Excl Crp	2.47	2.43	5.74	1.28	2.15	2.68	2.94	2.57	-2.02	1.82	5.57	6.81	5.19	12/01/1993
PERS Defined Cont Disability	6.12	13.66	24.33	5.60	8.98	8.15	N/A	17.09	-15.55	13.16	14.06	20.77	7.79	09/01/2015
Potter Trust Fund	3.47	2.74	7.19	0.86	1.99	2.68	N/A	2.86	-3.96	1.41	6.78	8.47	2.68	06/01/2016
Resource Indemnity Trust	3.89	2.57	7.50	0.57	1.90	2.67	3.00	2.60	-4.44	1.48	7.23	8.88	5.47	12/01/1993
School Facilities Fund	3.84	2.57	7.40	0.56	1.84	N/A	N/A	2.42	-4.24	1.39	6.97	7.88	2.43	01/01/2018
Smelter Hill Up Restorative	3.47	2.75	7.13	1.02	1.87	2.33	2.13	3.00	-3.54	1.29	5.62	5.64	2.19	11/01/2008
State Fund Insurance	4.79	6.14	12.60	1.87	3.29	3.64	3.68	6.49	-7.68	3.04	7.62	9.65	5.23	12/01/1993
Streamside Tailings Operable Unit	3.57	2.76	7.26	0.93	1.97	2.60	2.85	2.90	-3.70	1.27	6.47	7.92	4.73	02/01/1999
Subsequent Injury Fund	1.30	3.98	5.34	3.67	2.45	2.34	1.80	5.37	1.66	0.13	0.73	2.28	2.98	12/01/1993
Tobacco Trust Fund	3.82	2.51	7.41	0.57	1.89	2.63	2.97	2.63	-4.40	1.51	7.10	8.67	4.89	01/01/2001
Treasurers	1.52	3.79	5.55	3.39	2.26	2.20	1.72	5.08	1.34	0.10	0.63	2.28	2.81	12/01/1993
Montana Coal Endowment Fund	3.86	2.58	7.48	0.60	1.91	2.66	2.99	2.63	-4.37	1.47	7.15	8.81	5.36	12/01/1993
MT Coal Endowment Regional Water	3.85	2.58	7.48	0.60	1.91	2.66	2.99	2.63	-4.37	1.47	7.15	8.80	5.04	06/01/2000
Trust and Legacy Account	3.89	2.60	7.53	0.60	1.92	2.67	3.00	2.62	-4.37	1.47	7.19	8.84	6.02	07/01/1991
UCFRB Assess/Litig Cost Rec	3.85	2.59	7.48	0.59	1.83	2.57	2.85	2.61	-4.37	1.53	6.68	8.50	4.98	07/01/1999
UCFRB Restoration Fund	3.78	2.71	7.50	0.71	1.92	2.66	2.89	2.71	-4.22	1.36	6.90	8.52	4.93	06/01/1999
Upper Blackfoot Response	1.55	3.99	5.70	3.41	2.48	2.57	2.26	4.94	1.22	0.32	1.55	4.24	1.97	09/01/2010
Weed Control Trust	3.89	2.57	7.50	0.57	1.90	2.67	3.00	2.60	-4.44	1.48	7.23	8.88	4.75	12/01/1993
Wildlife Habitat Trust	3.66	2.63	7.34	0.71	1.90	2.63	2.90	2.72	-4.10	1.38	6.75	8.54	4.87	12/01/1993
Work Force Housing	1.29	4.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.96	11/01/2023
Yellowstone Pipeline Cleanup Fund	3.04	3.03	6.85	1.76	N/A	N/A	N/A	3.16	-1.42	N/A	N/A	N/A	1.78	04/01/2021
Zortman/Landusky LT H2O	1.33	4.07	5.51	3.63	2.42	2.32	1.99	5.13	1.68	0.13	0.73	2.28	5.77	09/01/1999
Z/L Long Term H2O Trust Fund	1.33	4.07	5.51	3.63	2.42	2.32	2.02	5.13	1.68	0.13	0.73	2.28	3.91	09/01/2005

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

**Performance Notes**

- All gross and net performance data is provided by State Street Analytics (SSA). Reported gross returns for the retirement plans prior to 07/01/2002 are net of all fees.
- Fiscal year ends on 06/30.
- Gross performance for the retirement plans is calculated with fee accruals provided by Montana's Accounting department.
- Gross of fees performance is not available (N/A) for the following funds: iShares:Core S&P Tot USM (ITOT), iShares:Core S&P 500 (IVV), iShares:Core S&P Md-Cp (IJH), iShares:Core S&P Sm-Cp (IJR), iShares:Core MSCI EAFE (IEFA), and iShares:Core MSCI EmMkts (IEMG).
- Non-Core Fixed Income currently consists of High Yield, Preferred Securities, EMD and Convertible Bonds.
- Private Investments currently consist of Private Equity, Private Credit, Venture Capital, and Passive ETFs.

**Index Notes**

- Retirement plan custom benchmarks are provided by State Street Bank and are calculated daily using actual allocations.
- The CAPP Custom Benchmark consists of the portfolio weighted average of the primary benchmark for each CAPP asset class.
- The Short Term Custom Benchmark consists of 100% ICE 1 Mo LIBOR Index (USD) through 4/30/2018, and 100% Federal Reserve US Treasury 1 Mo Constant Maturity Index thereafter.
- The Domestic Equity Custom Index consists of 100% S&P 1500 Comp Index through 04/30/2017 and 100% MSCI USA IM Index (USD) (Gross) thereafter.
- The International Equity Custom Index consists of 100% MSCI EAFE Index (USD) (Net) through 10/31/2006, 100% MSCI ACW Ex US Index (USD) (Net) through 06/30/2007, 92.5% MSCI ACW Ex US Index (USD) (Net) and 7.5% MSCI ACW Ex US SC IM Index (USD) (Net) through 02/28/2014, and 100% MSCI ACW Ex-US IM Index thereafter.
- The Real Estate Custom Index consists of 100% NCREIF ODCE Index (AWA) (Net) (1 Qtr Lag) through 03/31/2017, 100% MSCI US REIT Index (USD) (Gross) through 06/30/2020, and 100% NCREIF ODCE (AWA) (1 Qtr Lag) Index thereafter.
- The Private Investments Custom Index consists of 100% S&P 1500 Comp Index+4% (1 Qtr Lag) through 03/31/2017, 100% MSCI US Small Cap Index (USD) (Gross) through 12/31/2020, and the portfolio weighted MSCI US SC / S&P LSTA US Leverage Loan 100 Index for PE / PC thereafter.
- The Lazard Custom Index consists of 100% MSCI ACW Ex US Value Index (USD) (Net) through 6/30/2018 and 100% MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Templeton Custom Index consists of 100% MSCI ACW Ex US Small Cap Value Index (USD) (Net) through 5/31/2018, and 100% MSCI ACW Ex US Small Cap Index (USD) (Net) thereafter.
- The Reams Custom Index consists of 100% Bloomberg US Unv Bond Index through 03/31/2017, 100% Bloomberg US Agg Bond Index through 12/31/2019, and 100% Bloomberg US Unv Bond Index thereafter.
- The Cohen & Steers Custom Index consists of 60% ICE BofAML US IG Institutional Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index.
- The Payden & Rygel Custom Index consists of 70% JP Morgan EMBI Global Diversified Index, 30% JP Morgan GBI-EM Global Diversified Index.
- The JPM US Equity Custom Benchmark consists of 100% S&P 500 Index (Cap Weighted) through 06/30/2019 and 100% MSCI US Index (USD) (Gross) thereafter.
- The Real Assets Custom Index consists of 100% MSCI All Country World Commodity Producers Index (USD) (Net) through 12/31/2020, 33.33% MSCI All Country World Commodity Producers Index (USD) (Net), 33.33% MSCI All Country World Infrastructure Index, 33.33% Bloomberg Barclays Global Inflation Linked US TIPS Index through 5/31/2024, and the portfolio weighted average of MSCI All Country World Commodity Producers Index (USD) (Net), MSCI All Country World Infrastructure Index, Bloomberg Barclays Global Inflation Linked US TIPS Index, and Short Term Custom Benchmark thereafter.
- The Core Fixed Income Custom Index consists of 100% Bloomberg US Agg Bond Index through 03/31/2017, the portfolio weighted average of Broad Fixed Income - PAC Custom Blend, Bloomberg US Corp Inv Grade Index, Bloomberg US MBS Index, Bloomberg US Int TIPS Index, Bloomberg US Trsy Int Trm Index through 11/30/2019, and 100% Bloomberg US Agg Bond Index thereafter.
- As of 07/01/2021, the Trust Fund Custom Index Benchmark is the portfolio weighted averaged of the primary benchmark, consisting of NCREIF ODCE Index (1Q lag), Bloomberg US High Yield - 2% Issuer Cap Index, and Bloomberg US Aggregate Bond Index.

**Trust Accounts Comments**

- History and Civics Endowment and Conservation District Fund were added in 12/2023.
- Debt and Liability Fee Account and Work Force Housing were added in 10/2023.

**Manager Transition Comments**

- BlackRock MSCI Emg Mkts Index NL (CF) was terminated in 04/2023.
- Zazove Convertible Bonds (SA) was funded in 03/2023.
- American Century Investment Mgmt (SA) was terminated in 03/2023.
- Templeton Investment Counsel (SA) was terminated in 03/2023.
- Reams Asset Core Plus (SA) was terminated in 03/2023.
- iShares:Russ 2000 ETF (IWM) and iShares:MSCI EAFE ETF (EFA) were liquidated in Q4 2022 to fund iShares:Core S&P Small Cap ETF (IJR) and iShares:Core MSCI EAFE ETF (IEFA), respectively.
- BlackRock MSCI USA Small Cap Index was transitioned from a commingled fund to a separate account structure during Q3 2022 to obtain a lower fee structure.
- Acadian Ex US Small Cap (SA) was funded in 02/2022.
- DFA Emg Mkts Sm Cap;I (DEMSX) was liquidated in 02/2022.
- DFA Intl Sm Co;I (DFISX) was liquidated in 02/2022.
- iShares:MSCI Em Mkts (EEM) was liquidated in 01/2022.
- iShares:Core MSCI EmMkts (IEMG) was funded in 12/2021.
- SPDR S&P 500 ETF (SPY) was liquidated in 12/2021.
- iShares:Core S&P 500 (IVV) was funded in 11/2021.
- Vaughan Nelson Management (SA), T. Rowe U.S. Structured Research (SA), J.P. Morgan 130/30 (SA), Jacobs Levy 130/30 Large Cap (SA), and DFA US Sm Cap TR (CF) were liquidated in 11/2021.
- iShares:Core S&P Tot USM (ITOT) was funded in 11/2021.
- The Natural Resources PAC was renamed to the Real Assets PAC during Q1 2021.
- Payden & Rygel EMD (SA) was funded in 12/2020.
- Cohen & Steers Preferred Securities (SA) was funded in 10/2020.
- Neuberger Berman High Yield (SA) and TFIP Private Real Estate were funded in the Trust Fund Investment Pool during Q1 2020.
- Diversifying Strategies investments were liquidated and Investment Grade Credit, US Treasury & Agency, and TIPS were consolidated into the Core Fixed Income composite during Q4 2019.
- Post High Yield Plus (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were liquidated during Q3 2019.
- Oaktree US High Yield Fixed Income (SA) and Shenkman High Yield Fixed Income (SA) were funded in the Trust Fund Investment Pool during Q3 2019.
- Artisan Partners (SA), Iridian Asset Management (SA), Congress Mid Cap Growth (SA), TimeSquare Capital Management (SA), and Alliance Bernstein (SA) were liquidated in Q2 2019.
- BlackRock MSCI US Equity Index (CF) was transitioned into a separately managed account during Q1 2019.
- Northern Trust MSCI US Equity Index (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were funded during Q4 2018.
- Voya Investment Management (SA) was liquidated in 07/2018.
- iShares:Russ 2000 ETF (IWM) was funded in 04/2018.
- Jacobs Levy 130/30 Large Cap (SA) was funded in 03/2018.
- Congress Mid Cap Growth (SA) was funded in 02/2018.
- Oaktree US High Yield (SA) and Shenkman High Yield Fixed Income (SA) were funded in 12/2017.
- Analytic Investors 130/30 (SA) was liquidated in 09/2017.
- Effective 07/2016, the Metropolitan West Capital Management legal entity merged into the Wells Capital Management Incorporated legal entity. The Metropolitan West Capital Mgmt (SA) has been updated to Wells Capital Management (SA) to reflect the change.
- Residual assets from the liquidation of AllianceBernstein Int'l Value (SA), Martin Currie (SA), Hansberger Global Investors (SA), and Aberdeen Total Return Bond Strategy (SA) were distributed in 06/2017.
- INTECH Enhanced Plus was liquidated in 06/2017.
- BlackRock MSCI US Equity Index (CF), BlackRock MSCI US Sm Cap Equity Index (CF), and iShares:Core S&P Md-Cp (IJH) were funded in 06/2017.
- SPDR S&P 500 ETF (SPY) and iShares:MSCI EAFE ETF (EFA) were re-funded in 06/2017.
- BlackRock Equity Index Fund A (CF) and BlackRock Mid Cap Equity Index A (CF) were liquidated in 05/2017.
- Nicholas Investment Partners was liquidated in 07/2016. Residual assets from liquidation were distributed in 03/2017.
- Wells Capital Management (SA), Domestic Equity Pool SPIF, and International Equity Pool SPIF were liquidated in 10/2016. Wells Capital Management (SA) residual assets from liquidation were distributed in 03/2017.
- DFA Emg Mkts Sm Cap;I (DEMSX) was funded in 02/2017.
- SPDR S&P 500 ETF (SPY) was liquidated in 01/2017.
- iShares:MSCI Em Mkts (EEM) was funded in 12/2016.
- SPDR S&P 500 ETF (SPY) was initially funded in 09/2015, was then liquidated in 12/2015, and was re-funded in 10/2016.
- iShares S&P SmallCap 600 Index ETF (IJR) was liquidated in 01/2016.
- Effective 05/2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.

**Montana Board of Investments  
Fee Schedule**

**As of September 30, 2024**

	<b>Fee Schedule</b>	<b>Market Value As of 09/30/2024 (\$)</b>
iShares:Core S&P Tot USM (ITOT)	0.03 % of Assets	91,031,538
iShares:Core S&P 500 (IVV)	0.03 % of Assets	70,804,078
iShares:Core S&P Md-Cp (IJH)	0.05 % of Assets	37,783,058
iShares:Core S&P Sm-Cp (IJR)	0.06 % of Assets	89,930,544
iShares:Core MSCI EAFE (IEFA)	0.07 % of Assets	93,524,661
iShares:Core MSCI EmMkts (IEMG)	0.09 % of Assets	69,987,842

ETF fees are sourced from Morningstar and/or the investment manager.



PORTLAND

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# Investment Update

Board Meeting: November 20, 2024  
Information as of: September 30, 2024

Market values contained in this report are shown in USD. The information contained in this report is unaudited. The annual, audited Unified Investment Program Financial Statements are available on the Board's website at [www.investmentmt.com](http://www.investmentmt.com).



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# CIO Update

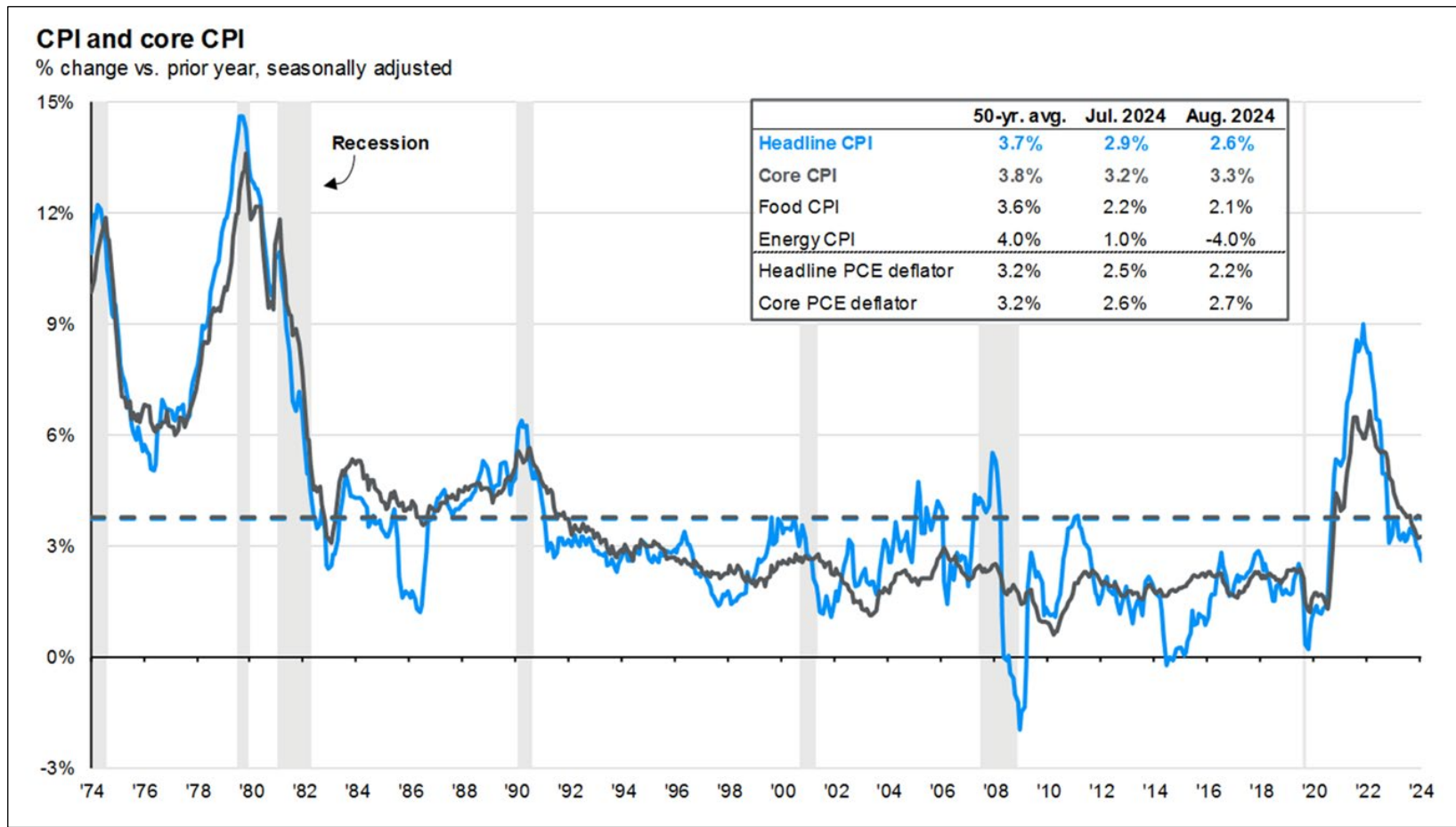
## Economic Environment

- **GDP** – The Bloomberg Economics Survey in Oct forecast U.S. GDP to grow 2.6% in 2024 and 1.8% in 2025. The Atlanta Federal Reserve GDPNow forecast is 2.8% as of Oct 29<sup>th</sup>.
- **Job Growth** – Employment surprised to the upside in September causing the unemployment rate to fall back to 4.1%.
- **Retail Sales** – Retail sales remained strong in the 3<sup>rd</sup> quarter as consumer spending was resilient. In Sept, sales ex. autos and gas increased 0.7% m/m.
- **Inflation** – CPI continues to decline but persists above the Fed target. In Sept, CPI was up 2.4% y/y and CPI ex. Food & Energy was up 3.3% y/y.
- **Housing** – Single family home inventory remains low. The seasonally adjusted annual rate of existing home sales are stuck near historic lows.
- **ISM Indices** – In Sept, the ISM Manufacturers Index at 47.2 continued to signal contraction while the ISM Services Index jumped to 54.9 indicating stronger expansion.

# CIO Update

## Economic Environment

Inflation is not at the Federal Reserve target but is inching closer.

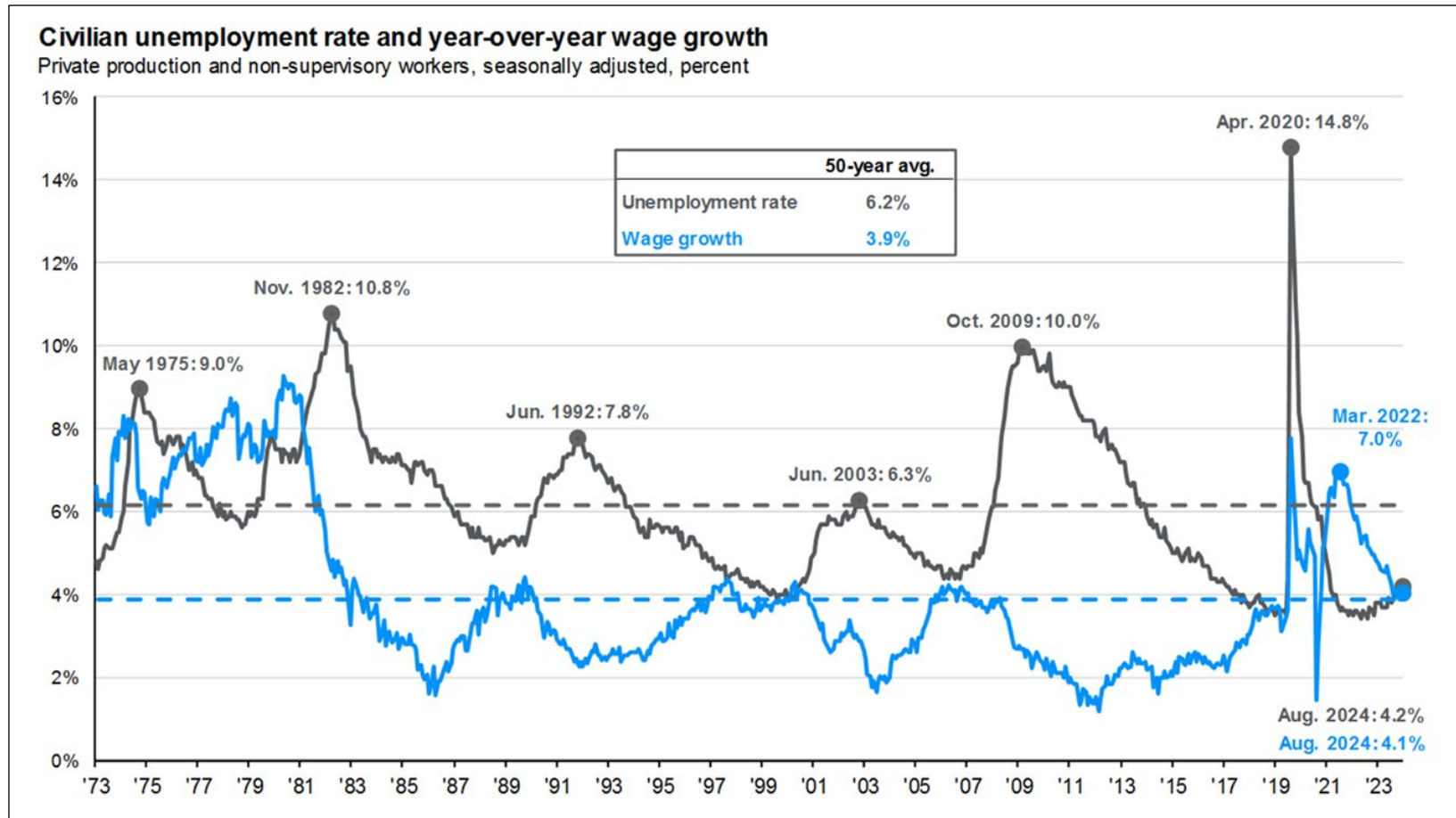


Source: J.P. Morgan Guide to the Markets, 4Q2024

# CIO Update

## Economic Environment

The unemployment rate remains well below the long-term average. Wage growth falling as inflation recedes.

