

Friday, September 22, 2023, 8:30 a.m.
WSI Board Room (In-Person)
1600 E Century Ave, Bismarck, ND
[Click here to join the meeting](#)

AGENDA

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA - (Board Action)

- A. Pledge of Allegiance
- B. Executive Summary
- C. Welcome New Staff

II. ACCEPTANCE OF MINUTES (August 25, 2023) – (Board Action)

III. EDUCATION (30 minutes) (Information)

- A. Cybersecurity – Jessica Newby, NDIT

IV. INVESTMENTS (60 minutes)

- A. Market Trends & Quarterly Performance Review (Board Action) – Callan

(Break)

V. GOVERNANCE (30 min)

- A. Governance & Policy Review Committee Update (Information) – Dr. Lech, Ms. Murtha
- B. Investment Committee Update (Information) – Treasurer Beadle, Mr. Anderson
- C. Securities Litigation Committee Update (Information) – Commissioner Heringer, Ms. Murtha

VI. Quarterly Monitoring Reports (30 minutes) – (Board Action)

- A. Annual Technology Report – Michele Blumhagen, NDIT
- B. Quarterly TFFR Ends – Mr. Roberts
- C. Executive Limitations/Staff Relations – Ms. Murtha

VII. OTHER

Next Meetings:

SIB GPR – October 12, 2023, at 10:00 a.m.

Investment Committee – October 23, 2023, at 9:00 a.m.

SIB Meeting – October 26, 2023, at 1:00 p.m.

VIII. ADJOURNMENT

EXECUTIVE SUMMARY

SIB Regular Meeting

September 22, 2023 – 8:30am CT

- I. **Agenda:** The September Board Meeting will be held at the WSI Board Room to accommodate in person attendance; however, a link will also be provided so that Board members and other attendees may join via video conference. The board member video link is included in the email with the Board materials.
 - Attendees are invited to join the Board Chair in the Pledge of Allegiance.
 - Welcome new staff members.
- II. **Minutes (Board Action):** The August 25, 2023, Board meeting minutes are included for review and approval.
- III. **A. Board Education – Cybersecurity (Information):** Ms. Newby from NDIT will provide a presentation on cybersecurity efforts led by NDIT for the State and RIO. As a NDIT unified agency RIO receives technology service support from NDIT.
- IV. **A. Market Trends and Quarterly Performance Review (Board Action):** Representatives from Callan will review the quarterly investment performance of funds under management.
- V. **A. Governance & Policy Review Committee (Information):** The Committee Chair and Ms. Murtha will provide the Board an update on recent committee activities.
 - B. Investment Committee (Information):** The Committee Chair and Mr. Anderson will provide the Board an update on recent committee activities.
 - C. Securities Litigation Committee (Information):** The Committee Chair and Ms. Murtha will provide the Board an update on recent committee activities.
- VI. **A-C. Reports (Board Action):** Staff will provide monitoring reports for annual technology activities, quarterly TFFR Ends and executive limitations/ staff relations.

Adjournment.

**NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
AUGUST 25, 2023, BOARD MEETING (IN-PERSON)**

MEMBERS PRESENT: Dr. Rob Lech, TFFR Board, Vice Chair
Thomas Beadle, State Treasurer, Parliamentarian
Joseph Heringer, Commissioner of Univ. & School Lands
Pete Jahner, Investment Professional
Sen. Jerry Klein, LBSFAB
Cody Mickelson, TFFR Board
Adam Miller, PERS Board
Dr. Prodosh Simlai, Investment Professional
Susan Sisk, Director of OMB
Art Thompson, Director of WSI
Mona Tedford-Rindy, PERS Board