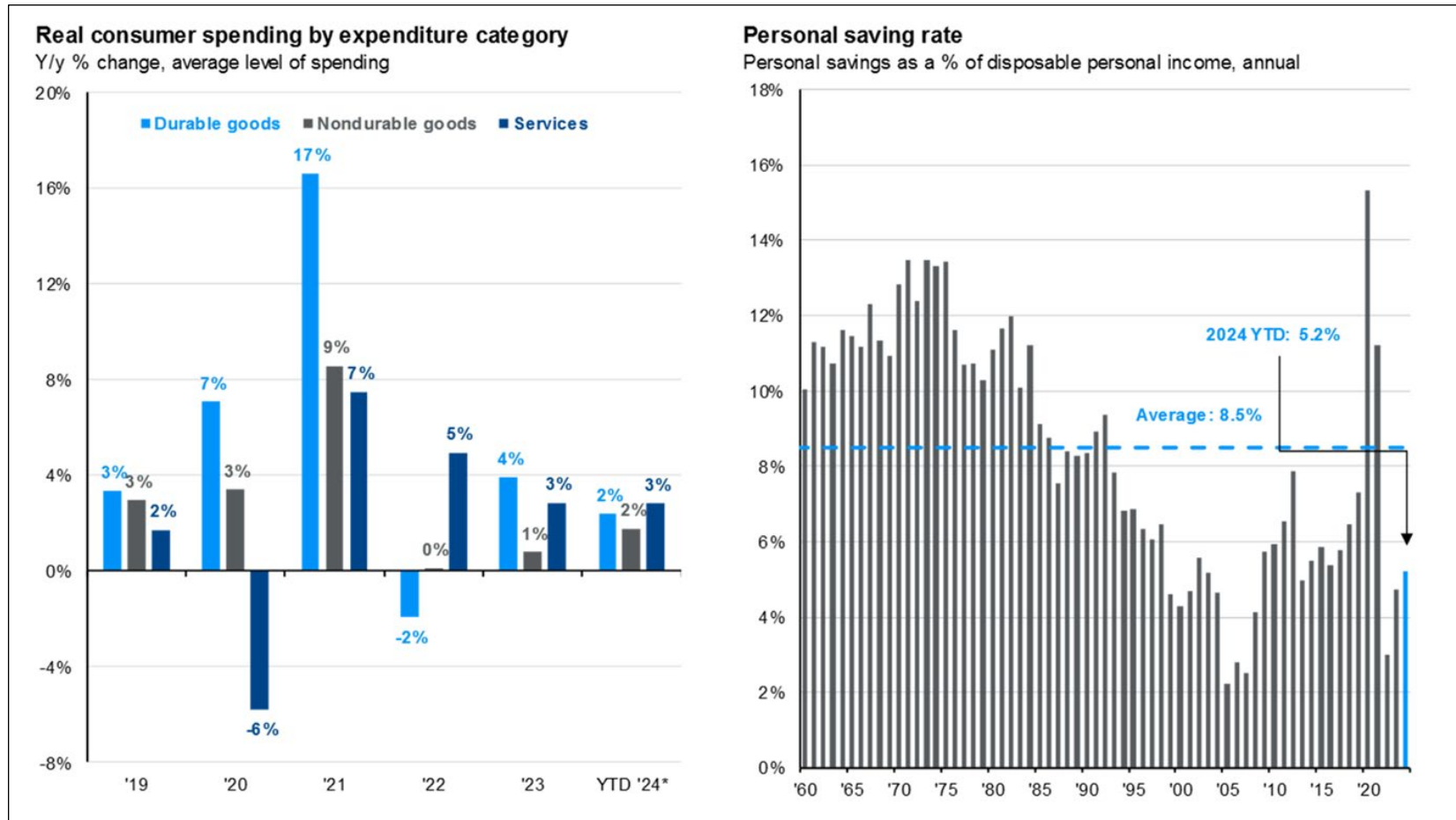


Source: J.P. Morgan Guide to the Markets, 4Q2024

# CIO Update

## Economic Environment

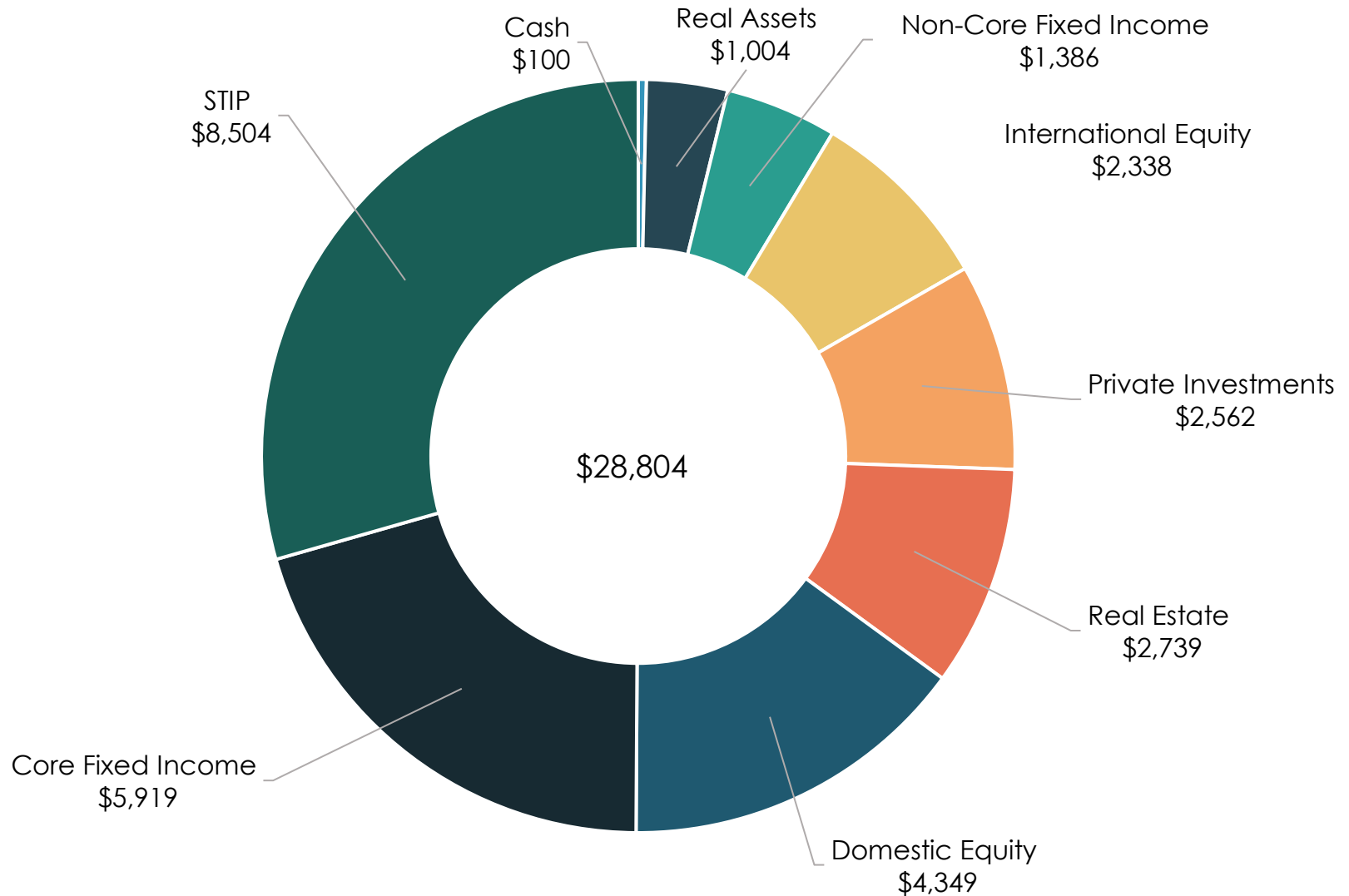
Consumer spending remains solid. The personal savings rate is climbing as excess savings accumulated during COVID have dissipated.



Source: J.P. Morgan Guide to the Markets, 4Q2024

# CIO Update

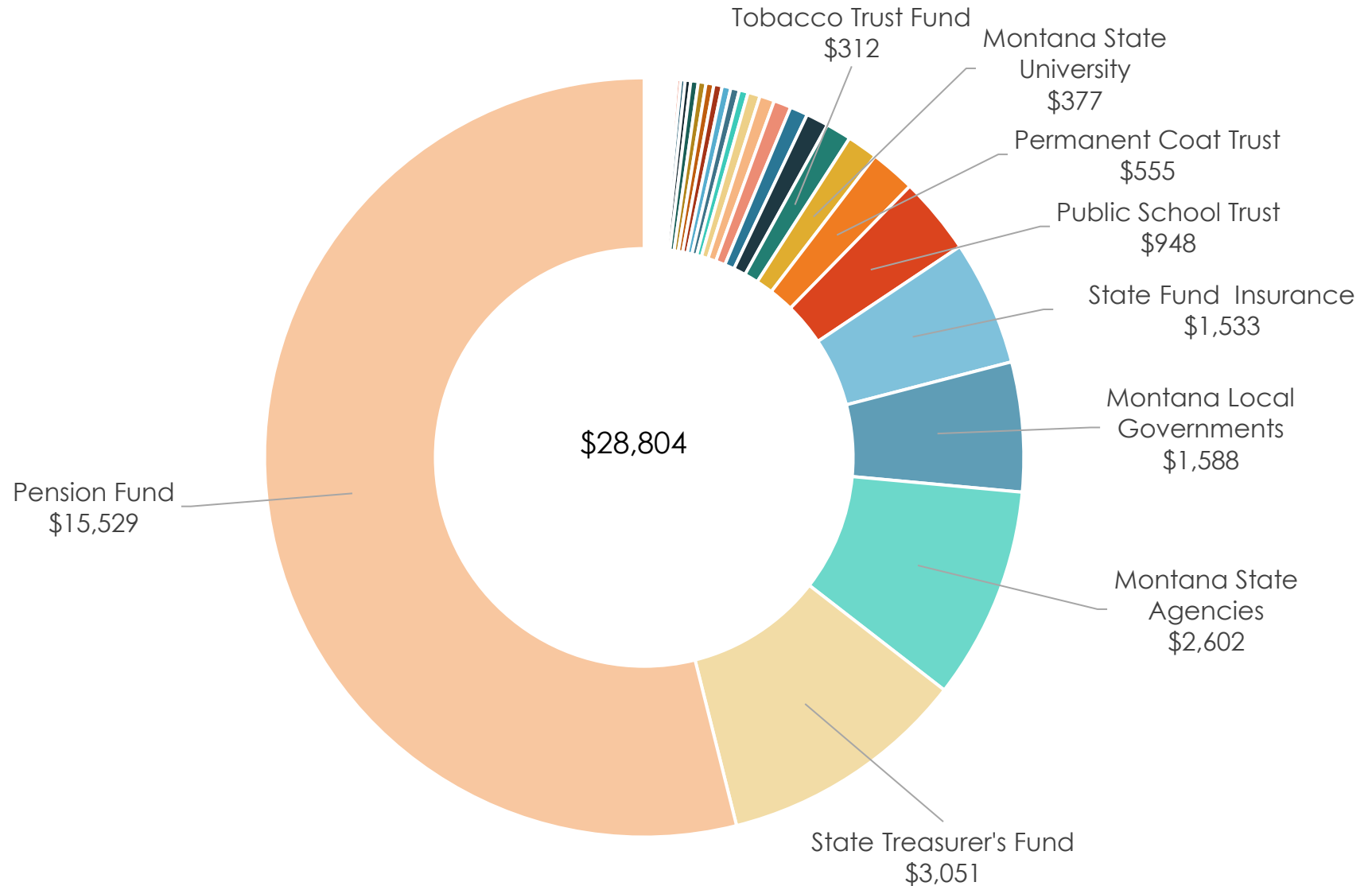
## AUM by Asset Class



\* Dollar values are in \$1,000,000  
September 30, 2024

# CIO Update

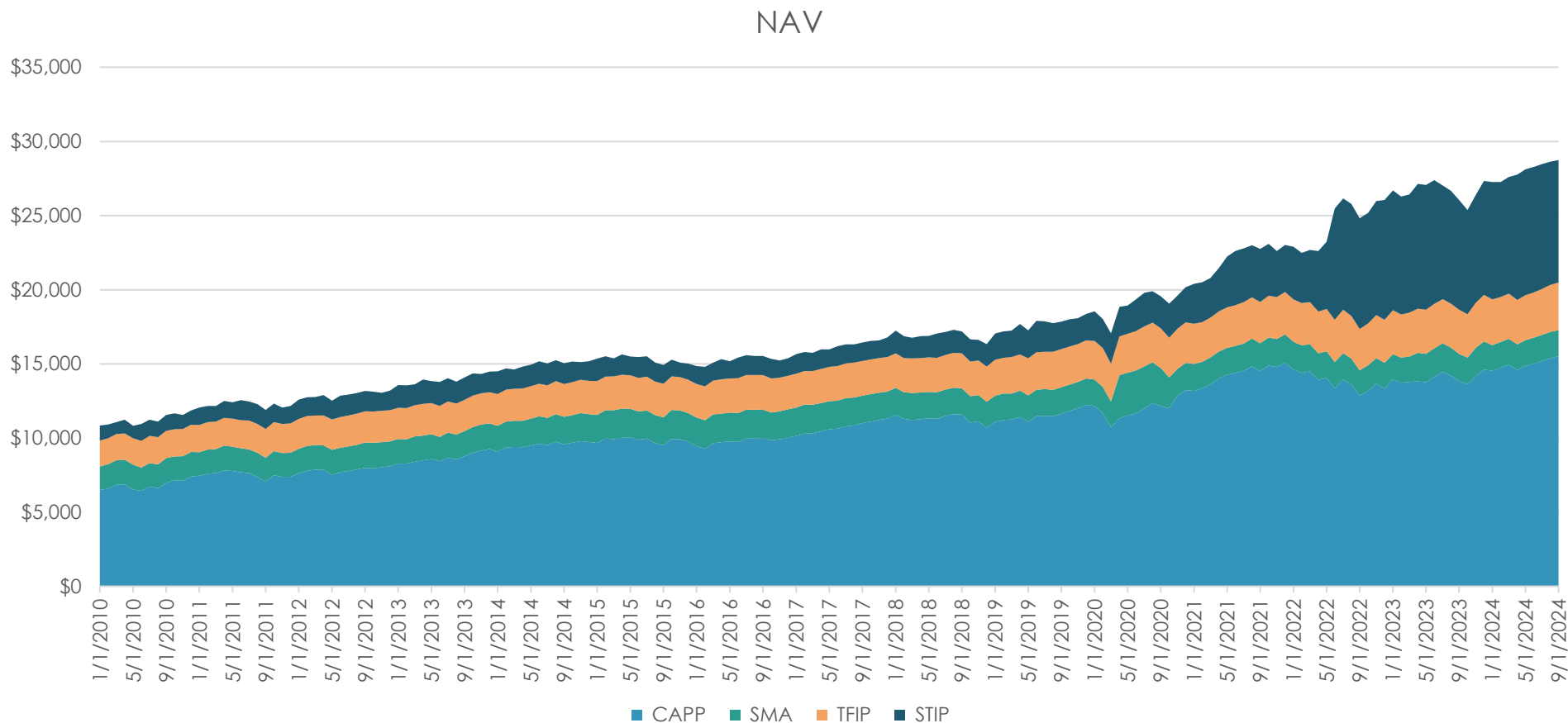
## AUM by Participant Type



\* Dollar values are in \$1,000,000  
September 30, 2024

# CIO Update

## AUM by Pool



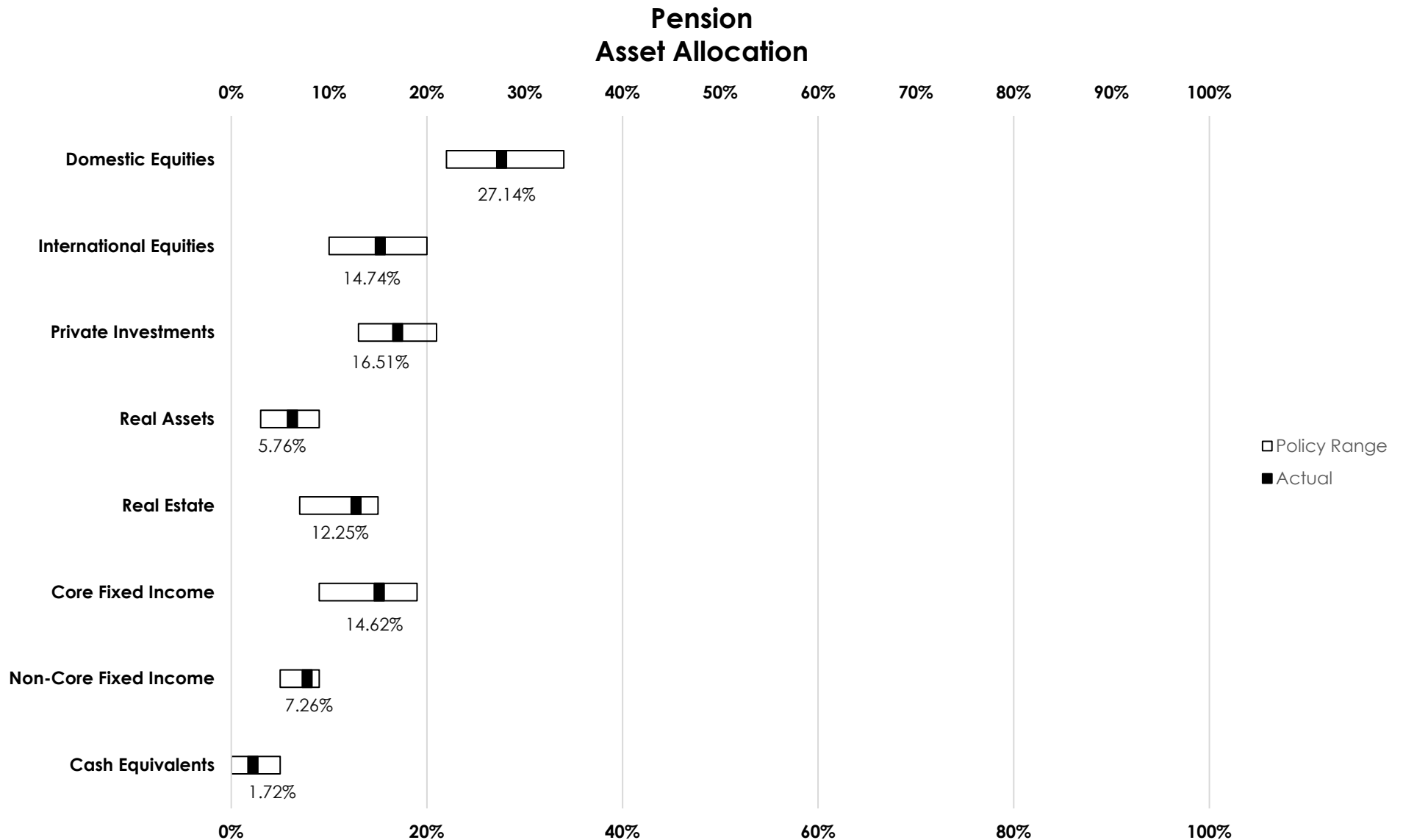
\* Dollar values are in \$1,000,000

September 30, 2024



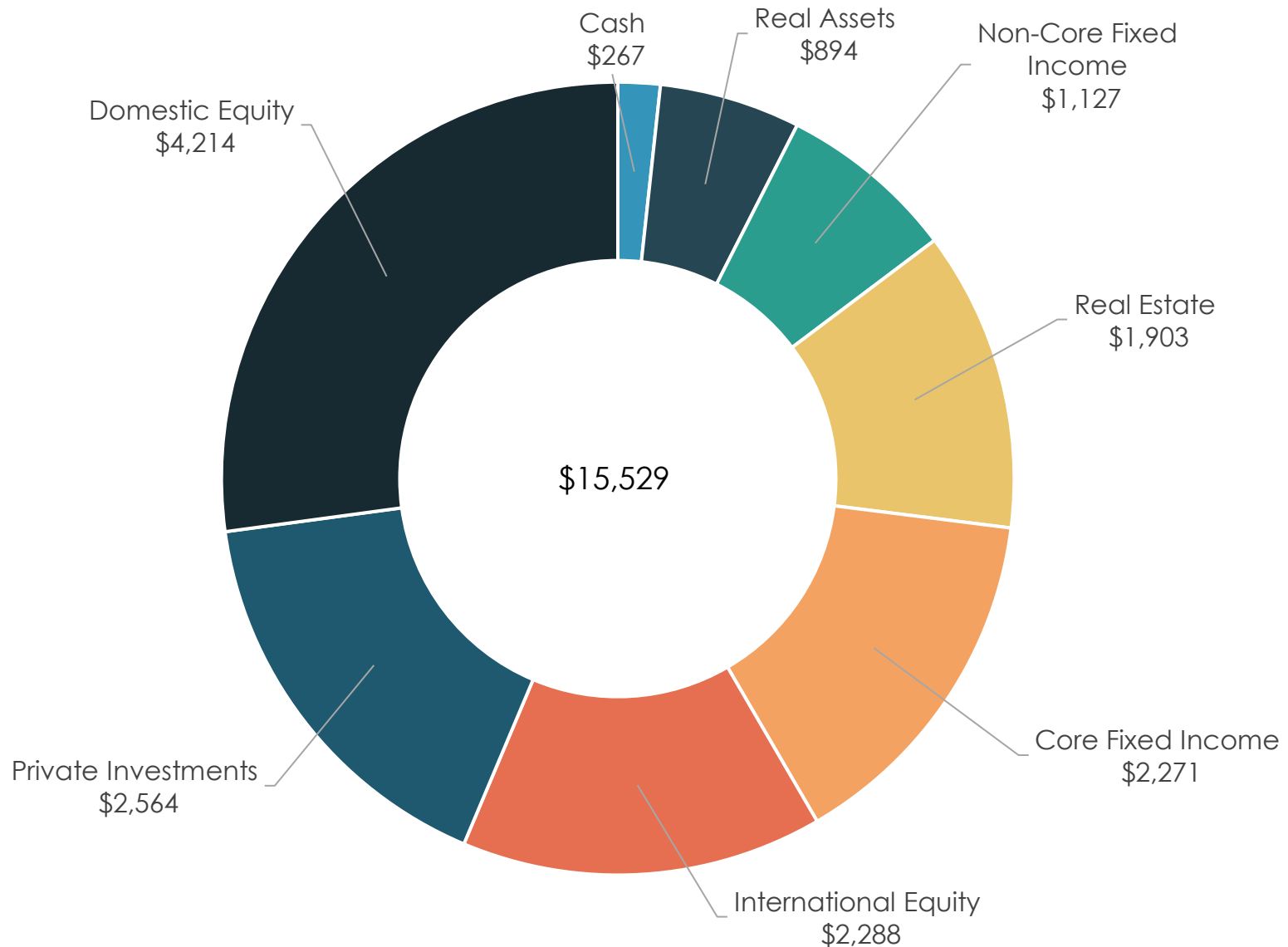
# CIO Update

## Pension Asset Allocation



# CIO Update

## Pension Asset Allocation

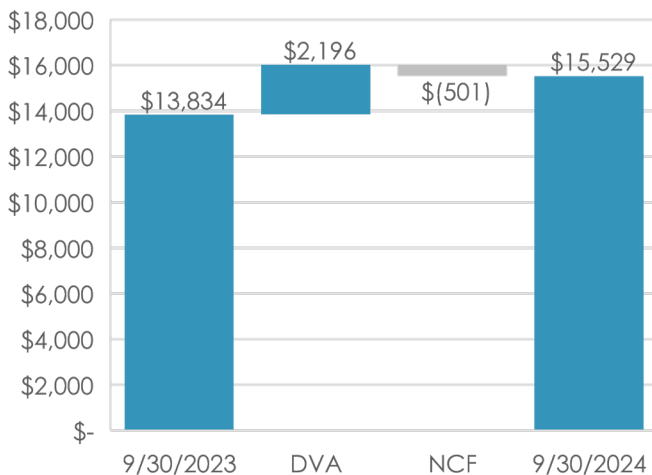


\* Dollar values are in \$1,000,000  
September 30, 2024

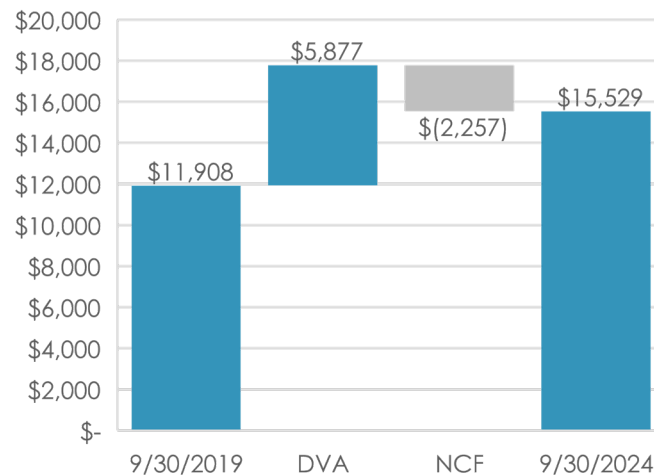
# CIO Update

## Pension Net Performance

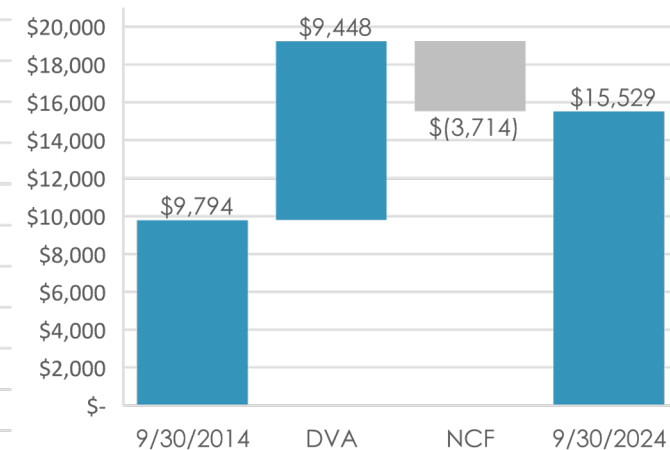
Asset Changes  
1 Year



Asset Changes  
5 Year



Asset Changes  
10 Year



- Dollar Value Added – The total dollar return of the portfolio including income and capital gains.
- Net Cash Flow - The total dollar amount distributed from portfolio assets to meet the deficit of contributions minus distributions.
  - A grey bar indicates an aggregate net outflow by all plans even though some plans may have experienced net inflows.
  - Though aggregates are shown, each plan is independent and not able to rely on other plans to meet their respective liabilities.

# CIO Update

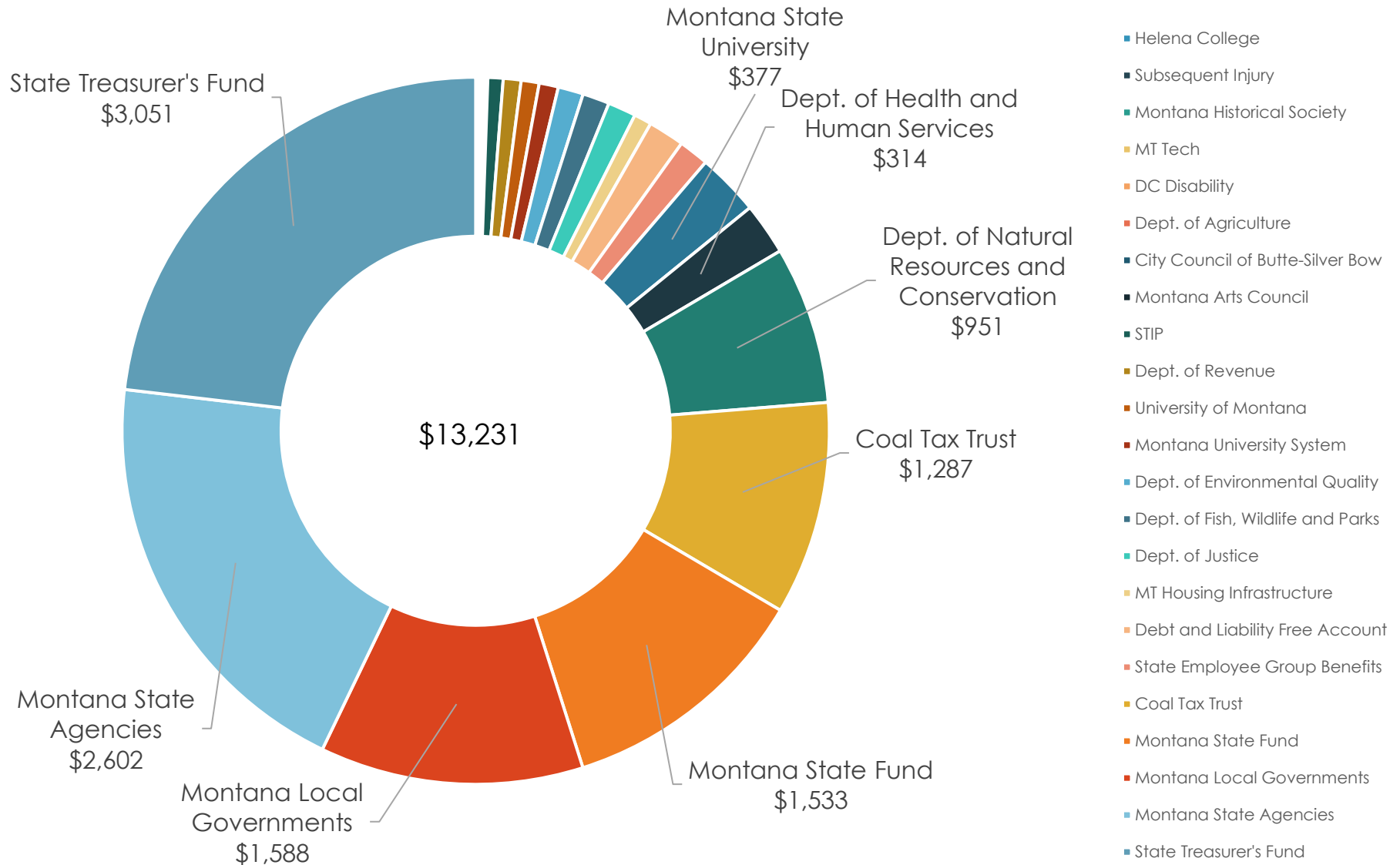
## Pension Net Performance

Performance	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	Since Inception
Public Employees' Retirement	4.41%	16.08%	5.31%	8.97%	7.89%	7.43%	7.84%
Police Officers' Retirement	4.41%	16.12%	5.32%	8.98%	7.90%	7.40%	7.73%
Game Wardens' Retirement	4.41%	16.08%	5.30%	8.96%	7.89%	7.39%	7.76%
Sheriffs' Retirement	4.41%	16.07%	5.30%	8.97%	7.89%	7.42%	7.75%
Judges' Retirement	4.42%	16.09%	5.30%	8.98%	7.90%	7.43%	7.76%
Highway Patrol Retirement	4.41%	16.07%	5.30%	8.97%	7.89%	7.44%	7.75%
Teachers' Retirement	4.42%	16.08%	5.29%	8.96%	7.89%	7.43%	7.85%
Vol Firefighters' Retirement	4.42%	16.10%	5.30%	8.97%	7.88%	7.41%	7.59%
Firefighters' Retirement	4.41%	16.11%	5.32%	8.97%	7.90%	7.42%	7.72%

Inception 7/1/1994

# CIO Update

## AUM ex. CAPP

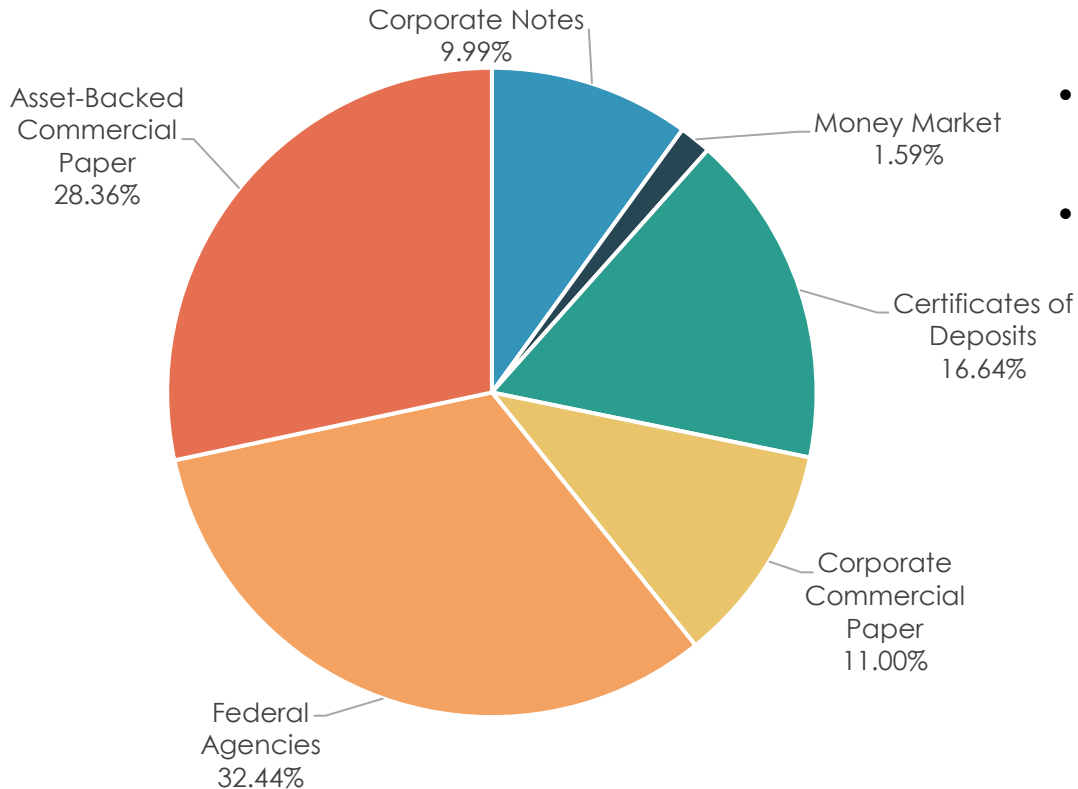


\* Dollar values are in \$1,000,000  
September 30, 2024

# CIO Update

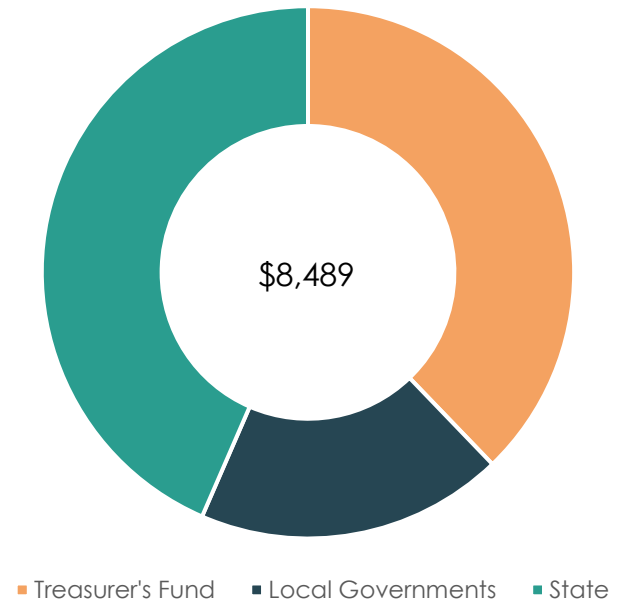
## Short Term Investment Pool

STIP Sectors



- The weighted average maturity of the portfolio was 54 days at quarter end.
- The STIP Reserve was \$92M at quarter end.

STIP Clients



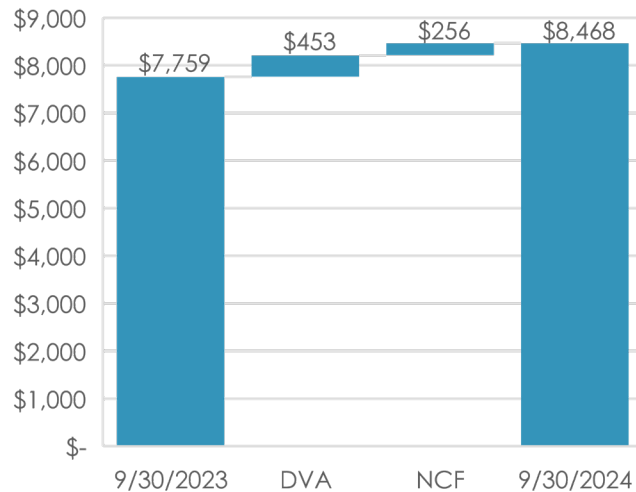
\* Dollar values are in \$1,000,000  
September 30, 2024

# CIO Update

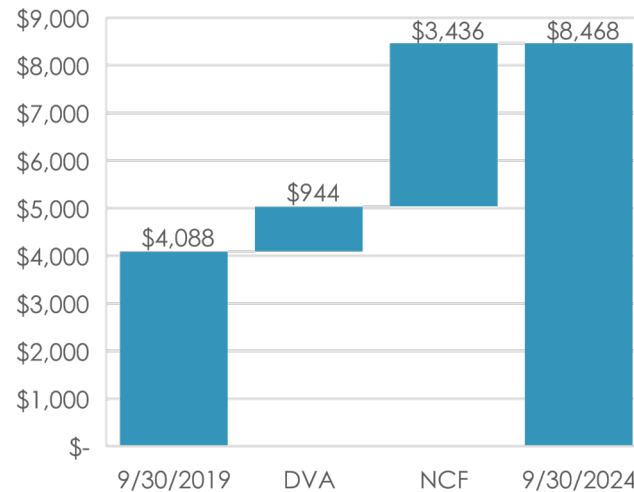
## Short Term Investment Pool

### STIP Net Performance

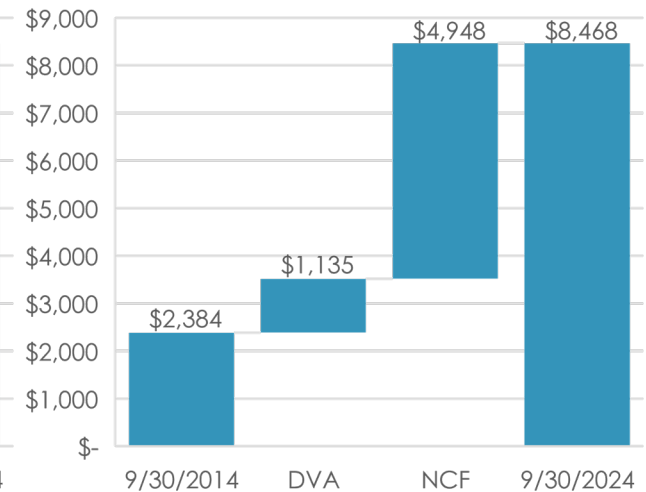
Asset Changes  
1 Year



Asset Changes  
5 Year



Asset Changes  
10 Year



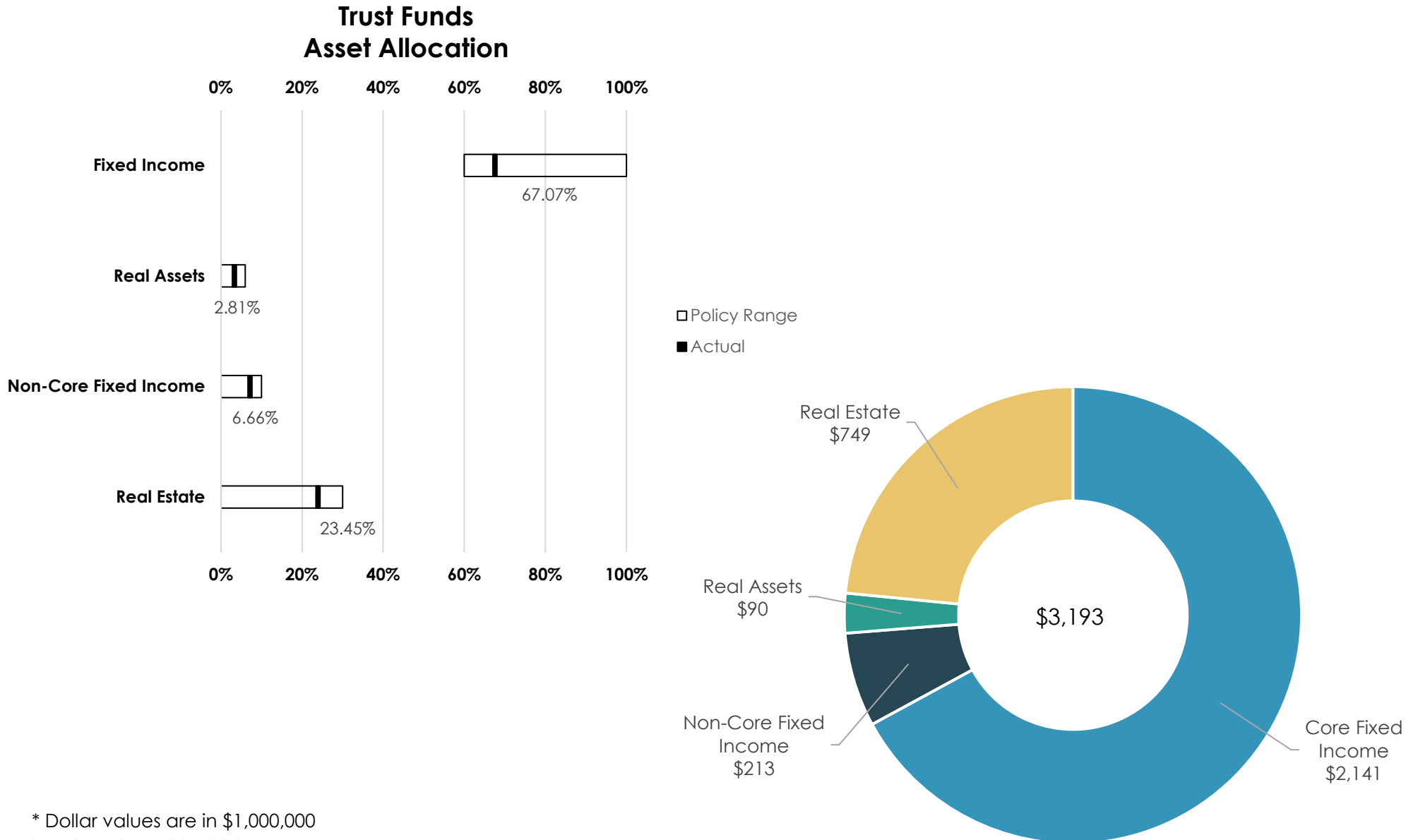
Performance	FYTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Short Term Investment Pool (STIP)	1.33%	5.51%	3.63%	2.42%	1.78%	2.45%
Short Term Investment Pool Benchmark	1.36%	5.64%	3.71%	2.37%	1.74%	2.39%

\* Dollar values are in \$1,000,000

September 30, 2024

# CIO Update

## Trust Funds Investment Pool



\* Dollar values are in \$1,000,000

September 30, 2024

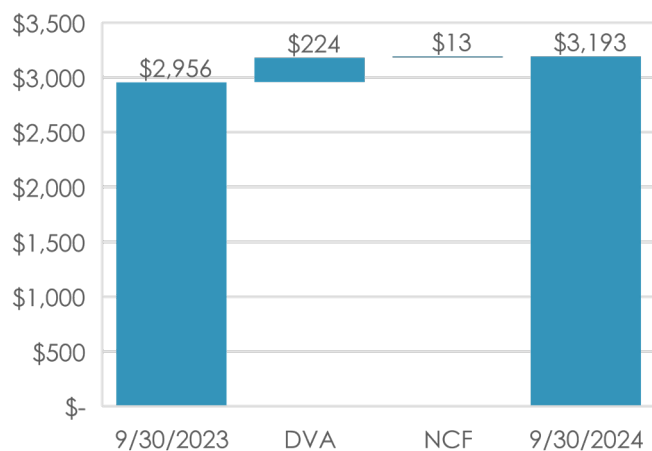


# CIO Update

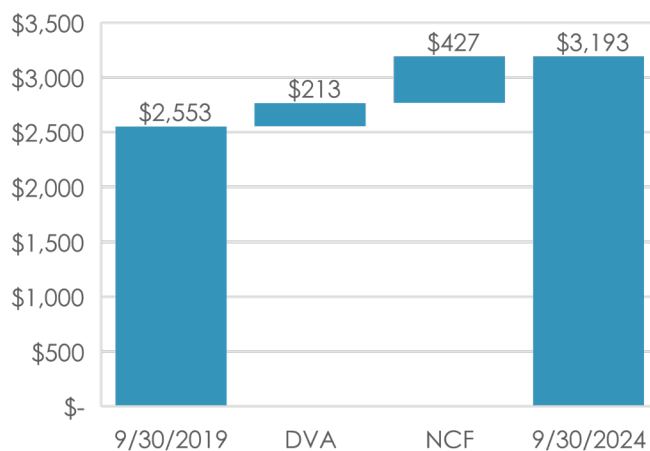
## Trust Funds Investment Pool

### TFIP Net Performance

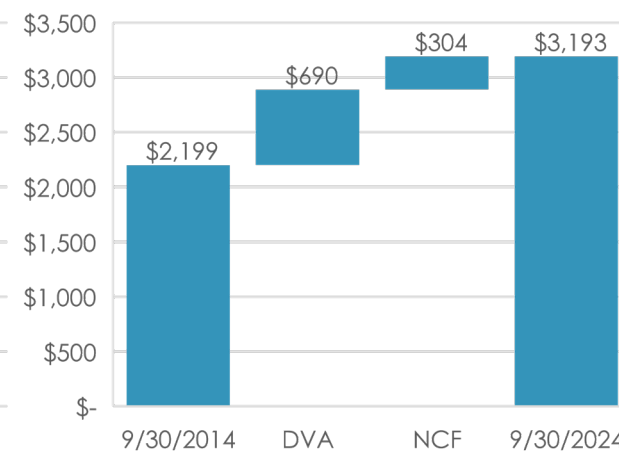
Asset Changes  
1 Year



Asset Changes  
5 Year



Asset Changes  
10 Year



Performance	FYTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Trust Funds Investment Pool (TFIP)	3.86%	7.52%	-0.08%	1.52%	2.81%	5.33%
Trust Funds Investment Pool Benchmark	3.86%	6.65%	-0.18%	1.23%	2.30%	4.53%

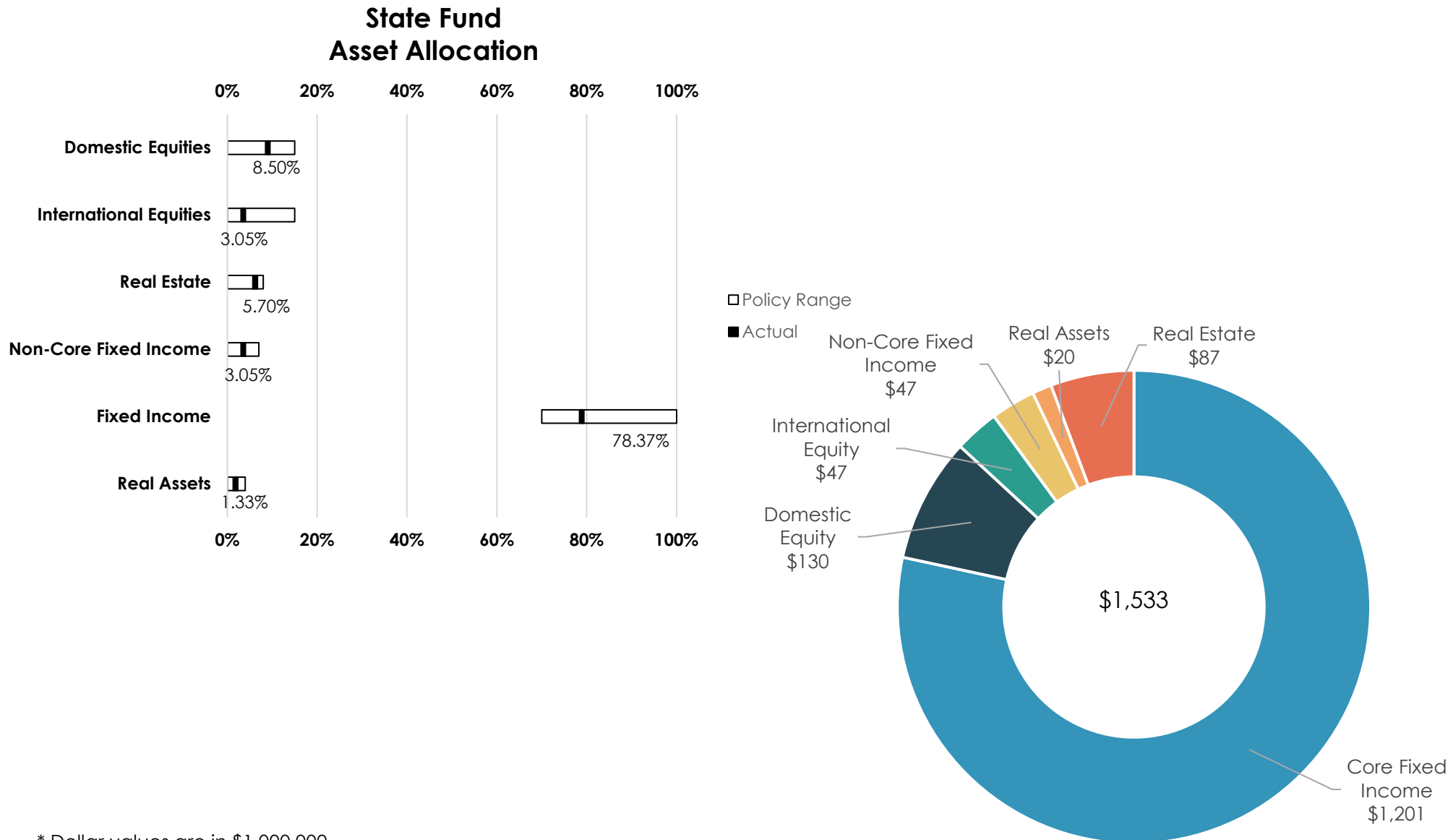
Yield	1 Year	3 Year	5 Year	10 Year
Trust Funds Investment Pool (TFIP)	3.88%	3.58%	3.36%	3.38%

\* Dollar values are in \$1,000,000

September 30, 2024

# CIO Update

## State Fund Investment Pool



\* Dollar values are in \$1,000,000

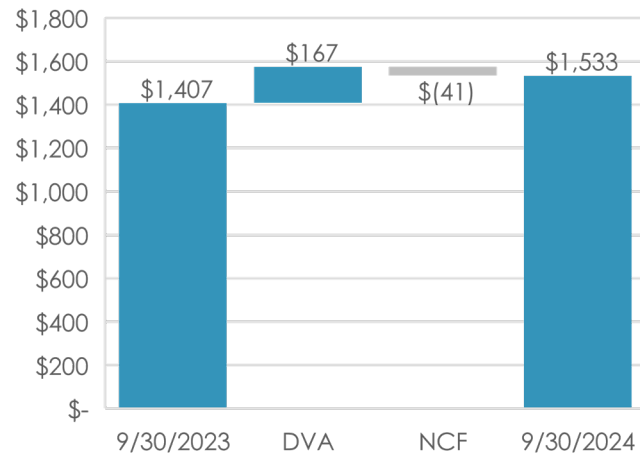
September 30, 2024

# CIO Update

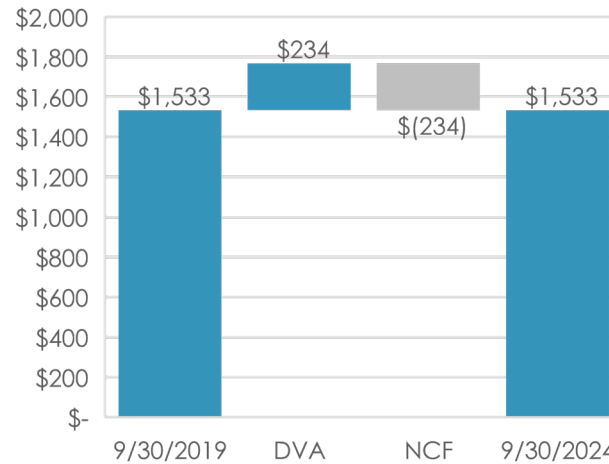
## State Fund Investment Pool

### SFIP Net Performance

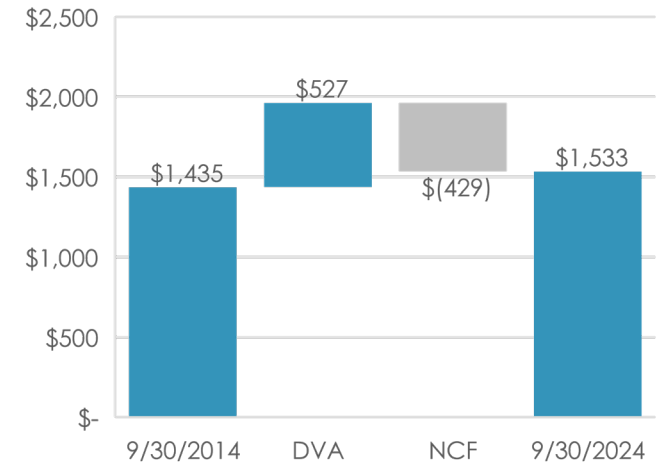
Asset Changes  
1 Year



Asset Changes  
5 Year



Asset Changes  
10 Year



Performance	FYTD	1 Year	3 Year	5 Year	10 Year	Since Inception
State Fund	4.77%	12.33%	1.70%	3.18%	3.62%	5.20%
State Fund Benchmark	4.99%	12.69%	1.18%	2.74%	3.28%	4.68%

\* Dollar values are in \$1,000,000

September 30, 2024

# CIO Update

- The Federal Reserve cut rates 50 bps in Sept. Subsequent economic data has been better than expected. Potential volatility ahead.
- Our co-investment program has called down capital for its first two commitments.
- Continuing our review of the due diligence process and documentation within the asset class procedure manuals.
- Enhancing the security of our information technology platform.
- Working with analyst staff to assign select projects across asset classes as appropriate and where employees have interest.
- Interviewing for Fixed Income Analyst position. Posted investment and accounting intern positions for summer 2025.
- Kirsten passed the Chartered Alternative Investment Analyst (CAIA) Level I exam.

# Macro Attribution

## Key Takeaways – 3 Year

### **Strategic Asset Allocation** - *What was the performance of our midpoint weighted benchmark portfolio?*

- Most benchmarks made positive contributions to the pension, policy-neutral, 5.2% return.

### **Tactical Asset Allocation** - *Did the actual asset class weights add additional return over the midpoint weighted benchmark portfolio?*

- About \$555M of equity asset classes were sold and \$53M of fixed income/cash asset classes were bought during the last year. The pension net cash need was \$-501M for the year.
- In aggregate, the overweighting/underweighting of the asset classes relative to their benchmarks decreased the pension portfolio's return by 20 bps with the underweight to Domestic Equity providing most of underperformance.

### **Style Selection** - *Did the portfolio benchmarks add additional return over their asset class benchmarks?*

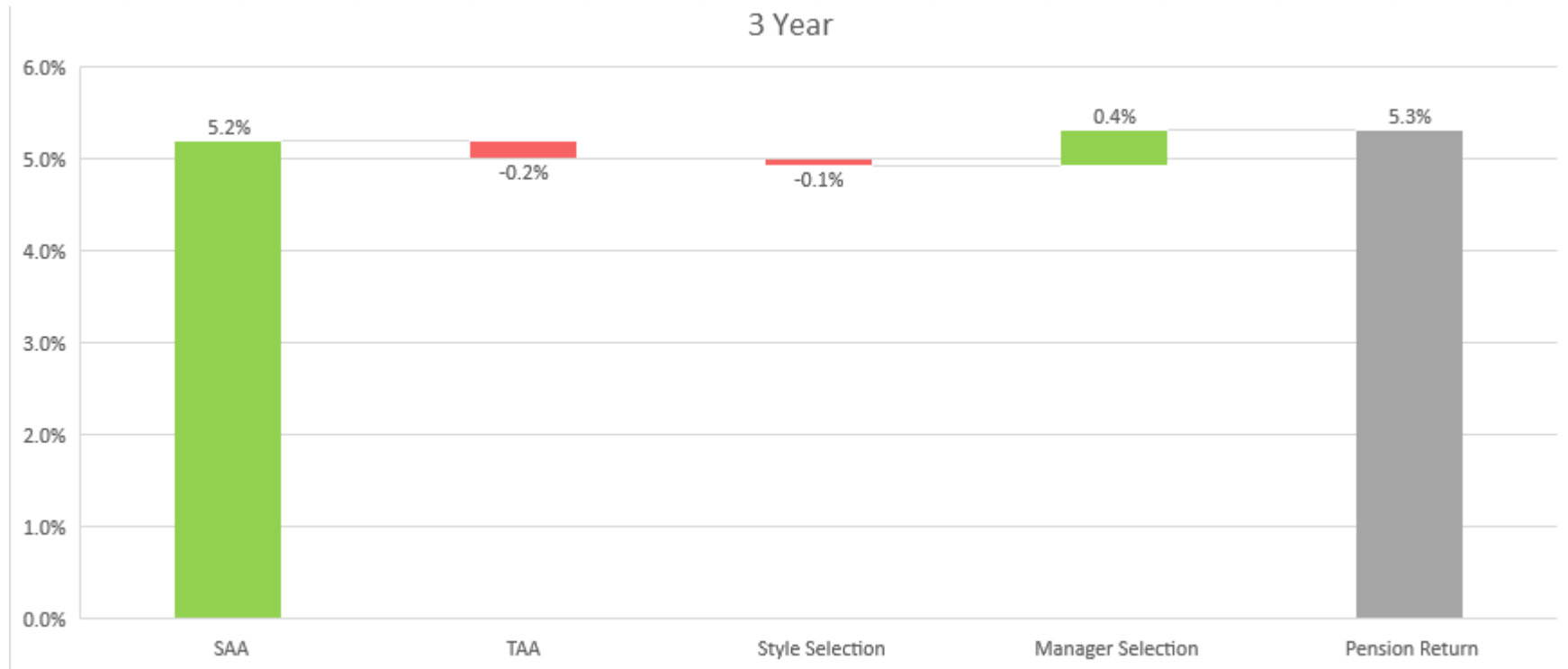
- The International Equity manager benchmarks had higher exposure to growth benchmarks than the asset class benchmark leading to total style underperformance of 7 bps.
- The Real Assets portfolio has about 51% exposure to commodities versus 33% in the custom benchmark (through May 2024). The strong outperformance of the Commodity Producers and Infrastructure indexes relative to TIPS resulted in style outperformance of about 20 bps.
- In Real Estate, exposure to a CMBS index and a REIT index were the primary contributor to style underperformance of 9 bps.
- Within Non-Core Fixed Income, exposure to preferred & EMD indexes led to style underperformance of 6 bps.

### **Manager Selection** - *Did the portfolio managers add additional return over their portfolio benchmarks?*

- In International Equity, a growth manager was the primary contributor of manager selection underperformance of 6 bps.
- Our internal Core Fixed Income portfolio added 7 bps to manager selection outperformance.
- Private Investments and Real Assets no longer show significant manager selection outperformance for this 3-year period. This is due to the exceptionally well performing private asset class period of Q3 2021 dropping off and the addition of the poor performing private asset class period of Q3 2024 relative to their benchmarks.
- The Private Real Estate Portfolio and CMBS Manager added positive effects totaling 37 bps.

*Note: The publicly traded benchmarks for private asset classes are an imperfect proxy for actual holdings due to the pricing of private assets lagging their publicly traded benchmarks.*

# Macro Attribution



Strategic Asset Allocation (SAA) - The return that would have been achieved if we had invested in our asset class benchmarks at the midpoint weights.

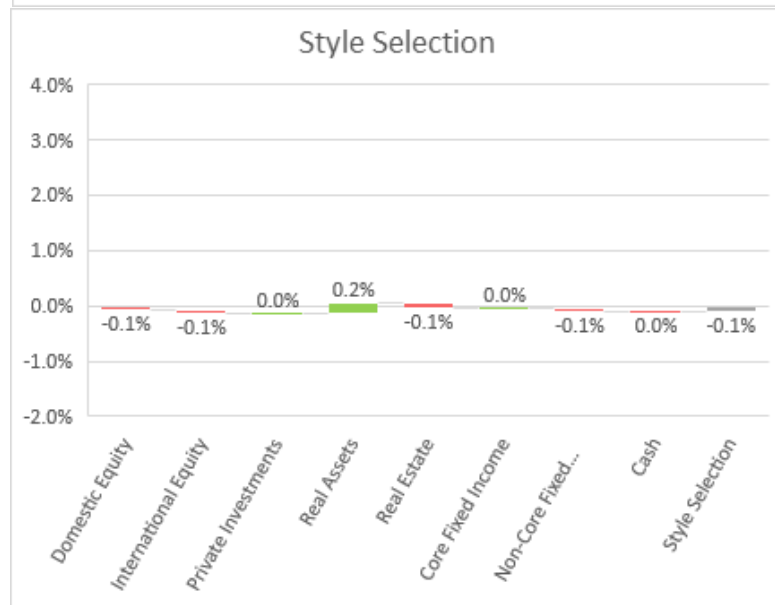
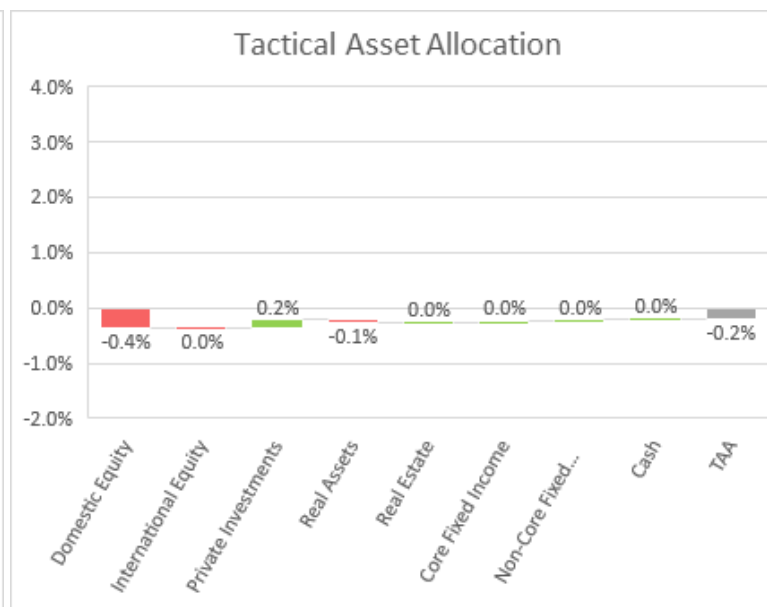
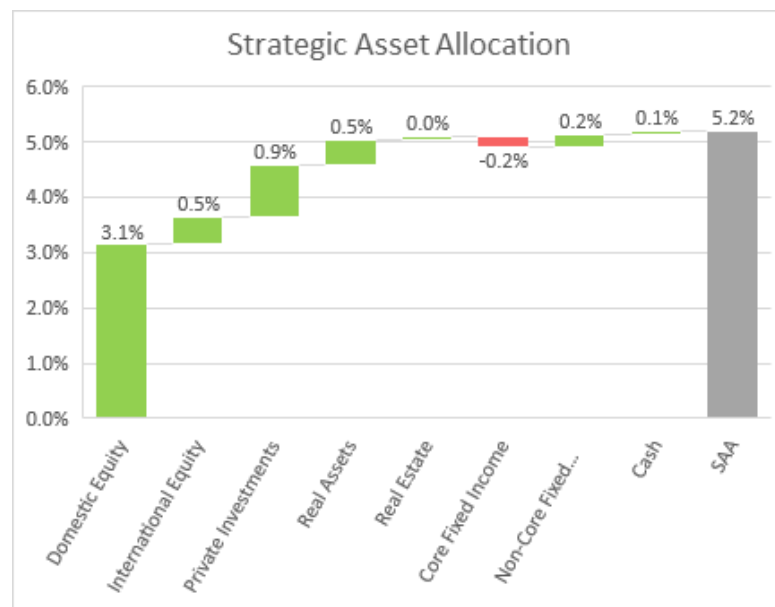
Tactical Asset Allocation (TAA) - The *additional* return earned by investing in the asset class benchmarks at our actual rather than midpoint weights.

Style Selection (SS) - The *additional* return earned by investing in the underlying manager benchmarks rather than the asset class benchmarks.

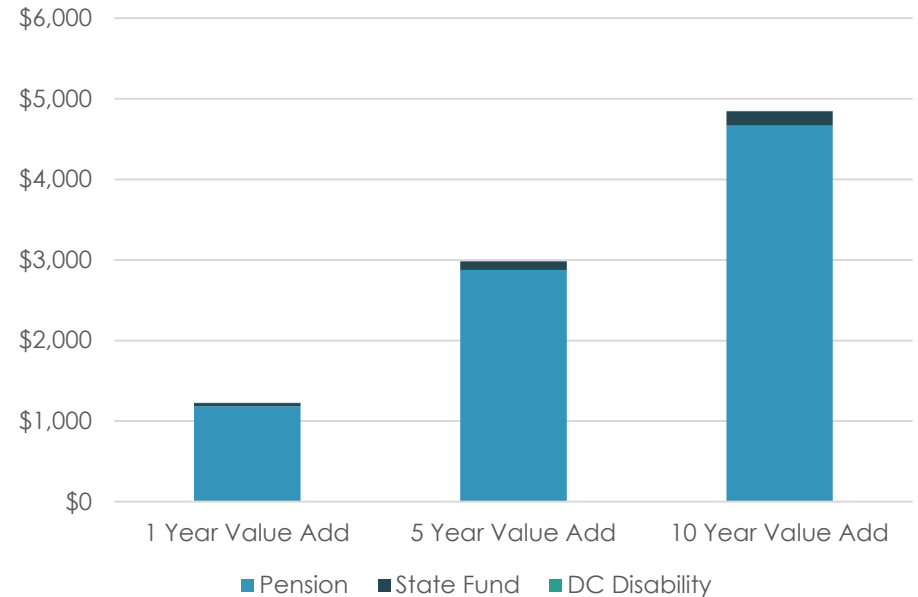
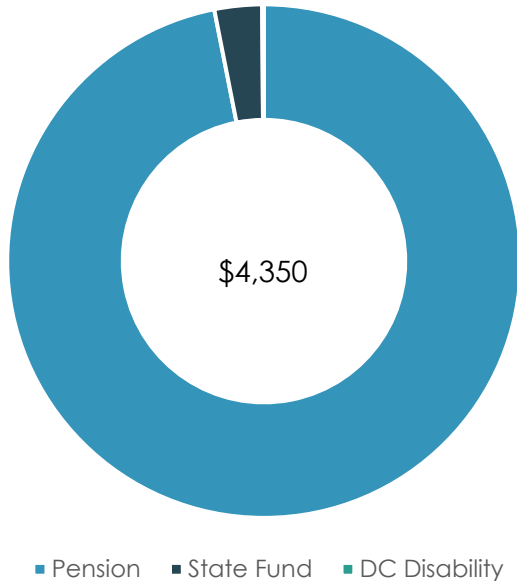
Manager Selection - The *additional* return earned by investing in the underlying managers rather than the underlying manager benchmarks.

\* The valuation lag observed in Private Equity, Real Estate, and Natural Resources are likely to lead to large differences in returns between these asset classes and their benchmarks in short-mid term time periods. The manager selection component is therefore likely to be large for these asset class in the short and medium term.

# Macro Attribution



# Domestic Equity Ownership Breakdown



Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	34.71%	35.31%	15.20%	15.44%	12.45%	13.01%
State Fund	36.33%	36.35%	15.95%	15.98%	13.37%	13.38%
DC Disability	35.30%	35.24%	15.19%	15.15%	NA	NA

- After an extended period of Mega Cap Growth dominance, 3Q24 saw a rotation into Small Caps and Value stocks.
- Despite the recent rotation, Mega Cap Growth was still the story over the last year. The Russell 1000 Growth index returned +42.2% over that period, as compared to the Russell 1000 Value return of 27.7%.

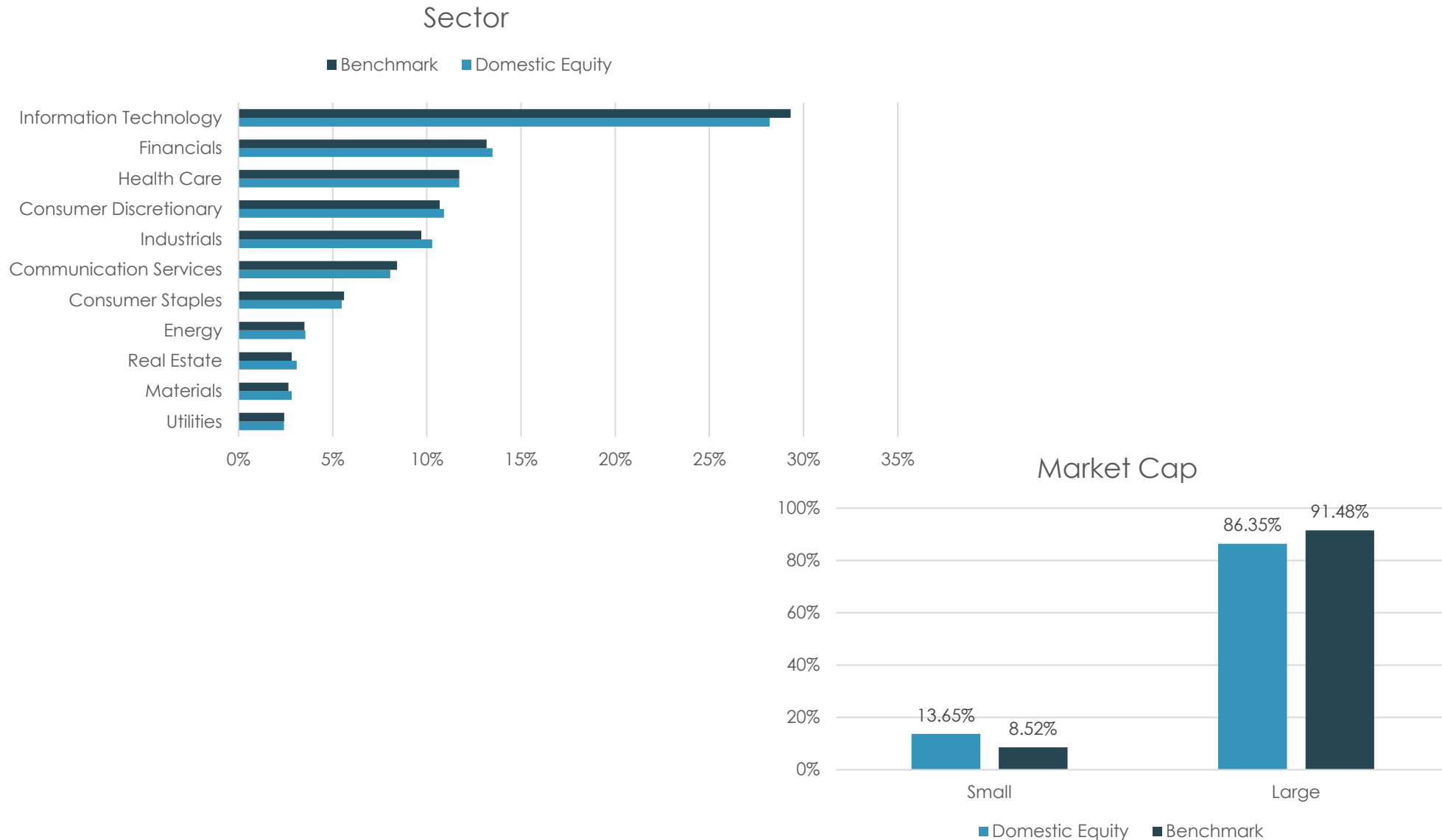
\* Dollar values are in \$1,000,000

September 30, 2024



# Domestic Equity

## Characteristics - Pension

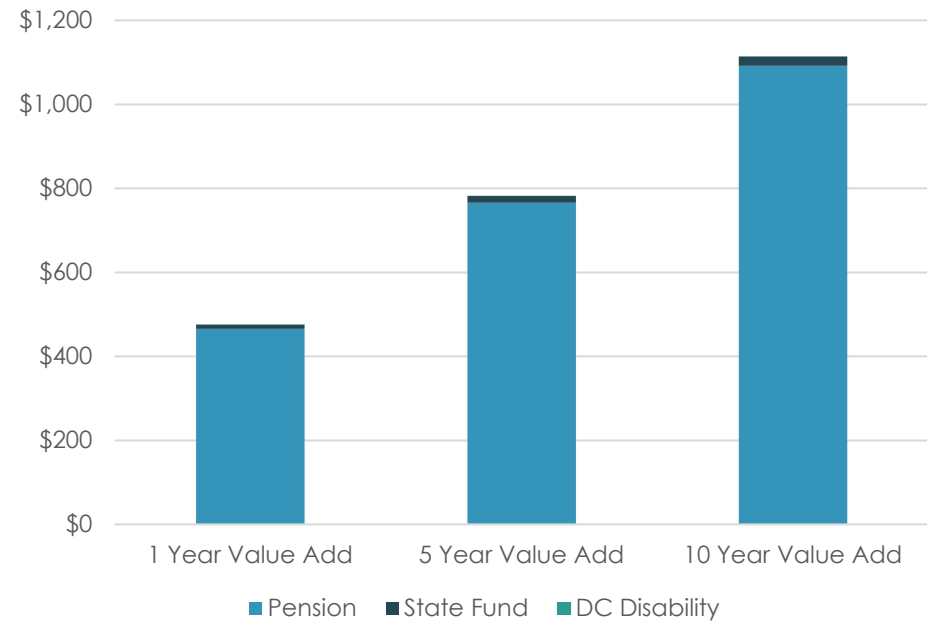
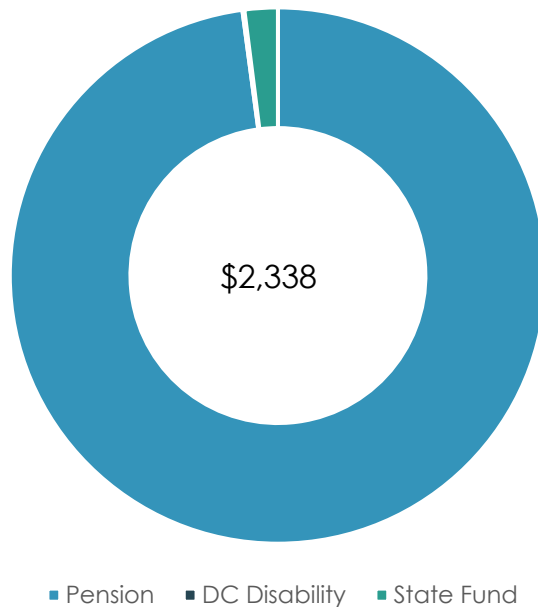


# Domestic Equity Valuation



- P/E multiples ticked up slightly in 3Q24, with the S&P forward P/E ratio ending the quarter at 21.5x. The average forward P/E for the S&P 500 since 1996 is 16.6x
- The Top 10 stocks in the S&P 500 trade at a forward P/E of 30.5x vs. 18.4x for the remaining stocks in the index. The concentration in the US stock market remained high, with the top 10 stocks in the S&P 500 comprising 36% of the index at the end of 3Q24.

# International Equity Ownership Breakdown



Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	24.84%	25.06%	7.47%	7.66%	5.52%	5.33%
State Fund	25.14%	25.35%	7.58%	7.59%	5.24%	5.22%
DC Disability	25.29%	25.35%	7.81%	7.59%	NA	NA

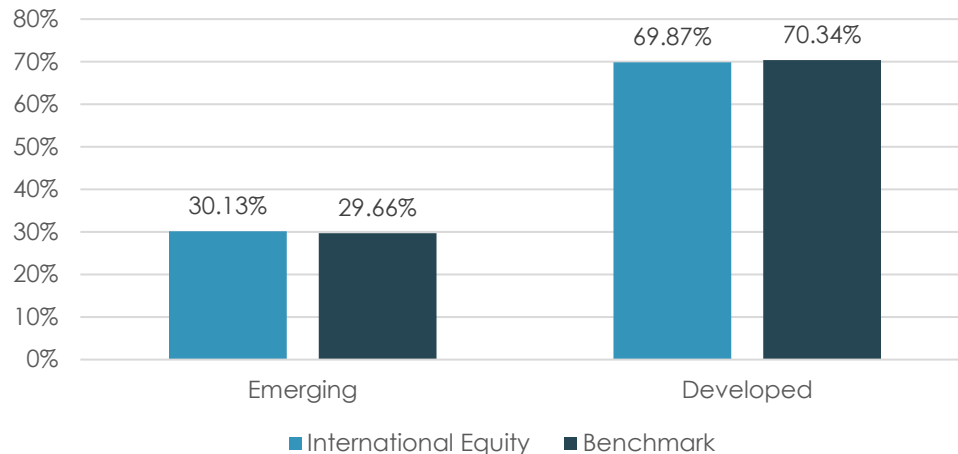
- The trend of International equities underperforming US stocks reversed in 3Q24, with the International Equity asset class benchmark outperforming the Domestic index by 2.0%.
- Emerging Markets stocks were boosted by a late-quarter rally in Chinese equities, fueled by optimism around potential additional stimulus from the Chinese government.
- A weaker US Dollar provided a slight tailwind to International stocks.

\* Dollar values are in \$1,000,000

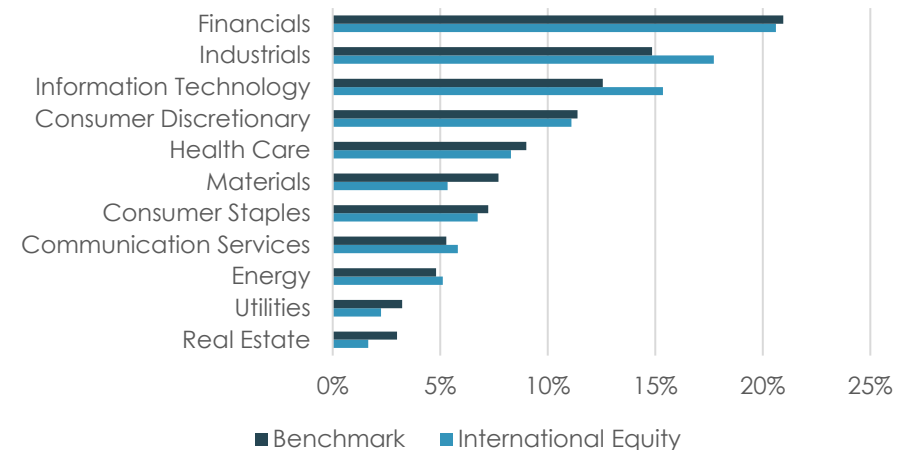
September 30, 2024

# International Equity Characteristics - Pension

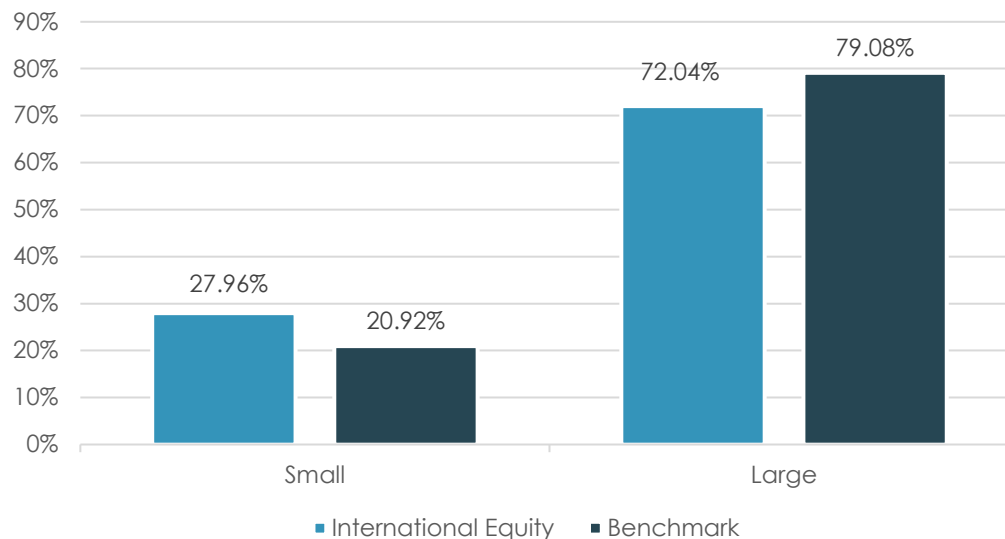
## Developed vs. Emerging Markets



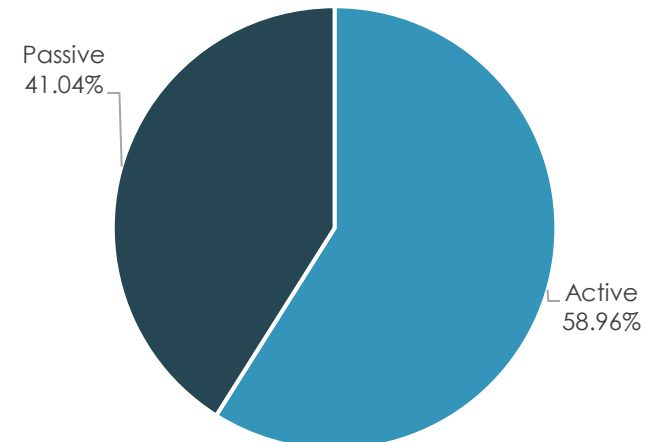
## Sector



## Market Cap



## Active vs. Passive

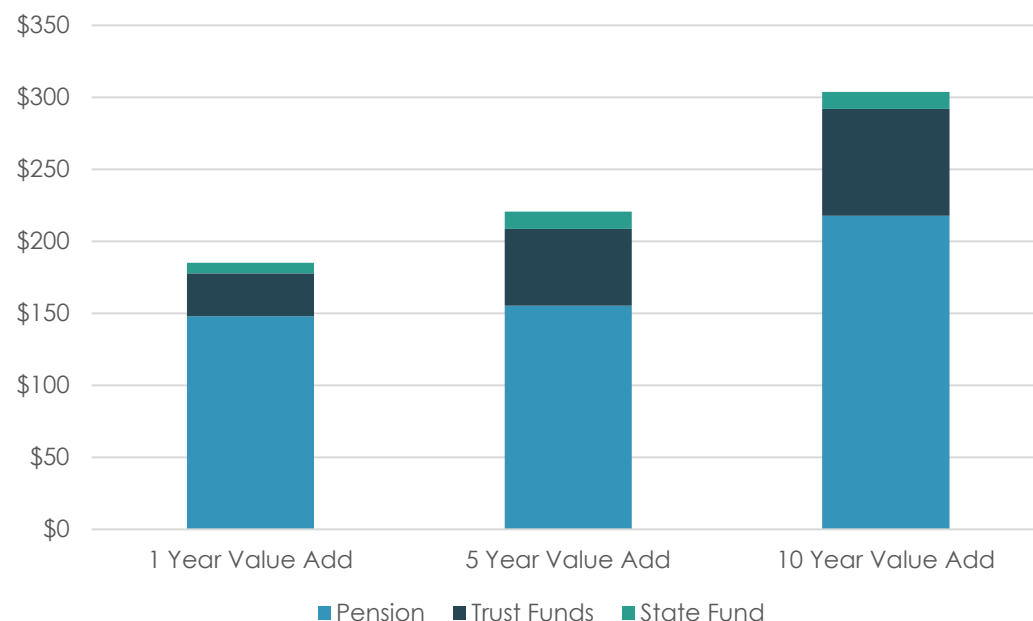
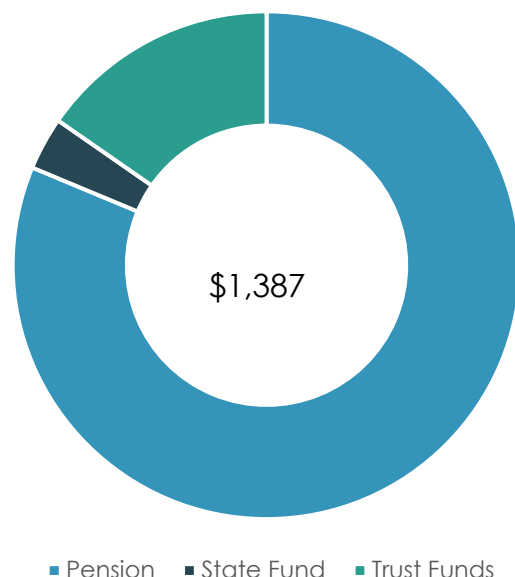


# International Equity Valuation



- The forward P/E for the MSCI ACWI ex-US Index was 13.8x at the end of 3Q24, up slightly from 13.5x at the end of 2Q24. The 20-year average for the index is 13.1x.
- Valuations for International equities remain at historically low levels vs. US stocks. The discount at the end of 3Q24 was -36%.

# Non-Core Fixed Income Ownership Breakdown



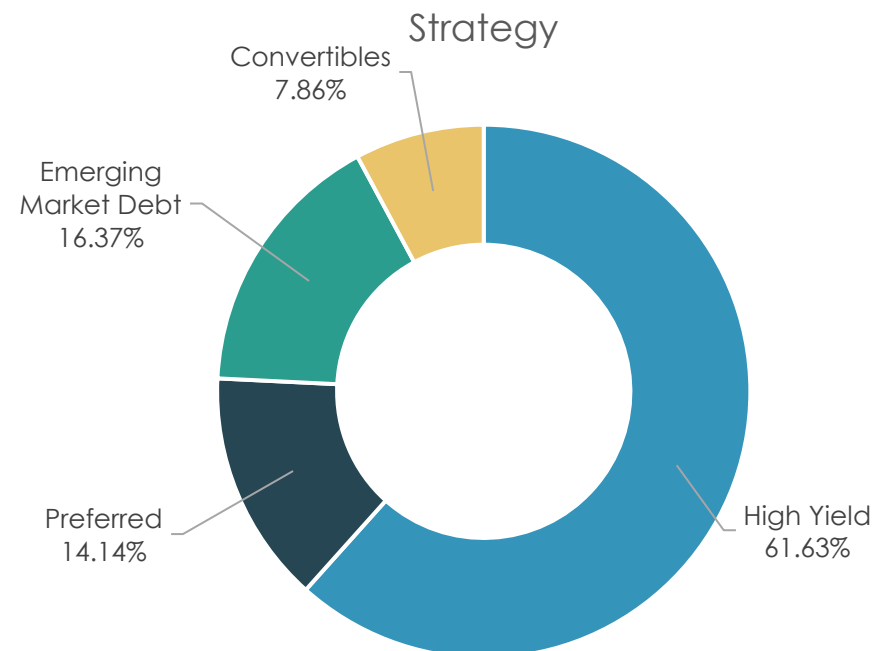
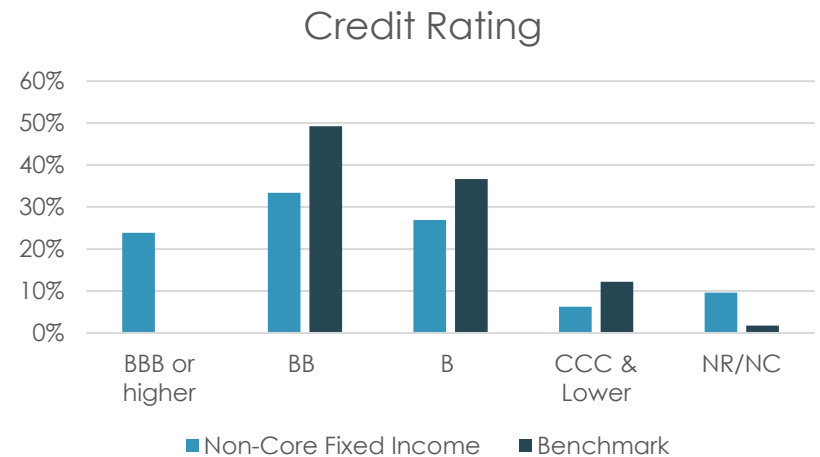
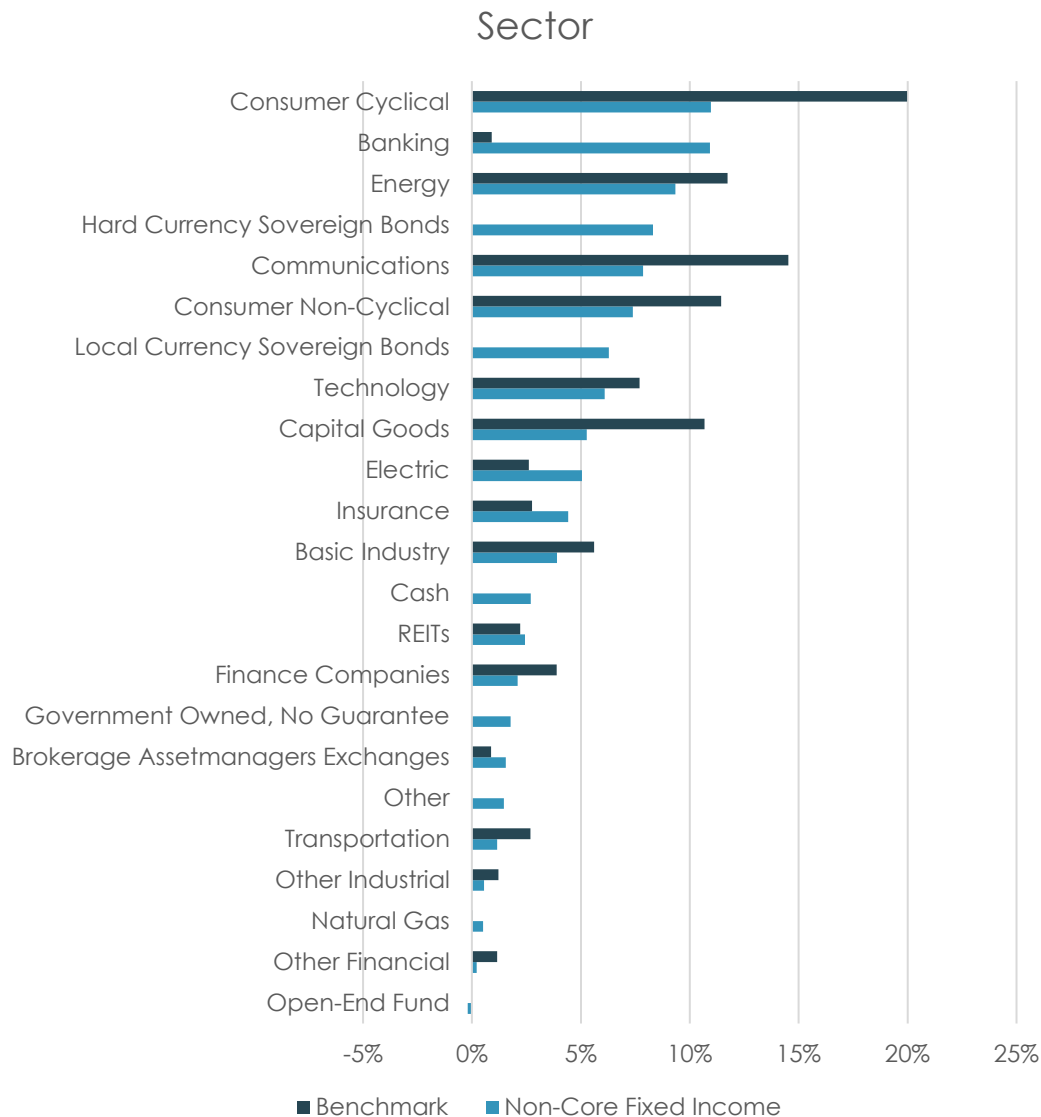
Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	15.20%	15.73%	3.55%	4.70%	4.13%	5.04%
State Fund	15.22%	15.73%	NA	NA	NA	NA
Trust Funds	14.72%	15.73%	4.69%	4.70%	4.40%	5.04%

- Market volatility didn't keep Non-Core Fixed Income from posting healthy returns in 3Q24. Over the last year, Preferred Securities and Emerging Market Debt were the top performers.
- The theme of low-quality credit outperforming continued in the quarter.
- Default rates remain low and the portion of the market trading at distressed levels is also at historically low levels.

\* Dollar values are in \$1,000,000

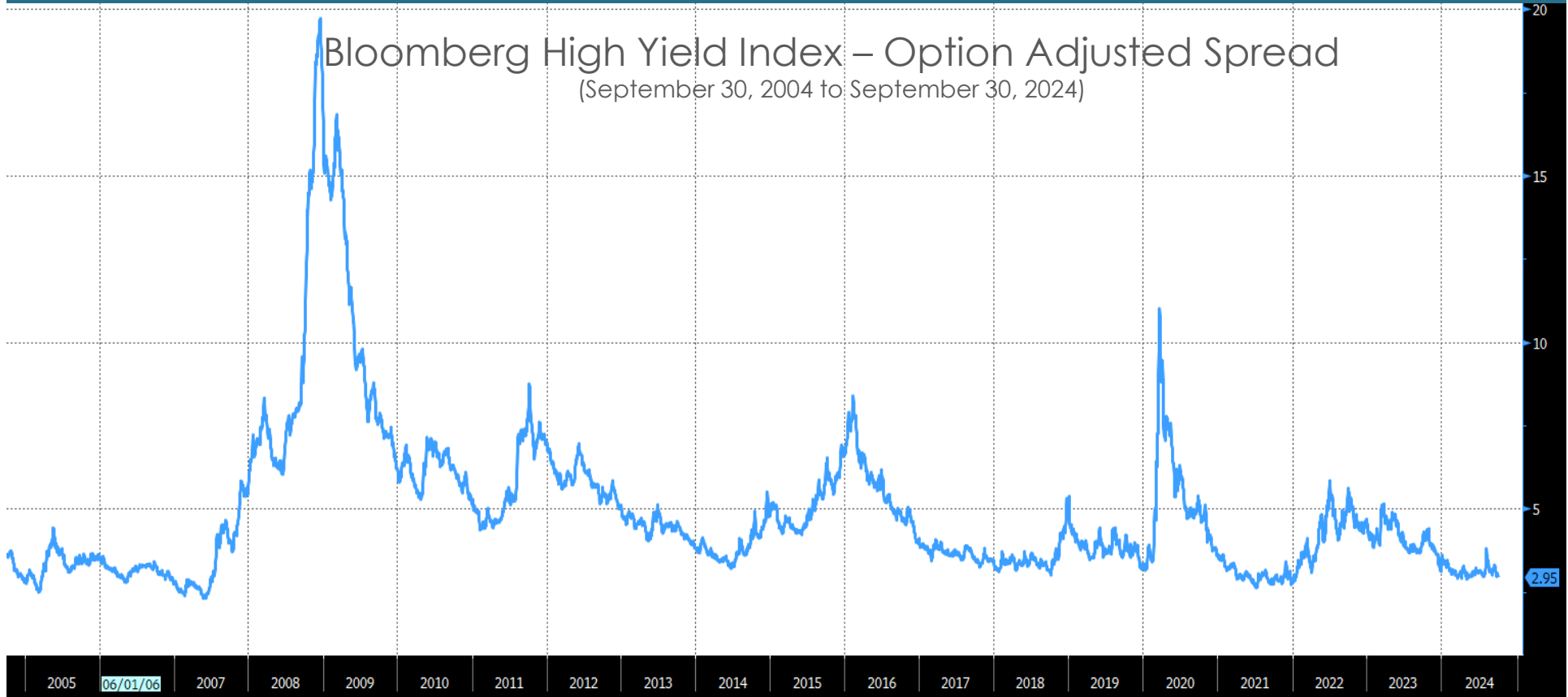
September 30, 2024

# Non-Core Fixed Income Characteristics



# Non-Core Fixed Income Valuation

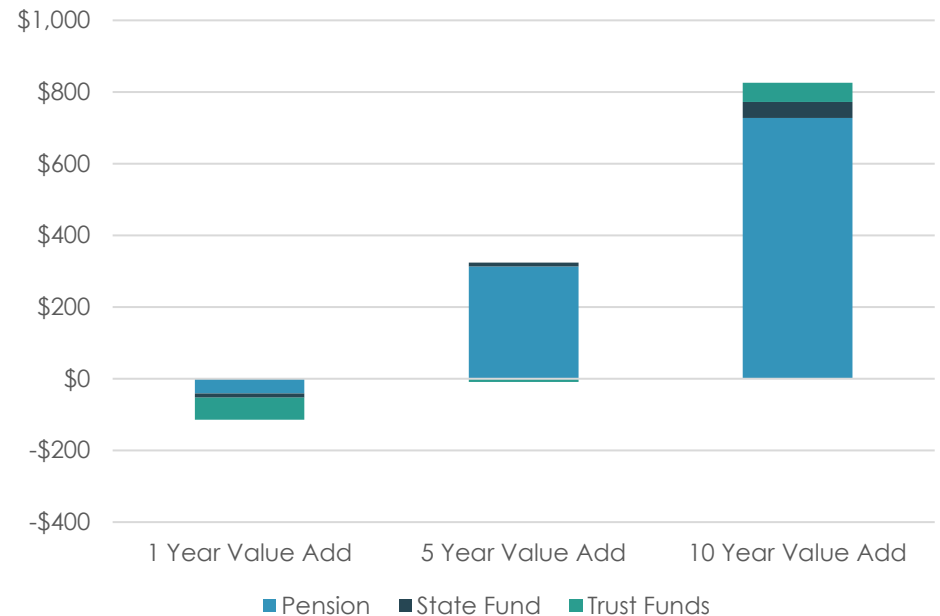
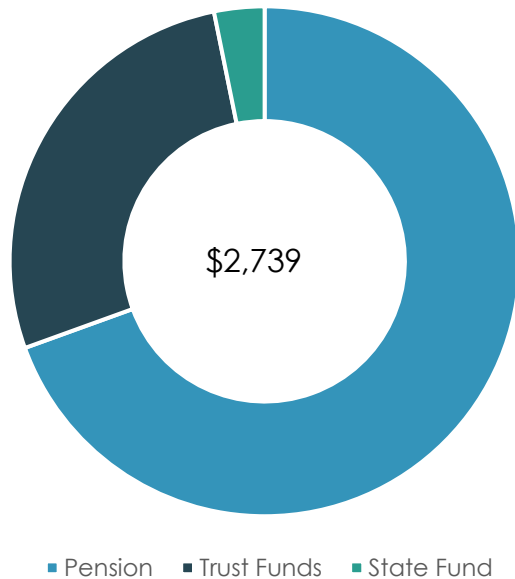
Bloomberg High Yield Index – Option Adjusted Spread  
(September 30, 2004 to September 30, 2024)



- Despite recent market volatility, High Yield spreads have traded in a relatively narrow range in 2024.
- After a spike in spreads in early August, spreads compressed and finished 3Q24 at their lowest levels of the year.
- With the tightening of High Yield spreads, yields have dropped, with the index yield ending 3Q24 at around 7.0%.



# Real Estate Ownership Breakdown



Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	-2.43%	-9.99%	4.57%	-2.58%	7.26%	3.72%
State Fund	-10.93%	-9.99%	1.89%	2.27%	4.74%	5.47%
Trust Funds	-6.22%	-9.99%	4.06%	2.27%	5.89%	5.47%

- Pricing dislocation narrowing, transaction volumes depressed, but picking up.
- Construction muted; lower supply growth expected to be a tailwind over the next few years.
- Fundamentals mixed depending on property type and market location.
- Debt markets open for the right property, underwriting standards remain tight.
- Refinancing needs being addressed partially through loan modifications/extensions, delinquencies on the rise.

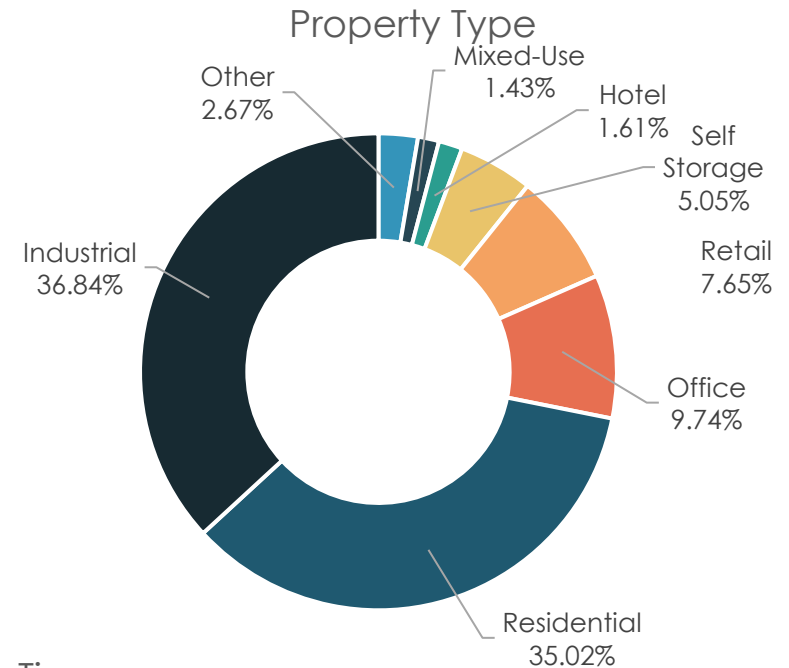
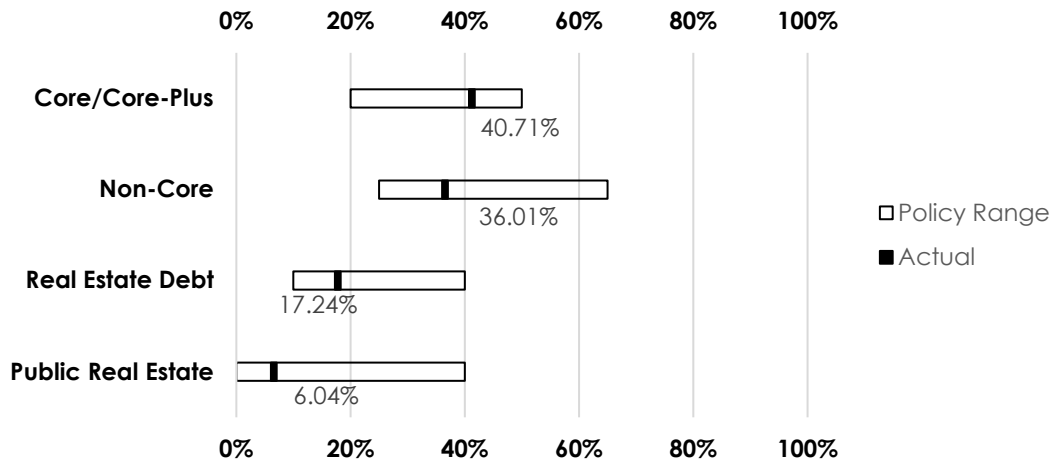
\* Dollar values are in \$1,000,000

September 30, 2024

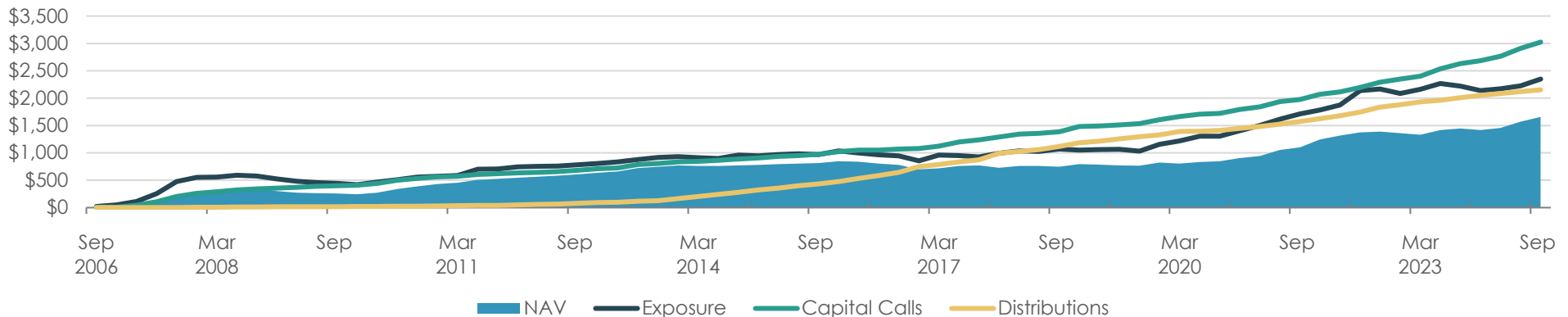
# Real Estate

## Characteristics - Pension

**Real Estate Asset Allocation**



**Private Real Estate Over Time**  
2006-2024



\* Dollar values are in \$1,000,000

September 30, 2024

# Real Estate Valuation

	Index	Change in Commercial Property Values		
	Value	Past Month	Past 12 Mos	Recent Peak
All Property	125.5	0.0%	-3%	-19%
Core Sector	125.9	0.0%	-3%	-21%
Apartment	152.3	0.0%	2%	-20%
Industrial	213.7	0.0%	-9%	-16%
Mall	85.3	0.0%	5%	-13%
Office	71.6	0.0%	-8%	-37%
Strip Retail	114.3	0.0%	3%	-13%
Health Care	123.6	0.0%	-5%	-18%
Lodging	103.0	0.0%	-4%	-9%
Manufactured Home Park	278.5	0.0%	-3%	-14%
Net Lease	94.3	0.0%	-3%	-19%
Self-Storage	246.8	0.0%	-8%	-21%

<sup>1</sup> Green Street Commercial Property Price Index® - October 4, 2024

- Pricing stabilization continues as witnessed during the most recent period, some uplift in the last 12 months, prices may be indicating we are close to the bottom and in some cases beyond.

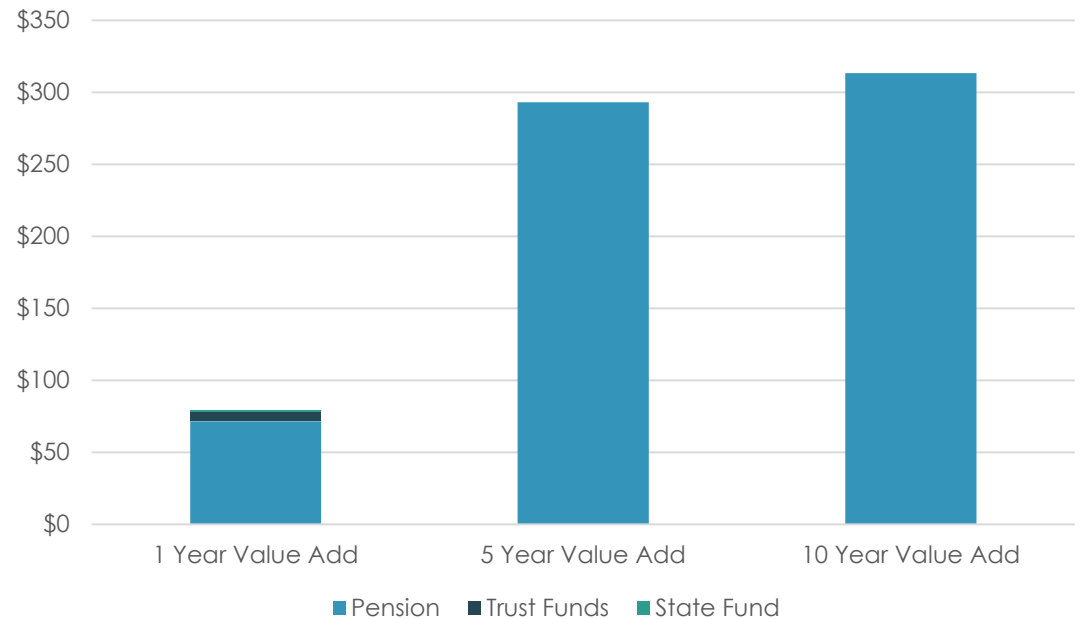
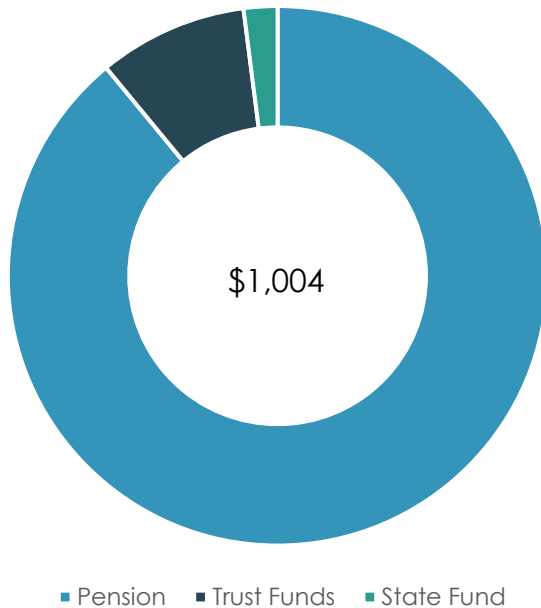
# Real Estate

## New Commitments FYTD

- Walton Street Real Estate Debt Core Fund, LP – \$100M (CAPP), \$50M (TFIP)
- **NewCold Fund III, LP - \$50M (CAPP)**

# Real Assets

## Ownership Breakdown



Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	8.44%	16.30%	6.96%	4.71%	NA	NA
Trust Funds	20.51%	18.97%	NA	NA	NA	NA
State Fund	NA	NA	NA	NA	NA	NA

- US oil production remains near all-time highs, OPEC+ maintains production cuts through Dec. '24.
- Overall construction spending was up in 2Q24, US housing starts remain sluggish.
- Lumber prices stabilizing, timber prices remain below 2022 highs.
- Aggregates volumes again experienced slight declines in 2Q24, more than offset by price increases.

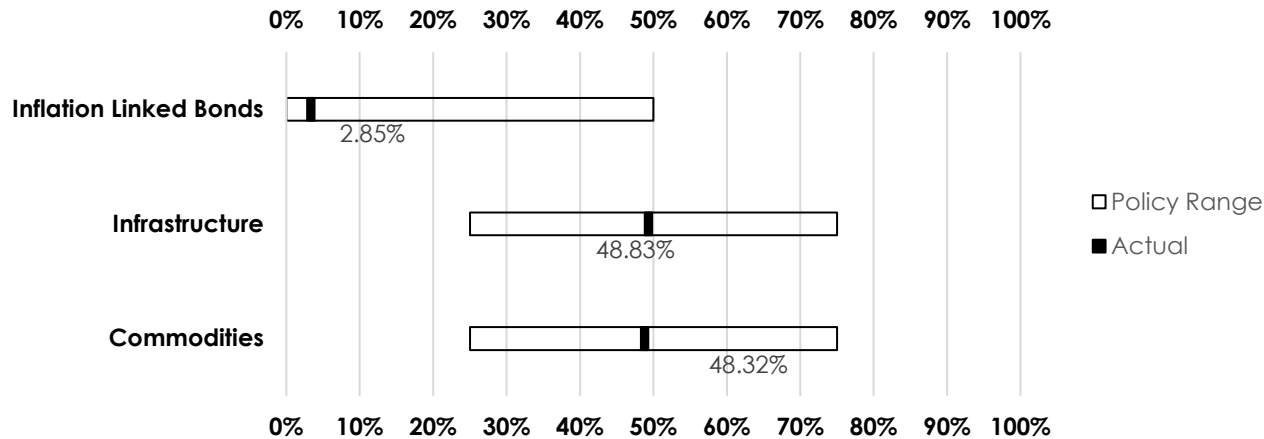
\* Dollar values are in \$1,000,000

September 30, 2024

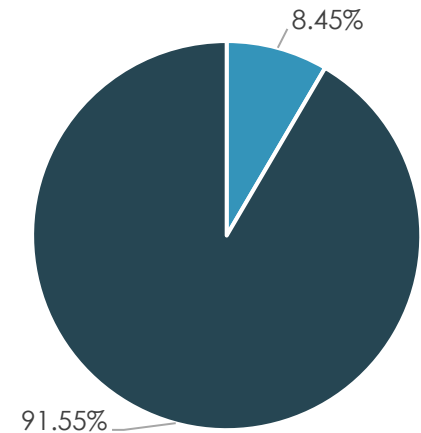
# Real Assets

## Characteristics - Pension

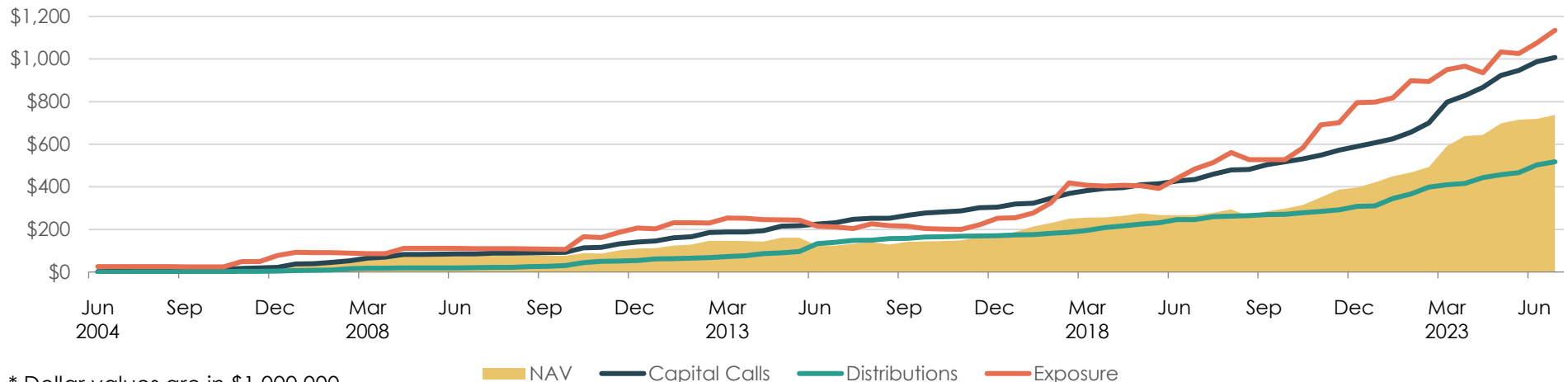
**Real Assets  
Asset Allocation**



**Domestic vs. International**



**Private Real Assets Over Time  
2004-2024**



\* Dollar values are in \$1,000,000

September 30, 2024

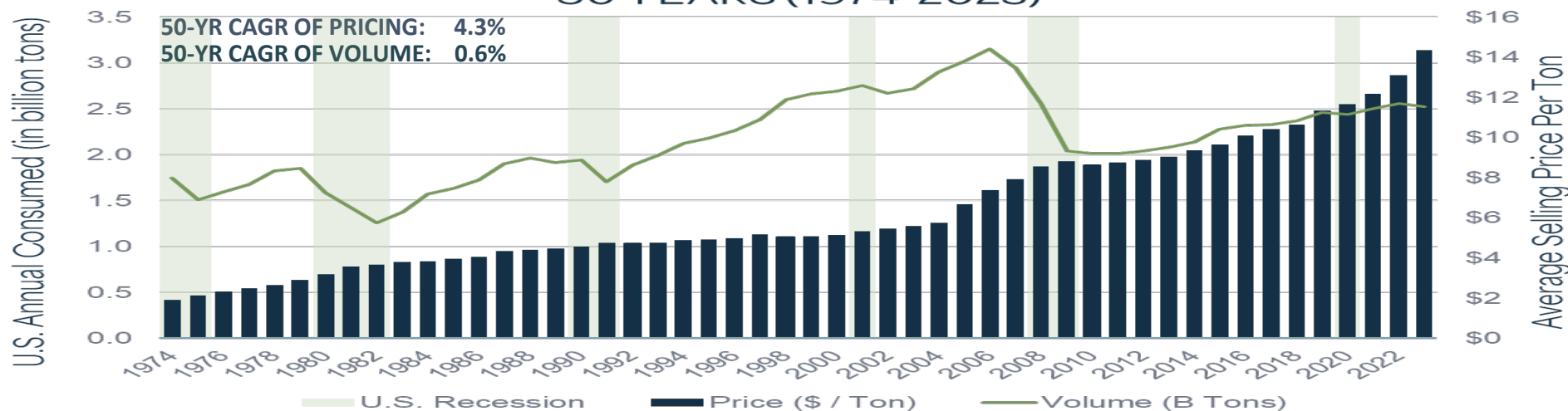
# Real Assets Valuation

Crude Oil (WTI) – Price per barrel  
(September 30, 2019 to September 30, 2024)



Source: Bloomberg

U.S. AGGREGATES PRICING & CONSUMPTION \*  
50 YEARS (1974-2023)



Source: USGS Survey historical volume and pricing data for crushed stone and sand and gravel

- OPEC+ maintains production cuts through Dec. '24. Oil has been range bound, though volatility remains high, uncertainty in the Middle East at an all-time high.
- US aggregates pricing and consumption trends continue their long-term upward trajectory.

September 30, 2024

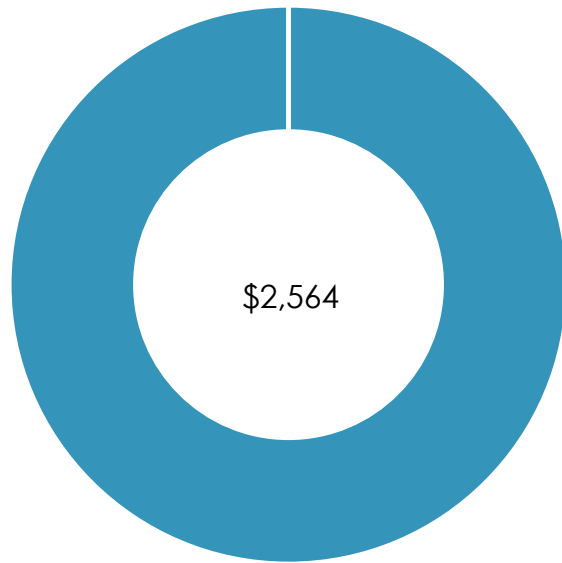
# Real Assets

## New Commitments FYTD

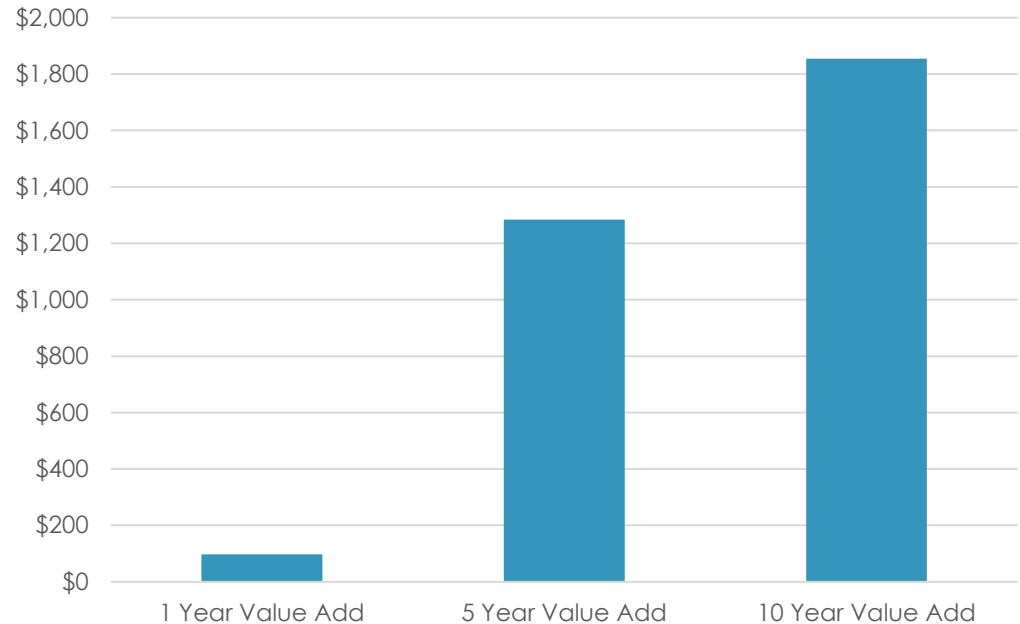
- **Ecosystem Investment Partners Fund V, LP - \$50M (CAPP)**



# Private Investments Ownership Breakdown



■ Pension



■ Pension

Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	4.13%	22.58%	13.25%	10.89%	11.75%	10.28%

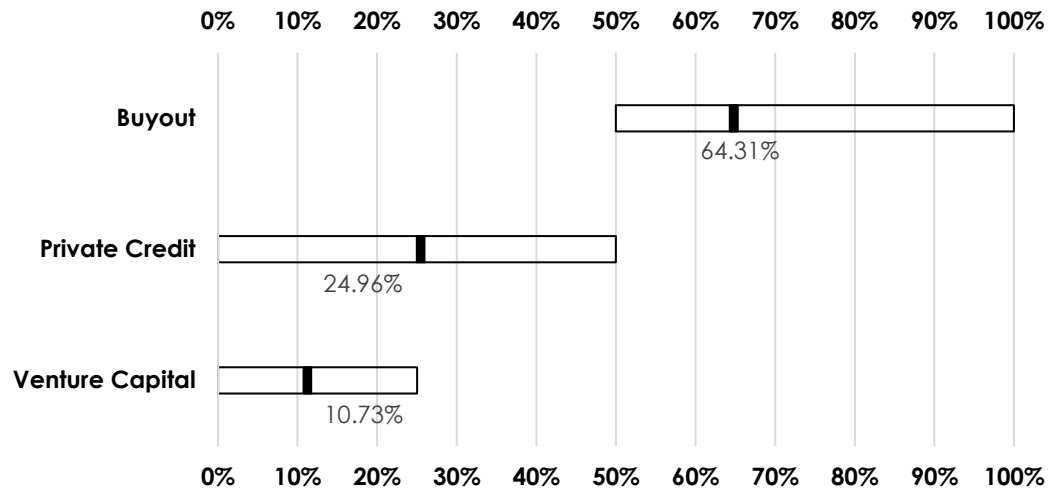
- Relative performance over 1 year has been within expectations, slightly improving from last quarter.
- Long-term performance over 5 years also improved marginally from last quarter and the program continues to outperform the benchmark over 10 years.

\* Dollar values are in \$1,000,000

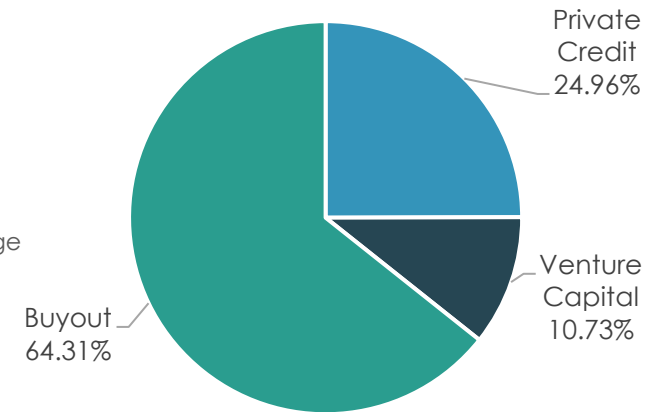
September 30, 2024

# Private Investments Characteristics

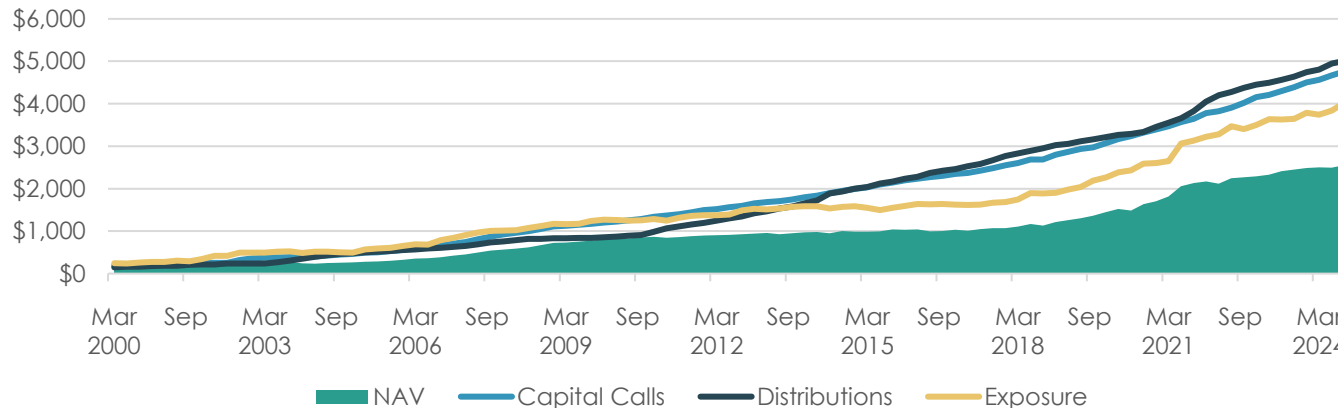
Private Investments  
Asset Allocation



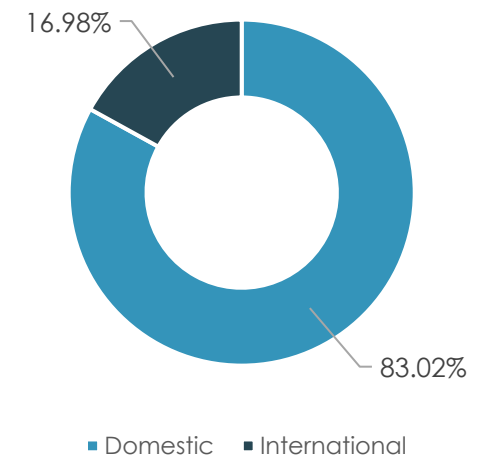
Strategy



Private Investments Over Time  
2000 - 2024

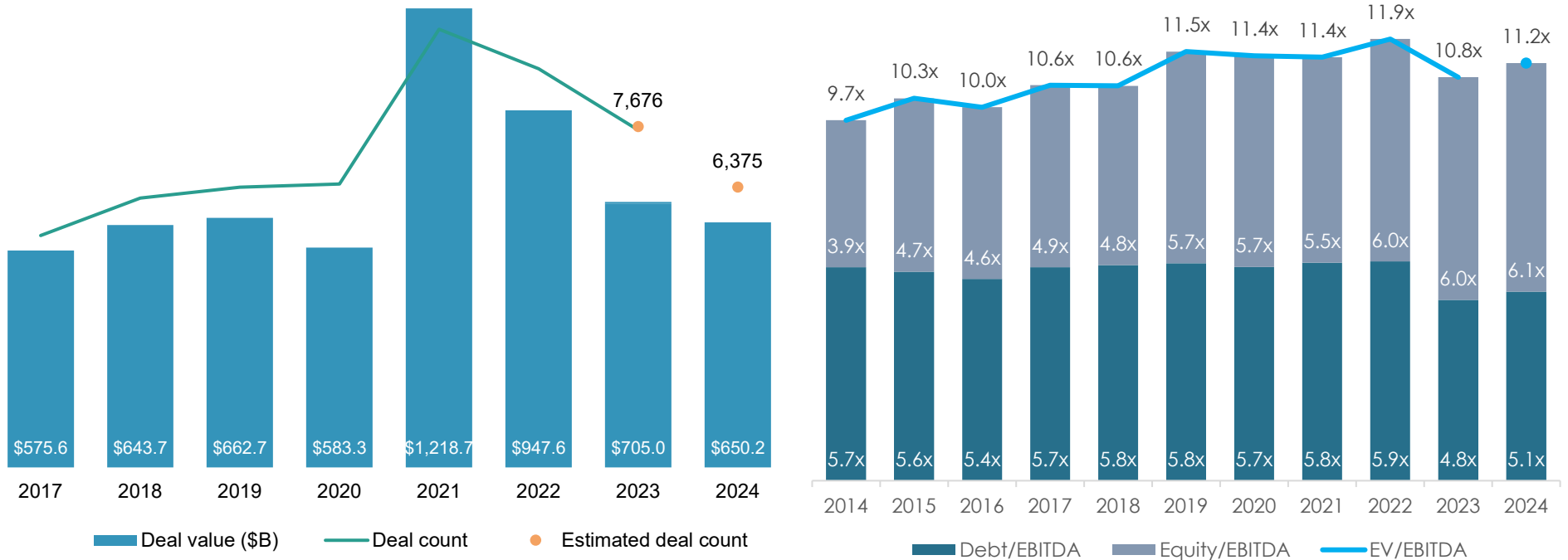


Domestic vs. International



\* Dollar values are in \$1,000,000  
September 30, 2024

# Private Investments Valuation



- The industry is on track to hit more than \$800 billion in deal value for the full calendar year. This would represent the third-highest total ever, indicating an end to the post-COVID decline.
- Banks are slowly making their way back to lending to leveraged buyout deals and are competing head-to-head with private credit lenders.
- Leverage ratios remain tight relative to their historical norm, however, are bouncing back from last year's lows.

Source: PitchBook. \*as of 9/30/2024

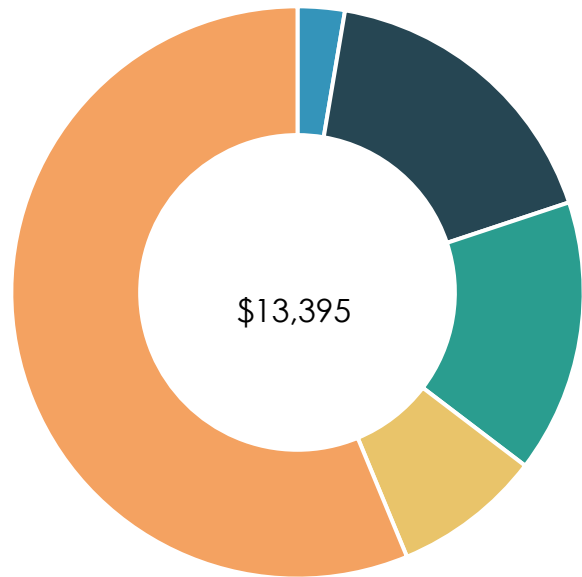
September 30, 2024

# Private Investments

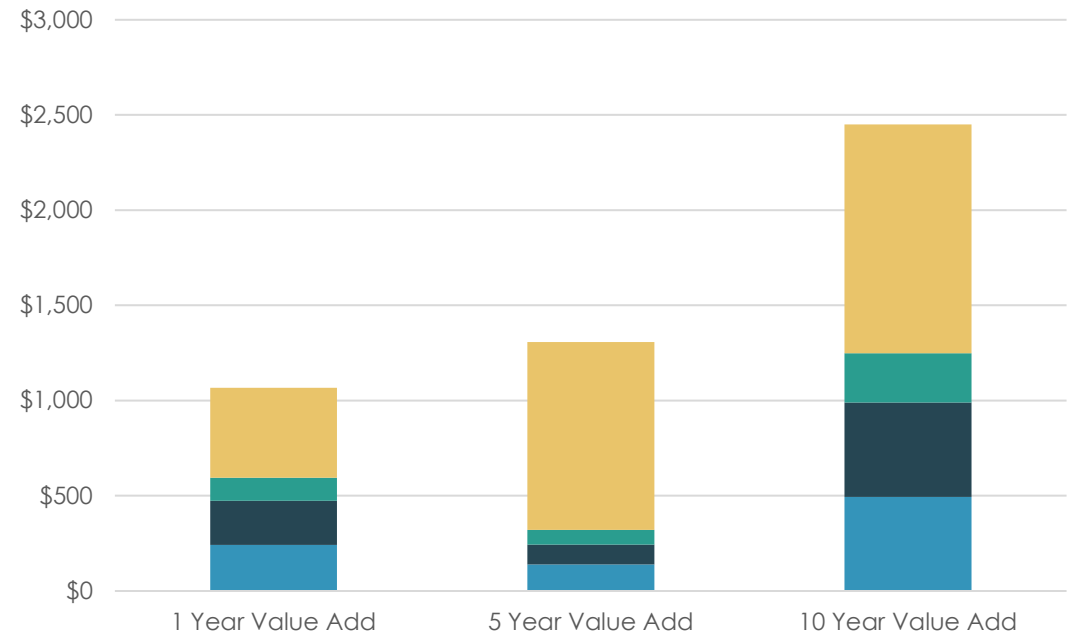
## New Commitments FYTD

- Tenex Capital Partners Fund IV, LP - \$50M
- FLC Big Horn Investment Fund, LP - \$100M
- **Rubicon Partners Fund IV, LP - £40M (~\$50M)**
- **Stellus Credit Fund IV, LP - \$50M**
- **Renovus Capital Partners Fund IV, LP - \$40M**
- **GoldenTree Tactical Opportunities Fund, LP - \$50M**
- **Deerpath Evergreen Advantage (US), LP – \$50M (CAPP), \$35M (TFIP), \$15M (State Fund)**

# Core Fixed Income Ownership Breakdown



■ SMA ■ Pension ■ Trust Funds ■ State Fund ■ STIP



■ Pension ■ Trust Funds ■ State Fund ■ STIP

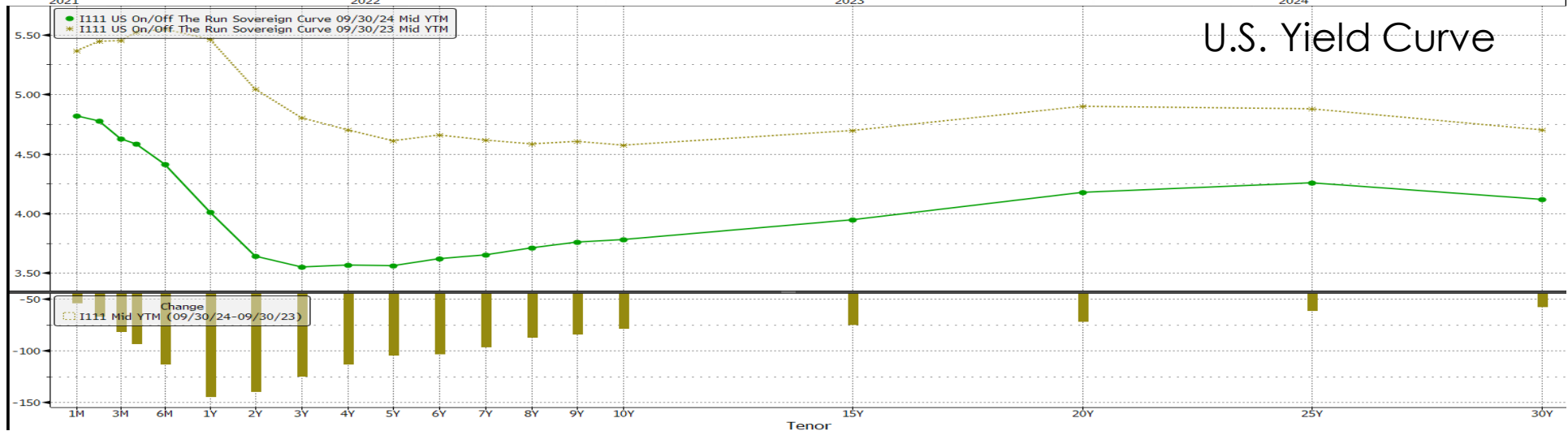
Performance	1 Year	1 Year Benchmark	5 Year	5 Year Benchmark	10 Year	10 Year Benchmark
Pension	12.25%	11.57%	0.83%	-0.67%	1.98%	1.07%
Trust Funds	11.91%	11.57%	0.75%	0.33%	2.26%	1.84%
State Fund	11.35%	11.57%	1.34%	0.78%	2.18%	1.72%
STIP	5.51%	5.64%	2.42%	2.37%	1.78%	1.74%

- Interest rates declined significantly over the last year.
- The market is pricing in a significant decline in rates over the next year.
- Significant uncertainty exists on future rates of inflation and Federal Reserve actions.

\* Dollar values are in \$1,000,000

September 30, 2024

# Core Fixed Income Valuation



- Risk premiums have declined below historical averages.
- The front end of the yield curve remains inverted. However, the curve has steepened for maturities greater than 3 yrs.

September 30, 2024

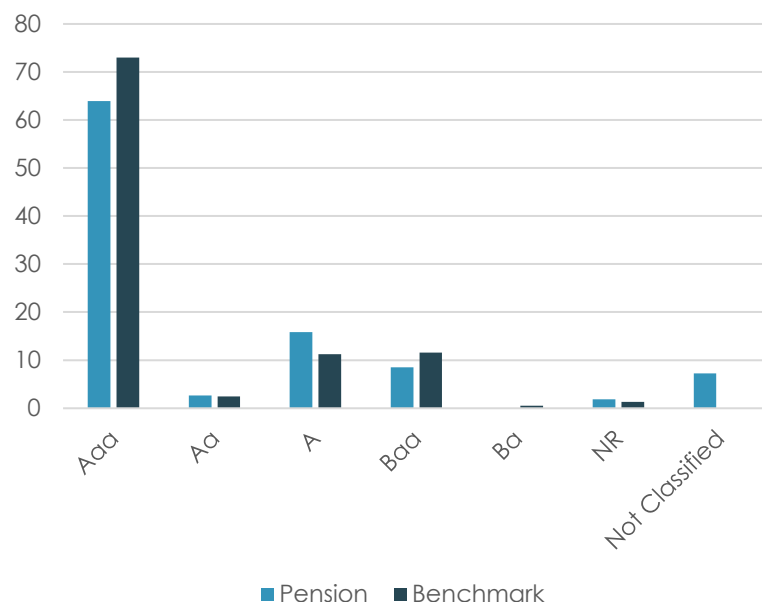
# Core Fixed Income

## Characteristics - Pension

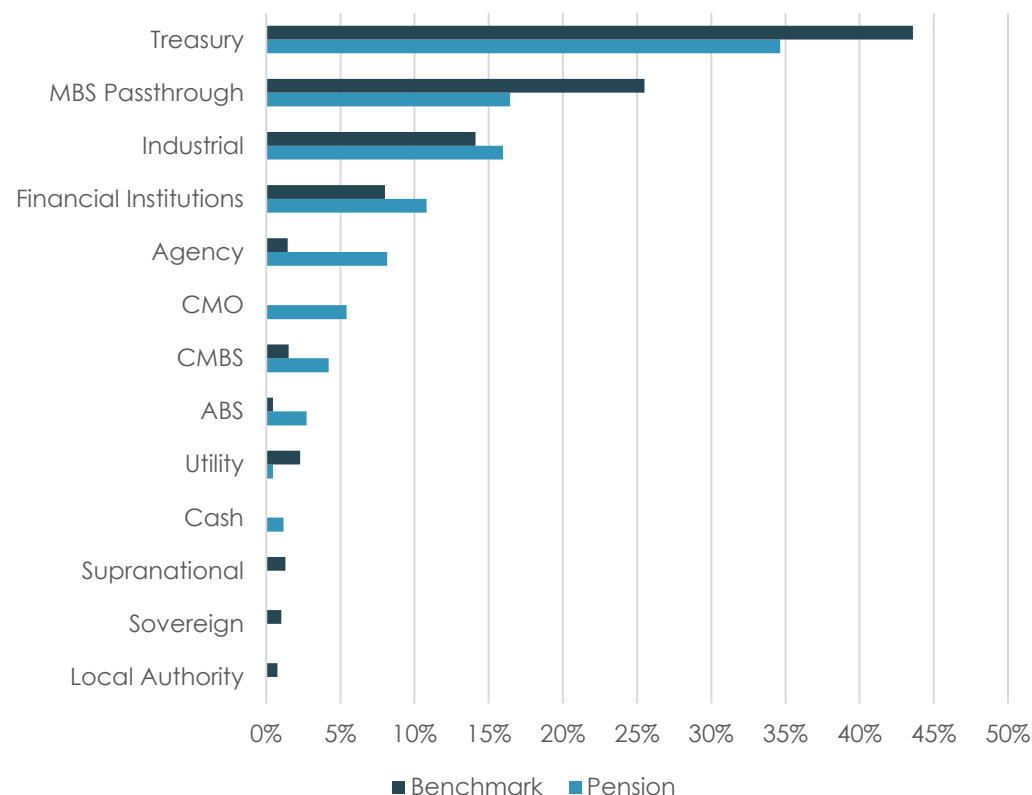
### Core Fixed Income

	Portfolio	Index	Difference	% of Index
Duration (Yrs)	6.95	6.13	0.82	113.38%
Yield to Worst	4.38%	4.23%	0.15%	103.55%
CTD from Corporate	1.31	1.74	-0.43	75.29%

Credit Rating



Sector



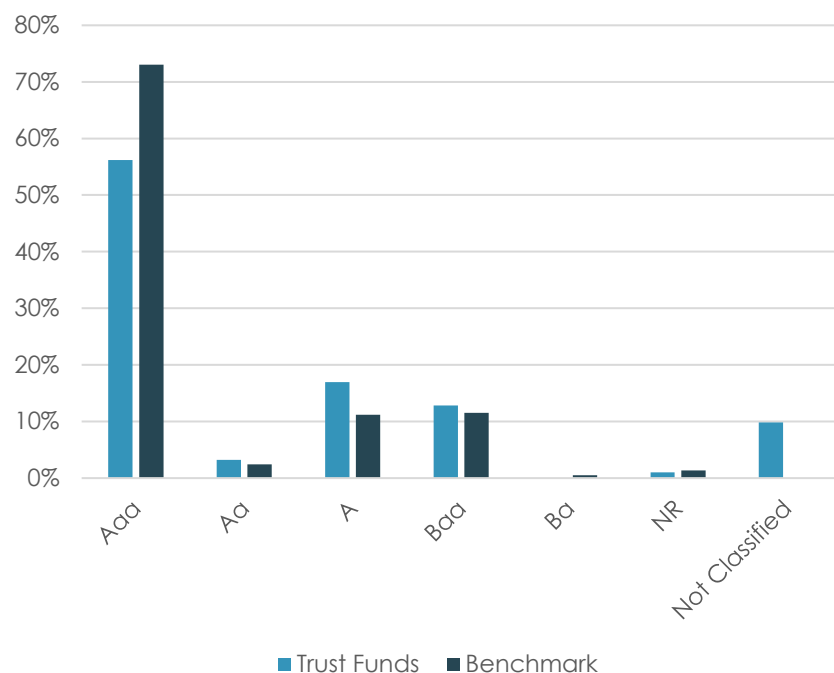
# Core Fixed Income

## Characteristics – Trust Funds

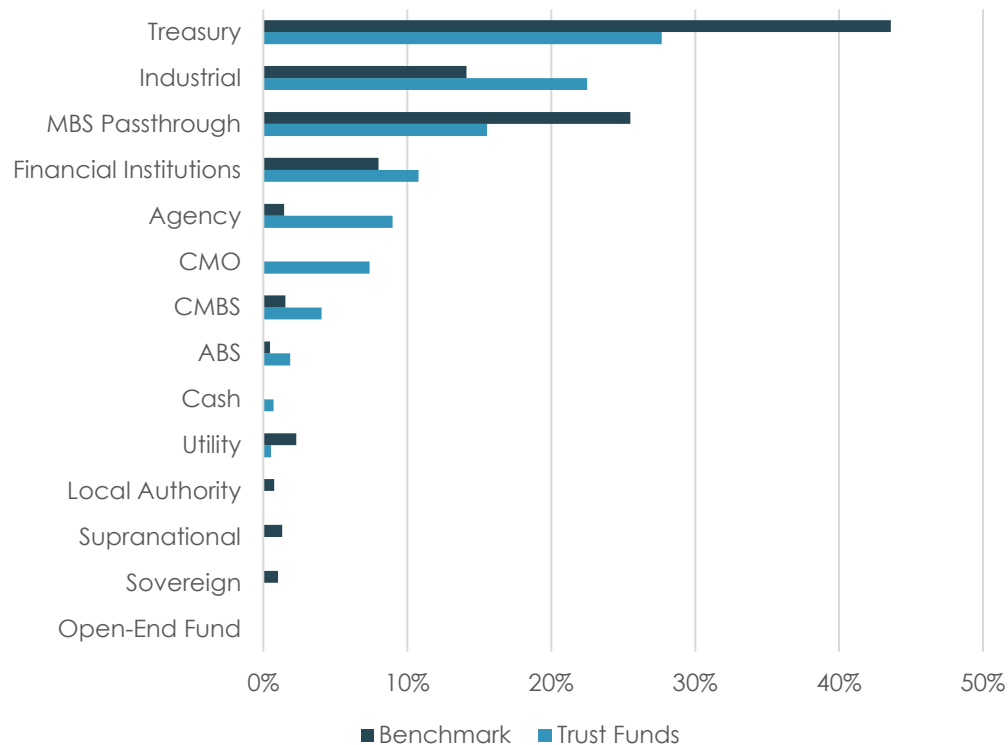
Trust Funds Investment Pool

	Portfolio	Index	Difference	% of Index
Duration	6.89	6.13	0.76	112.40%
Yield to Worst	4.46%	4.23%	0.23%	105.44%
CTD from Corporate	1.67	1.74	-0.07	95.98%

Credit Rating



Sector





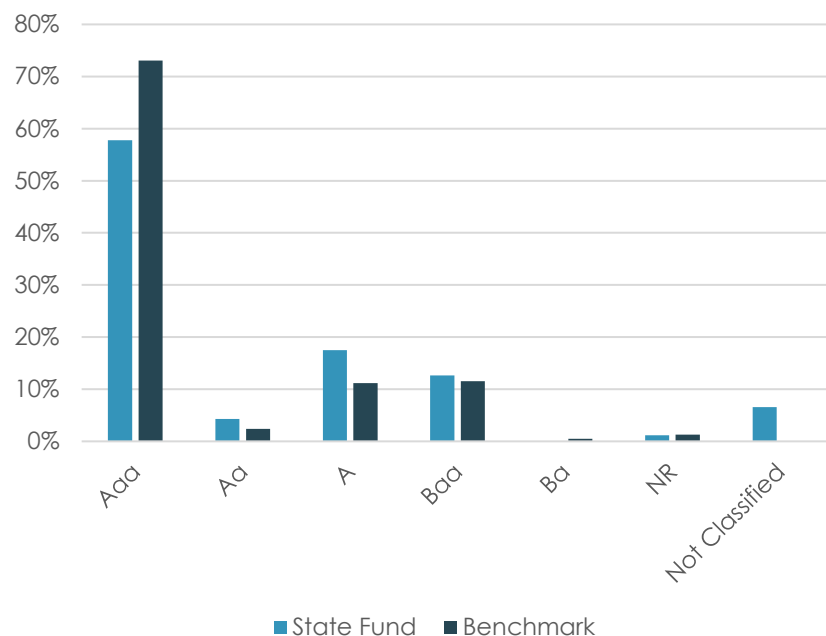
# Core Fixed Income

## Characteristics – State Fund

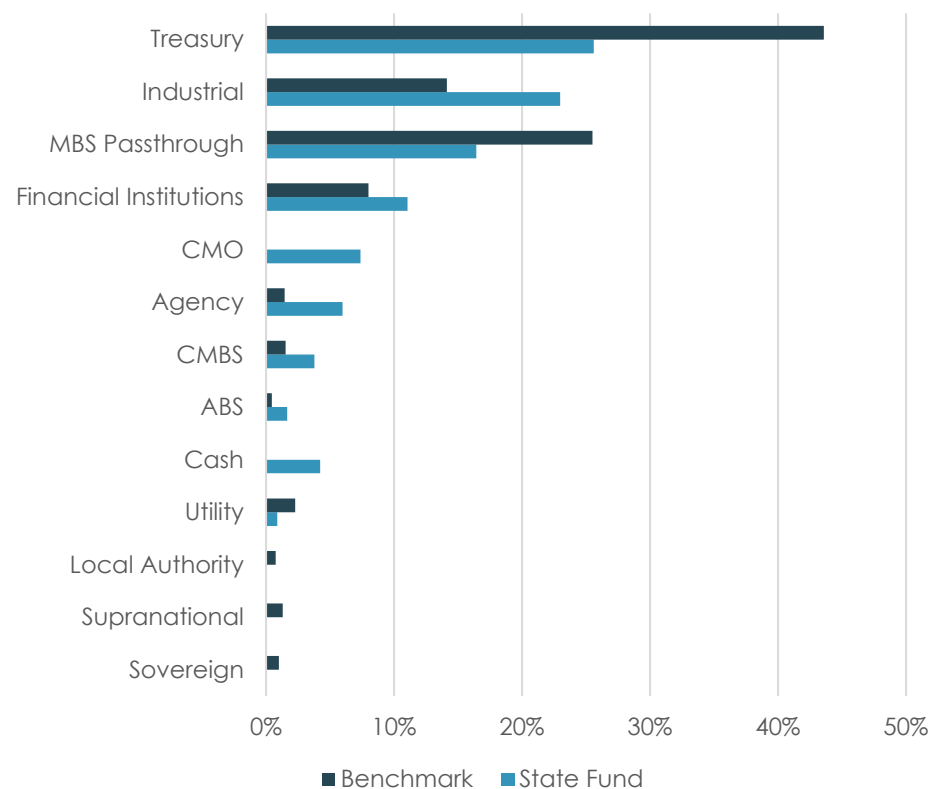
State Fund Investment Pool

	Portfolio	Index	Difference	% of Index
Duration	5.98	6.13	-0.15	97.55%
Yield to Worst	4.41%	4.23%	0.18%	104.26%
CTD from Corporate	1.51	1.74	-0.23	86.78%

Credit Rating



Sector

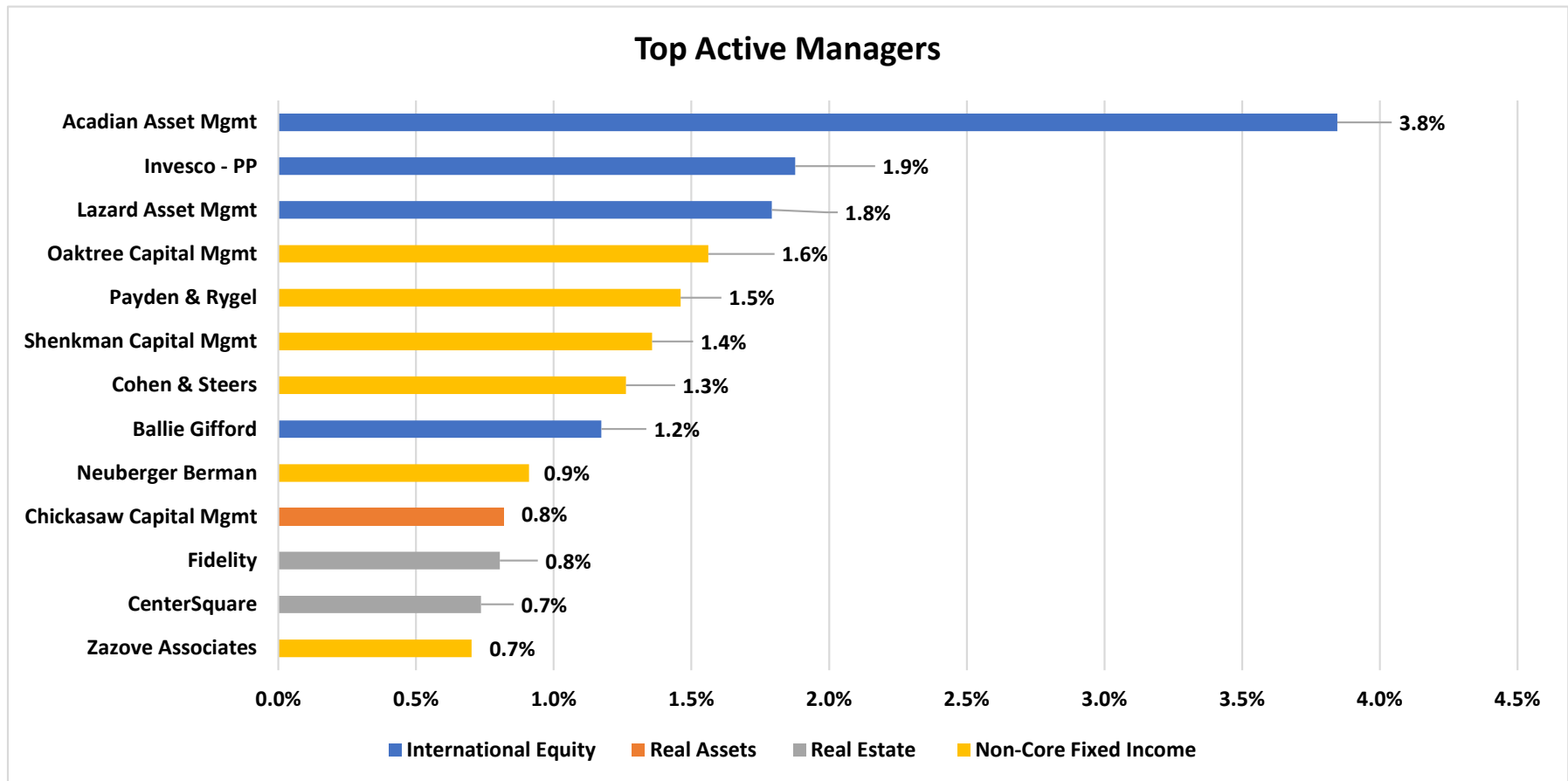


# APPENDIX

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# Risk Management

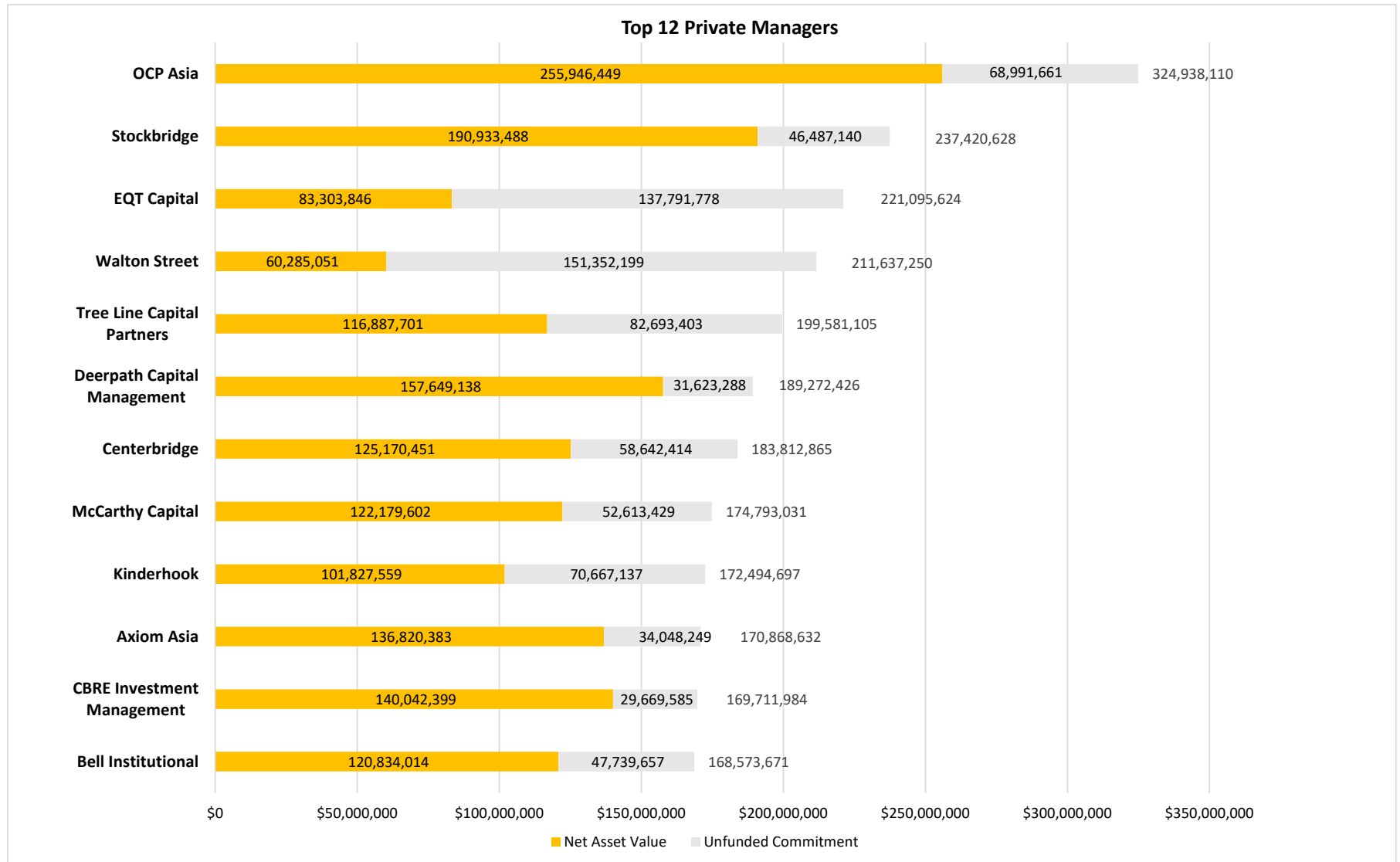
## Pension Holdings



\*Montana Public Retirement Plans shall have no greater than 5% of its Net Asset Value managed by any one external manager using an active investment strategy

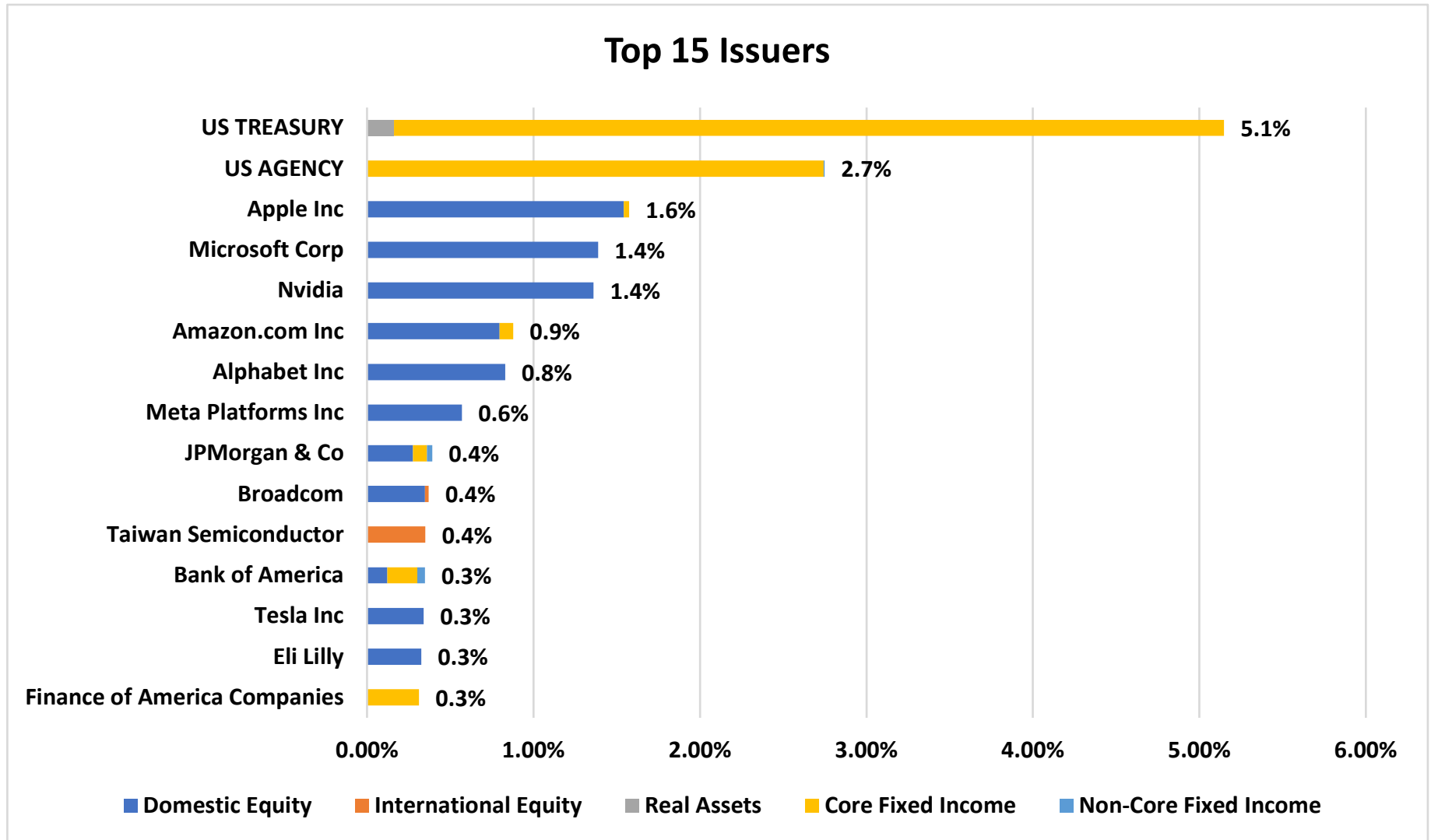
# Risk Management

## Pension Holdings

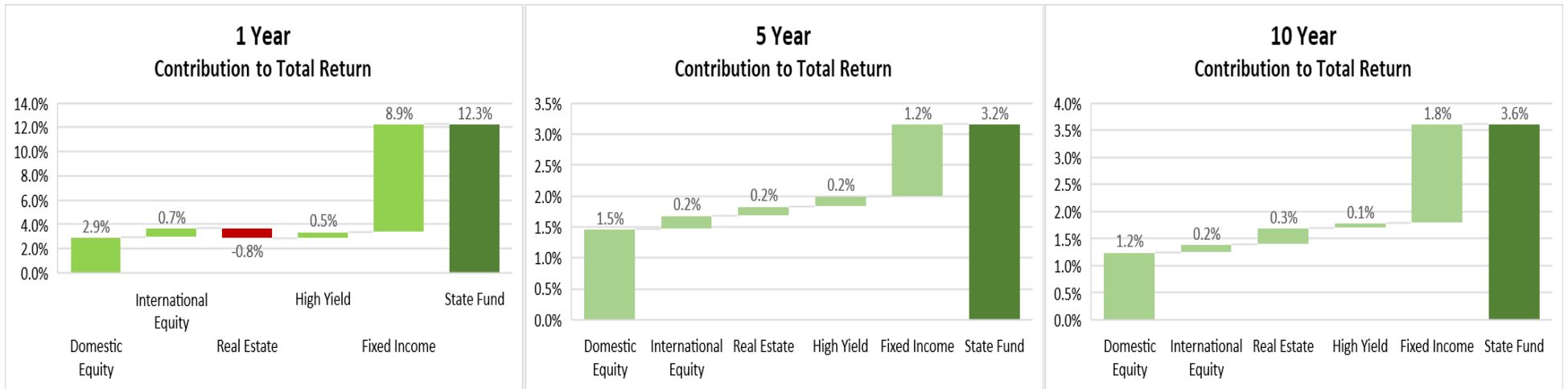


# Risk Management

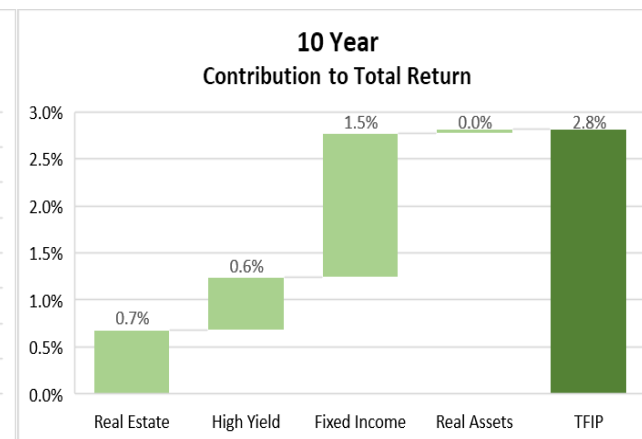
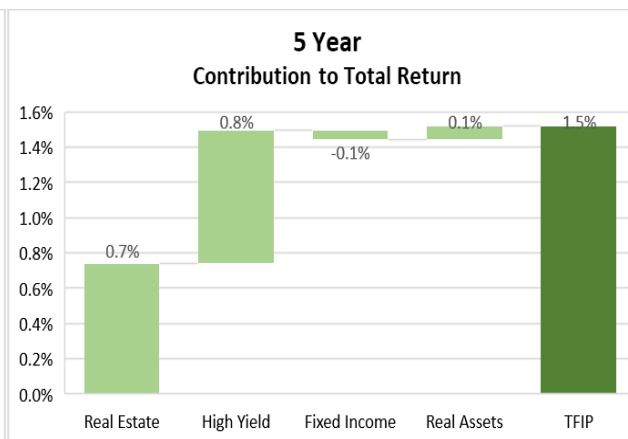
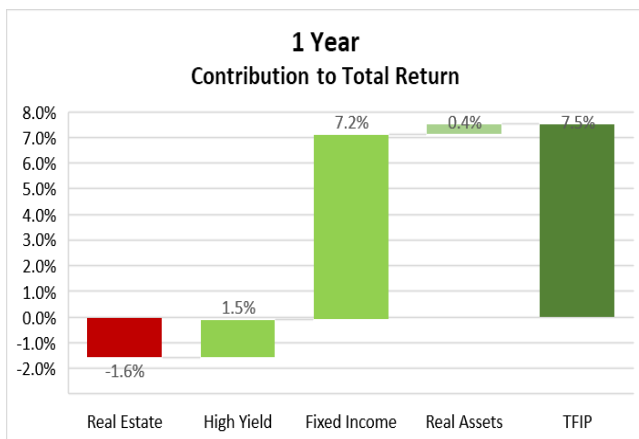
## Pension Holdings



# State Fund Performance



# Trust Funds Investment Pool Performance







# 2024 Board of Investments Calendar

JANUARY						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY						
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18	19	20	21	22	23	24
25	26	27	28	29		

MARCH						
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10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

APRIL						
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28	29	30				

MAY						
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12	13	14	15	16	17	18
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26	27	28	29	30	31	

JUNE						
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23	24	25	26	27	28	29
30						

JULY						
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21	22	23	24	25	26	27
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AUGUST						
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SEPTEMBER						
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OCTOBER						
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28	29	30	31		

NOVEMBER						
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17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Board Materials Due  
Board Packet Mailing  
Board Meeting Dates

# 2025 Board of Investments Calendar

JANUARY						
S	M	T	W	T	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
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27	28	29	30	31		

FEBRUARY						
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MARCH						
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23	24	25	26	27	28	29
30	31					

APRIL						
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY						
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18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUNE						
S	M	T	W	T	F	S
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY						
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST						
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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

SEPTEMBER						
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER						
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER						
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Board Materials Due  
Board Packet Mailing  
Board Meeting Dates

## BOI WORK AND EDUCATION PLAN

**2024**

**February 28-29**

**Education:**

Outreach Efforts for the Board - In-State Loan and INTERCAP Programs  
Short Term Investment Pool

**Reports:**

Ethics Policy  
Disaster Recovery and Emergency Preparedness  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

Audit: Financial Audit Report

**April 10**

**Education:**

Domestic Equity Asset Class Review  
RVK Annual Capital Market Assumptions

**Reports:**

Benchmarks Used by the Board

**May 22-23**

**Education:**

MT Buildings (Board as Landlord/Tenant Holdings)  
Investment Policy Statement Review  
Real Estate Asset Class Review

**Reports:**

Budget Status FYTD  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

HR: Staffing Level Review  
HR: Exempt Staff Compensation Review

**August-24**

**Education:**

Core Fixed Income Asset Class Review  
Budget Proposal for FY24-25  
INTERCAP Annual Detail Report

**Reports:**

Proxy Voting  
Budget Status Prior FY  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**October 9**

**Education:**

Separate Accounts Investment Review  
First Reading - Asset Allocation Range Recommendation

**Reports:**

CEM, Inc Cost Reporting Analysis

**Committee Meetings:**

HR: Exempt Staff Performance Review  
Audit: SOC I, Type 2 Report

**November 20-21**

**Education:**

2025 Legislative Session  
Adoption - Asset Allocation Range Approval

**Reports:**

Securities Litigation  
Policy 217  
LPAC  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

Audit: Annual Report and Financial Statements

**2025**

**February 26-27**

**Education:**

Cash Management of State Monies  
Custodial Banking Relationship and Continuity

**Reports:**

Ethics Policy  
Disaster Recovery and Emergency Preparedness  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

Audit: Financial Compliance Audit Report

**April 23**

**Education:**

International Equities Asset Class Review  
RVK Annual Capital Market Assumptions

**Reports:**

Benchmarks Used by the Board

**May 28-29**

**Education:**

State Government Customer Relationships  
Investment Policy Statement Review  
Real Assets Asset Class Review

**Reports:**

Budget Status FYTD  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

HR: Staffing Level Review  
HR: Exempt Staff Performance and Compensation Review

**August 20-21**

**Education:**

Trust Funds Investment Review  
Non-Core Fixed Income Asset Class Review  
INTERCAP Annual Detail Report

**Reports:**

Budget Status Prior FY  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**October 15**

**Education:**

Private Investments Asset Class Review  
First Reading - Asset Allocation Range Recommendation

**Reports:**

Securities Lending

**Committee Meetings:**

HR: Exempt Staff Performance Review  
Audit: SOC I, Type 2 Report

**December 10**

**Education:**

MPERA and TRS Relationship  
Adoption - Asset Allocation Range Approval

**Reports:**

Securities Litigation  
Policy 217  
LPAC  
Quarterly Reports  
In-State Loan Reports  
INTERCAP Reports

**Committee Meetings:**

Audit: Annual Report and Financial Statements

## BOI TERMINOLOGY

### **ACTIVE MANAGEMENT** (typically with respect to stocks)

Investment method which involves hiring a manager to research securities and actively make investment decisions to buy and sell securities in an effort to outperform an assigned index, rather than purchasing a portfolio of securities that would simply replicate the index holdings (*'passive'* investing).

### **ACTUARIAL ASSUMED RATE** (pension concept)

The investment return rate used by actuaries that enables them to project the investment growth of retirement system assets into the future (typically perpetual).

### **ACTUARIAL FUNDING STATUS** (pension concept)

A measurement made by actuaries to measure a pension system's financial soundness (ratio of actuarial liabilities to the actuarial value of the assets available to pay the liabilities).

### **ALPHA** (investment term)

Return on an investment portfolio in excess of the market return or benchmark return; generally used in the context of *'active'* management (as passive management, by definition, does not seek excess returns, or *'alpha'*).

### **ALTERNATIVE INVESTMENTS**

A wide range of investments, other than traditional assets such as publicly traded stocks and bonds. The most common nontraditional or alternative investments are private equity, real estate, commodities, and hedge funds.

### **ARBITRAGE** (bond program)

A structural or systematic difference between investment types which may allow profiting from the *'difference,'* i.e., arbitrage. The most common context for the use of *'arbitrage'* at the BOI is the federal law that prevents *'arbitrage,'* i.e., the profiting of investing tax-exempt securities (e.g., INTERCAP) into taxable yields investments (such as U.S. Treasuries).

### **ASSET ALLOCATION AND ASSET ALLOCATION RANGE** (general investment principle)

The Board's invested assets are divided or allocated into various asset classes such as stocks and bonds, each with its own characteristics, with the objective of attaining an optimal mix of risk and return. The total expected return of a portfolio is primarily determined by the mix or allocation to its underlying assets classes. Given the importance of *'asset allocation,'* the BOI Board sets the asset allocation *'range'* for each broad investment type or asset class.

### **ASSET-BACKED SECURITY**

Bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other providers of credit. Not mortgages.

### **AVERAGE LIFE** (fixed income, particularly bonds)

The average time period the debt is expected to be outstanding. This is typically the maturity date for a traditional bond structure; however, it will be shorter for bonds having a sinking fund or amortizing payment structure.

## **BANKER'S ACCEPTANCE**

A short-term credit investment which is created by a non-financial firm and whose payment is guaranteed by a bank. Often used in importing and exporting, and as a discount money market fund investment.

## **BARCLAY'S AGGREGATE INDEX (fixed income)**

A composite of outstanding bond issues, including corporate, structured, and government bonds whose overall investment features such as return and investment type are tracked over many years. This is the most common benchmark used for comparing the performance of a portfolio that invests in U.S. investment grade fixed income securities. Formerly known as the Lehman Aggregate bond index.

## **BASIS POINTS (investment jargon)**

A basis point is 1/100<sup>th</sup> of a percentage. Ten basis points is one tenth of a percent, typically written as 10 bps.

## **BENCHMARK (standard investment concept)**

The concept of employing a particular independent or market investment return as a measurement to judge an investment portfolio's return; typically chosen investment benchmarks have the following attributes: they are investible, quantifiable, chosen in advance, easily understandable, and have a long history; common examples are the S & P 500 Index and the Barclay's Aggregate Index.

## **BETA (investment jargon)**

A measure of the risk (or volatility) of a security or a portfolio in comparison to the market as a whole. If the stock or portfolio moves identically to that market, its beta value is 1; if its price volatility (or movement) is greater than that market's price volatility, it is said to have beta greater than 1.

## **CAP, AS IN LARGE 'CAP' (generally for stocks, e.g., public equities)**

'Cap' is short for capitalization, as a reference to the market value of a publicly-traded company. The current stock price times the total shares outstanding of the company equals its market capitalization or market 'cap'; often used contextually such as 'large-cap,' 'mid-cap,' and 'small-cap' for different sized public companies.

## **CERTIFICATE OF DEPOSIT (CD):**

A short-or medium-term, interest-bearing deposit obligation offered by banks and savings and loans. These may include "Yankee CDs" which are CDs issued by foreign banks or their U.S. affiliates in the U.S. which are denominated in U.S. dollars

## **CLAWBACK (private equity)**

A clause in the agreement between the general partner and the limited partners of a private equity fund. The clawback gives limited partners the right to reclaim a portion of distributions to a general partner for profitable investments based on significant losses from later investments in a portfolio which ultimately resulted in the general partner receiving more distributions than it was legally entitled to.

## COMMERCIAL PAPER

An unsecured obligation issued by a corporation or bank to finance its short-term credit needs, such as accounts receivable and inventory. Maturities typically range from two (2) to two hundred seventy (270) days. Commercial paper is available in a wide range of denominations, can be either discounted or interest-bearing, and usually a limited or nonexistent secondary market. Commercial paper is usually issued by companies with high credit ratings, meaning that the investment is almost always relatively low risk.

## CORE (context varies for equity, fixed income, real estate)

In equity and fixed income, 'core' refers to investments that are generally always found in the portfolio and normally expect to hold for a very long time e.g. 'core' holdings of the largest U.S. companies, or U.S. treasuries; in real estate, 'core' generally refers to the best quality of real estate holdings such as prime commercial property in major metropolitan cities that have low leverage and low levels of vacancy.

## CORPORATE NOTE

A type of unsecured debt issued by a corporation that may be longer-term than Commercial Paper, but shorter-term than a typical Corporate Bond.

## CORRELATION (common statistical concept)

A measure of how two or more investment values or two asset classes move relative to each other during the same time period. A central concept in portfolio construction is to seek investments whose values do not move *together* at the same time, i.e., are uncorrelated. A correlation of 1 means that two or more investments 'move' precisely together.

## CREDIT ENHANCEMENT (bond program)

At BOI, the term generally refers to credit support or a bond or loan guarantee. For example, the Board's INTERCAP bonds are 'enhanced' by the BOI's performance guarantee bringing down the yearly interest rate.

## CUSTOM BENCHMARK (or sometimes custom index)

A way to measure investment performance using a tailor-made measurement versus a generic industry-standard benchmark. At the BOI, total pension performance is measured against the Board's 'custom index' or 'custom benchmark' which is a weighted blend of all the underlying asset class benchmarks used to measure the asset class returns.

## DERIVATIVES (investment jargon)

Investment securities whose performance itself depends (or is 'derived') from another underlying investment return. Examples include stock options, puts/calls, and forward currency contracts whose returns are based on the underlying stock or currency.

## DEVELOPED MARKETS (equity)

Countries having a long period of stable industrialization; or are the most economically developed.

## DISCOUNT (fixed income, generally)

Used most often with respect to bonds, the price paid that is less than face (or 'par') value. A \$1 million face-value of a bond purchased for less than a million is bought at a 'discount.' Described as the difference between a bond's current market price and its face or redemption value.

### **DIVERSIFICATION** (standard investment concept)

The concept of spreading risk by putting assets in several investment categories, each having different attributes with respect to type, expected return, risk, and correlation, to best protect against the risk of loss.

### **DURATION** (bonds)

Almost exclusively used when discussing fixed income bonds, a measurement of how sensitive a bonds' change in price is to a change in general market interest rates, expressed in years (specifically calculated as a weighted average term to maturity of the bond's cash flows). The greater the duration of a bond, the greater the volatility of price for changes in market interest rates.

### **EFFICIENCY** (usually when discussing various stock markets)

Used to describe markets where it is very difficult to achieve return in excess of that of the overall market from individual stock selection. When information is widely available on a company and its securities are traded regularly the market is considered 'efficient.'

### **EMERGING MARKETS** (most often for public equities)

Certain international securities markets that are typically small, new, have low turnover, and are located in countries where below-average income prevails and is developing in response to the spread of capitalism.

### **ENHANCED** (pertaining to stocks)

Generally linked with 'index' as in enhanced index, an indexed investment management style that has been modified to include the portfolio manager's idea of how to outperform the index by omitting some stocks in the index and overweighting others in a limited manner designed to enhance returns but at minimal risk.

### **EXCESS RETURNS** (standard investment concept)

Returns are 'excess' if they are more than the market or more than the benchmark they are measured against.

### **EXEMPT STAFF VS. CLASSIFIED STAFF** (specific to Montana state government)

"Exempt" refers to the Board's eleven employees who, under state law, do not fall under the state's standard employment rules (the 'classified' staff).

### **FIDUCIARY** (from the Latin verb, fidere, to trust)

The concept of trust and watchfulness; a fiduciary is charged with the responsibility of investing the money wisely for the beneficiary's benefit. Board members are the ultimate 'fiduciaries' for the Board's assets and are obligated to be a good agent.

### **FTE** (state government jargon)

An acronym in state government: "full time equivalent" as in full time employee. The concept is a slot or position, not the actual individuals. The BOI is currently authorized for 32 FTE's.

### **FUND OF FUNDS** (private equity)

A concept used in alternative investments referring to using an investment manager to invest in **other** managers or funds, as opposed to making direct investments in funds.

### **GAAP/GASB** (accounting terminology)

GAAP...Generally Accepted Accounting Principles; Montana state law uses GAAP accounting principles unless specifically allowed otherwise. GASB...Government Accounting Standards Board, the board that sets GAAP standards for U.S. governments (FASB...Financial Accounting Standards Board, the entity for commercial and business accounting standards).

### **GENERAL OBLIGATION** (municipal finance term)

Used to describe the promise that a government makes to bond holders, backed by taxing and further borrowing power, it is generally considered the highest level of commitment to bondholders. At the local government level, general obligation bonds typically require a vote of the residents.

### **GENERAL PARTNER VS. LIMITED PARTNER** (private equity)

In private equity, the general partner is responsible for the operations of the partnership and makes the actual underlying investment decisions; the limited partner is the investor, and therefore has limited liability for investment decisions; the BOI is the 'limited' partner in its private equity fund investments (and real estate funds as well).

### **GROWTH** (as to style public equities)

An investment style that more heavily invests in companies whose earnings are expected to grow at an above average rate to the market. A growth stock usually does not pay a dividend, as the company would prefer to reinvest retained earnings in capital projects to grow the company (vs. 'value,' which considers buying established companies they feel are trading at bargain prices to the fundamental analysis of the company's financial statements and internal competitive factors).

### **INDENTURE** (bond and loan programs)

The central document describing the contract between investors and the borrower or user of the proceeds. The Board's INTERCAP program is structured around a bond indenture.

### **HEDGE FUND** (as defined by Investopedia)

An aggressively managed portfolio of investments that uses advanced investment strategies such as *leverage*, long, short and *derivative* positions in both domestic and international markets with the goal of generating high returns (either in an absolute sense or over a specified market *benchmark*).

### **HURDLE RATE** (private equity)

a minimum return per annum that must be generated for limited partners of a private equity fund before the general partner can begin receiving a percentage of profits from investments.

### **INDEX** (investment concept)

Typically, a single measure of a broadly-based group of investments that can be used to judge or be compared to the return performance of an individual investment or manager.

### **INDEXING** (investment concept)

Typically refers to investing in a portfolio to match a broad range of investments that are set within a pre-determined grouping, such as the S&P 500, so as to match its performance; such investing is generally labeled 'passive' or indexed investing; or buying shares in an Index Fund.



### IN-STATE LOAN PROGRAM (Montana-specific)

Programs that are funded by the state's coal severance tax monies.

### INTERNAL SERVICE VS. ENTERPRISE FUND (state accounting concept)

Within Montana state government: a program whose funding is dependent on **mandatory participation** by another state government program is labeled an 'internal' service fund; a program whose funding is dependent on voluntary participation is labeled an enterprise fund. At BOI, the investment program is an internal service fund because participation is not voluntary; the Board's bond and loan programs, because their use is voluntary, are accounted for as an enterprise.

### INVESTMENT GRADE (bonds)

Bond ratings from Moody's, Standard and Poor's, and Fitch high enough to be considered secure enough for most investors (bonds rated AAA – BBB). Below investment-grade bonds (below BBB) are generally considered to have a more speculative outlook and carry more risk of default.

### IRR (private equity)

A measure of investment performance, short for 'internal rate of return,' expressed as a percentage (the 'internal rate of return' number, or discount rate) that mathematically will equalize the total future cash flows of an investment to the initial cash outflow of the investment, the concept accounts for the time value of money.

### LEVERAGE (investment concept)

As an investment concept, a way to increase a return on an investment through a combination of one's own money and by borrowing additional money to enhance such an investment; high 'leverage' is also associated with high risk.

### LINK DEPOSIT

The Link Deposit program can provide a financial institution a long-term fixed rate funding source "linked" to a specific loan. The State of Montana provides the financial institution funding in the form of a deposit through the Montana Board of Investments using coal tax funds.

### MASTER LIMITED PARTNERSHIP

An investment structure that combines the tax benefits of a limited partnership with the liquidity of a common stock. While an MLP has a partnership structure, it issues shares that trade on an exchange like common stock. MLPs are often broadly associated with energy companies operating in midstream services.

### MEAN VARIANCE OPTIMIZATION MODEL ('Modern Portfolio Theory')

A theory that it is possible to construct a portfolio to maximize the return for the least amount of risk or volatility. This theory is based on various asset types and their level of expected return, risk (volatility) and their correlation with each other or how the asset values move with each other. The central idea of the model is to blend investments so that in total, they provide both the best expected return and optimal amount of diversification to minimize deep performance swings (volatility); a central tenant is that long term historical returns are indicative of future returns.

### **MEZZANINE FINANCE** (private equity)

Subordinated debt with an equity 'kicker' or ability to share in the equity value of the company. It is typically lower quality because it is generally subordinated to debt provided by senior lenders such as banks, thus is considered higher risk.

### **MULTIPLE** (as in "multiple" of invested capital, private equity)

The ratio of total cash returned over the life of the investment plus the investment's residual value over the total cash expended in making the investment. A multiple of 2 means, regardless of the total investment time period, that total cash returned was twice the cash invested.

### **130/30 STRATEGY** (public equities)

Also called 'partial long short,' this strategy involves the establishment of a short position in select stocks while taking the proceeds of those shorts and buying additional long positions in stocks. The net effect is an overall market position that is 100% long, but the active decisions on individual stock selections are amplified by this ability to short. If the stock selections are successful, the strategy enables the portfolio to profit more than if a stock had simply not been owned, as with traditional long-only portfolios.

### **OPPORTUNISTIC** (real estate)

In real estate, a euphemism for the most risky real estate investments, typically distressed, raw land, newly developed buildings or other high risk investments in the real estate sector, (versus, 'core,' which are the best quality fully leased commercial properties).

### **OVERWEIGHT OR UNDERWEIGHT** (investment concept)

Generally, the level of holdings of a certain type of investment that is above or below either a benchmark's weight (portion of total investment), or the percentage held of a particular asset class compared to the Board's asset allocation policy weight. Also used to describe an external investment manager's decision to have more (or less) of a particular investment than the percentage or weighting found in the benchmark.

### **P/E RATIO** (equity)

The price of a publicly traded stock divided by its estimated or actual earnings is the price/earnings or P/E ratio. This can also be calculated for a stock index or portfolio of stocks. Over the last 100 years, the S&P 500 has had an overall P/E ratio of about 15, or a total index price of about 15 times the annual earnings of its underlying companies.

### **PACING STUDY** (private equity)

An analysis of the likely timing and amount of the drawdown of committed but yet uninvested monies and the estimated distributions or returns from the funds held in an alternative investment portfolio, generally used to judge the future size of the portfolio and its potential liquidity needs, i.e., cash funding demands.

### **PAR** (fixed income)

The initial principal amount designated by the issuer of the bond, or face value of a bond.

### **PASSIVE**

For investments, generally not materially participating in an investment decision, meaning an investment portfolio whose returns follows that of a broad market index, such as an investable stock index, i.e. the S & P 500.

**PASSIVE MANAGEMENT OR PASSIVE INVESTMENT** (most often in public equities, but not exclusively)

An investment style where a fund's portfolio mirrors a market index, such as the S&P 500, with limited selection decisions by the manager, resulting in market returns. Passive management is the opposite of active management in which a fund's manager attempts to beat the market with various investment strategies and buy/sell decisions of a portfolio of securities to enhance returns.

**PASSIVE WEIGHT** (generally equities)

The percentage of a stock held in a particular index portfolio, or percentage of an overall asset class that is held in passive portfolios.

**POLICY PORTFOLIO**

A fixed-target asset allocation, as opposed to asset allocation ranges, which theoretically allows gauging whether deviations from the target portfolio had a positive or negative impact on overall performance.

**PORTABLE ALPHA** (public equities)

An investment strategy which involves the active selection of securities while neutralizing overall beta or market risk. This often involves the use of derivative investments such as futures to replicate the market return, either taking a short or long position, while then selecting securities which are expected to add return in an absolute sense or in addition to the market return. As an example, this strategy can be found with certain hedge funds where a market exposure is shorted while individual securities such as specific stocks are purchased that are expected to outperform the general market. The concept of portable applies when the ability to generate positive alpha can be overlaid or ported onto a portfolio. This is not a strategy employed by any of MBOI's existing managers.

**PREMIUM** (fixed income)

Most often the amount paid over the stated face amount (often called 'par') of a bond, but also used in other contexts, typically paying more (the premium) than a market price (as in a take-over bid for a company).

**PRIVATE ANNUAL WAGE**

The private annual wage is determined annually by the Montana Department of Labor & Industry using the average annual employment divided by the total wages.

**PROXY** (publicly traded companies)

An agent legally authorized to act on behalf of another party. Shareholders not attending a company's annual meeting may choose to vote their shares by proxy by allowing someone else to cast votes on their behalf, but the word 'proxy' is used more frequently colloquially as a 'close approximation.'

### **PRUDENT EXPERT, PRUDENT PERSON** (a central fiduciary concept)

These legal terms have long histories of court-determined standards of care, deriving originally under English common law. The BOI is empowered to operate under the 'prudent expert rule,' which states that the Board shall manage a portfolio:

- a) with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims;*
- b) diversify the holdings of each fund within the unified investment program to minimize the risk of loss and to maximize the rate of return unless, under the circumstances, it is clearly prudent not to do so; and*
- (c) discharge the duties solely in the interest of and for the benefit of the funds forming the unified investment program.*

At an 'expert' level; there is more room for accepting risk under the prudent expert rule than the prudent person rule.

### **REBALANCING** (general investment term)

The process of realigning the weightings of the portfolio of assets. Rebalancing involves periodically buying or selling assets in the portfolio to maintain the original desired level of asset allocation and/or to stay within predetermined asset category range; it is part of a disciplined investment approach within modern portfolio theory.

### **REPURCHASE AGREEMENT**

A contract in which the seller of securities, such as Treasury Bills, agrees to buy them back at a specified time and price. May also be called "Repo" or "Buyback." Typically used as a short-term form of collateralized borrowing by a bank or securities dealer.

### **RESOLUTION** (government term)

Generally, a formal and written action by a governmental (or corporate) body that has long term significance and requiring a vote of the governing body. BOI uses 'resolutions' generally only for its most significant and long term actions and/or policies.

### **REVERSE REPURCHASE AGREEMENT**

A purchase of securities with an agreement to resell them at a higher price at a specific future date. The investor essentially borrows money and allows its securities to be held as collateral. Reverse Repurchase Agreements occur most often in government securities or other securities that are highly valued and thus considered a good form of collateral.

### **SECURITIES LENDING** (general investment)

Investments that are temporally borrowed by other investors for a fee; the BOI allows most of its publicly traded investments to be loaned for additional marginal income.

### **STANDARD DEVIATION** (common statistical concept)

A specific statistic that measures the dispersion of returns from the mean over a specific time period to determine the "historical volatility" of returns for a stock, or portfolio, or asset class; more specifically a single unit (i.e., one standard deviation) of dispersion that accounts for approximately 66% of all data around a mean using a 'normal' (or 'uniform' or 'bell-shaped' curve; as opposed to a skewed or asymmetrical) distribution. The standard deviation is used as a gauge for the amount of expected future volatility.

### **SABHRS** (accounting jargon)

Montana state government's State Accounting, Budgeting and Human Resource System; the State's central information management system. BOI investment and other financial data must tie and be reported on this system, which is the official book of record and includes the state's financial statements.

### **STYLE DRIFT** (often in reference to public equity managers, but applicable to other managers, too)

As the name implies, a divergence from an investor's professed investment bias or style or objective.

### **TRANCHE**

A division or portion of a pool or whole; specifically: an issue of bonds derived from a pooling of like obligations (such as securitized mortgage debt) that is differentiated from other issues especially by maturity or rate of return.

### **TRACKING ERROR** (statistical concept in investments)

A measurement of the standard deviation of a portfolio's return versus the return of the benchmark it was attempting to outperform. The concept is often used when discussing investment managers. For example, some styles are expected to have high 'tracking errors,' (e.g., deep 'value' investors who buy companies that may be dogs for years), versus passive managers, whose stock volatility is expected to be very close to their benchmark. Tracking error can either be intentional or unintentional; it can also be regarded as an accepted deviation or contrary to the management agreement. High *unexpected* tracking error is generally a serious concern to be examined and understood.

### **UNDERWRITER** (bond program)

In investments, the agent who buys investments to be resold to the public; at BOI, the investment firms that buy the Board's bonds to be resold to the public.

### **UNIFIED INVESTMENT PROGRAM** (Montana Constitution)

The Program in the State's constitution requiring a central investment program which the legislature has assigned to the BOI.

### **VALUE** (as to style when discussing public equities)

An investment style that focuses on buying established companies that investors believe are undervalued and trading at bargain prices to the fundamental analysis of the company's financial statements and internal competitive factors.

### **VENTURE CAPITAL** (private equity)

A higher-risk/high-return type of investing in startup firms and small businesses with perceived long-term growth potential. Sometimes these are already existing business ventures with limited operating history that need additional management expertise and access to capital. (For start-ups, 'seed capital,' or 'angel investor' are terms differentiating this even higher risk type of investment.)

**VOLATILITY** (investment jargon)

A statistical measure of the dispersion of returns for a given security or market index. Volatility is typically measured by using the standard deviation of returns from the security or market index. Commonly, the higher the volatility, the riskier the security.

**YIELD** (general investment, but most often within fixed income)

The amount returned to the investor above the original investment generally expressed as a percentage. Yield can be thought of as the expected return from the combination of interest and price accrual or amortization to maturity (in the case of a bond trading at a discount or premium to par).

**YIELD CURVE** (fixed income)

A line that plots the prevailing interest rates at a given time for bonds ranging in maturity from as short as three months out to 30 years. When plotted across these various maturities (typically 2, 5, 7, 10 and 30 years), the resultant line is shaped like a curve with generally low interest rates (the yield) for shorter maturities and gradually higher interest rates for longer maturities, because generally investors demand higher interest rates for longer term investments. The yield curve for U.S. Treasury debt is the most common when referring to the prevailing level of interest rates.

## **MONTANA BOARD OF INVESTMENTS**

### **ACRONYM INDEX**

ACH.....	Automated Clearing House
ADV.....	Uniform Application for Investment Adviser Registration and Report by Exempt Reporting Advisor
AUM.....	Assets Under Management
ADR.....	American Depository Receipts
AOF .....	All Other Funds
ARC .....	Actuarially Required Contribution
BOI .....	Board of Investments
CAPP .....	Consolidated Asset Pension Pool
CFA .....	Chartered Financial Analyst
EM .....	Emerging Market
FOIA .....	Freedom of Information Act
FWP.....	Fish Wildlife and Parks
FX.....	Foreign Exchange
IPS.....	Investment Policy Statement
IRP.....	Intermediary Relending Program
LDI.....	Liability-Driven Investing
MBOH.....	Montana Board of Housing
MBOI .....	Montana Board of Investments
MDEP .....	Montana Domestic Equity Pool
MLP .....	Master Limited Partnership
MFFA.....	Montana Facility Finance Authority
MPEP .....	Montana Private Equity Pool
MPT .....	Modern Portfolio Theory
MSTA.....	Montana Science and Technology Alliance
MTIP .....	Montana International Pool

MTRP .....	Montana Real Estate Pool
MTSBA .....	Montana School Boards Association
MVO .....	Mean-Variance Optimization
NAV .....	Net Asset Value
PERS .....	Public Employees' Retirement System
PFL .....	Partnership Focus List
QZAB .....	Qualified Zone Academy Bonds
QSCB .....	Qualified School Construction Bonds
RFBP .....	Retirement Funds Bond Pool
RFP .....	Request for Proposal
SABHRS .....	Statewide Accounting Budgeting and Human Resource System
SLQT .....	Securities Lending Quality Trust
SOC1 .....	Service Organization Controls 1 (Audit)
SSBCI .....	State Small Business Credit Initiative
STIP .....	Short Term Investment Pool
TFBP .....	Trust Funds Bond Pool
TFIP .....	Trust Funds Investment Pool
TIF .....	Tax Increment Financing
TIFD .....	Tax Increment Financing District
TRS .....	Teachers' Retirement System
TUCS .....	Trust Universe Comparison Service
UIP .....	Unified Investment Program
VIX .....	Volatility Index



## ASSET CLASS ACRONYMS

DEPAC .....	Domestic Equity Pension Asset Class
IEPAC .....	International Equity Pension Asset Class
PEPAC .....	Private Equity Pension Asset Class
NRPAC .....	National Resources Pension Asset Class
REPAC .....	Real Estate Pension Asset Class
TIPAC .....	TIPS Pension Asset Class
BFPAC.....	Broad Fixed Income Pension Asset Class
USPAC .....	UST/AGY Pension Asset Class
IGPAC .....	Investment Grade Corp Pension Asset Class
MBPAC.....	MBS Pension Asset Class
HYPAC .....	High Yield Pension Asset Class
DSPAC .....	Diversified Strategies Pension Asset Class
CPAC.....	Cash Pension Asset Class