MEMBER ABSENT: Rep. Glenn Bosch, LBSFAB
Tammy Miller, Lt. Governor, Chair

STAFF PRESENT: Scott Anderson, CIO
Eric Chin, Deputy CIO
Derek Dukart, Investment Officer
Rachel Kmetz, Accounting Mgr.
Missy Kopp, Exec. Assistant
George Moss, Sr. Investment Officer
Sarah Mudder, Communications/Outreach Dir.
Jan Murtha, Exec. Dir.
Ann Nagel, Retirement Accountant
Matt Posch, Sr. Investment Officer
Emmalee Riegler, Procurement/Records Coord.
Chad Roberts, DED/CRO
Mike Schmitcke, Sr. Investment Accountant
Sara Seiler, Internal Audit Supvr.
Ryan Skor, CFO/COO
Dottie Thorsen, Internal Auditor
Nitin Vaidya, Chief Risk Officer
Tami Volkert, Compliance Spec.
Susan Walcker, Sr. Financial Accountant
Jason Yu, Risk Officer
Lance Zietlow, Sr. Investment Officer

GUESTS: Alex Browning, Callan
Matt Clark, SD State Investment Officer
Dean DePountis, Attorney General's Office
Candace Johnson, Securities Commission
Scott Miller, PERS
Members of the Public

CALL TO ORDER:

Dr. Lech, Vice Chair, called the State Investment Board (SIB) regular meeting to order at 8:30 a.m. on Friday, August 25, 2023. The meeting was held in the Workforce Safety and Insurance Board Room, 1600 E Century Ave., Bismarck, ND.

The following members were present representing a quorum: Treasurer Beadle, Commissioner Heringer, Mr. Jahner, Sen. Klein, Dr. Lech, Mr. Mickelson, Mr. Miller, Ms. Rindy, Dr. Simlai, Ms. Sisk, and Mr. Thompson.

ACCEPTANCE OF AGENDA:

The Board considered the agenda for the August 25, 2023, meeting.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. THOMPSON AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA AS DISTRIBUTED.

AYES: COMMISSIONER HERINGER, TREASURER BEADLE, MR. MILLER, MS. SISK, MR. THOMPSON, DR. SIMLAI, MR. BURTON, SEN. KLEIN, MS. RINDY AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH, MR. JAHNER, AND LT. GOV. MILLER

MOTION CARRIED

Ms. Murtha introduced new Board member Dr. Prodosh Simlai.

MINUTES:

The Board considered the minutes of the July 21, 2023, SIB meeting.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MS. SISK AND CARRIED BY A VOICE VOTE TO APPROVE THE JULY 21, 2023, MINUTES AS DISTRIBUTED.

AYES: MR. BURTON, COMMISSIONER HERINGER, MS. RINDY, MR. THOMPSON, TREASURER BEADLE, MS. SISK, SEN. KLEIN, MR. MILLER, DR. SIMLAI, AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH, MR. JAHNER, AND LT. GOV. MILLER

MOTION CARRIED

EDUCATION:

Development of SD Investment Program:

Mr. Matt Clark, SD State Investment Officer, provided information about the implementation of the SD investment program. Mr. Clark provided an overview of their program goals, processes, talent management, and long-term value measures. Board discussion followed.

Mr. Jahner joined the meeting at 9:08 a.m.

Ms. Murtha introduced new Board member Mr. Pete Jahner.

INVESTMENTS:

Summary of Investment Strategies:

Mr. Anderson, Mr. Vaidya, Mr. Chin, Mr. Zietlow, and Mr. Moss provided an overview of the overall investment strategies. These strategies have been presented to the Investment Committee throughout the year. In the near future staff will present the new internal direct investment program strategy. Board discussion followed.

The Board recessed at 11:09 a.m. and reconvened at 11:21 a.m.

Benchmark/Hurdle Rate Consultant Approval:

IT WAS MOVED BY MS. SISK AND SECONDED BY MR. THOMPSON AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.2 AND 44-04-18.4(6)(b) TO DISCUSS EXEMPT PROPOSAL PROCUREMENT INFORMATION DURING A COMPETITIVE BIDDING PROCESS.

AYES: SEN. KLEIN, COMMISSIONER HERINGER, DR. SIMLAI, MS. SISK, MS. RINDY, MR. BURTON, MR. MILLER, TREASURER BEADLE, MR. JAHNER, MR. THOMPSON, AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH AND LT. GOV. MILLER

MOTION CARRIED

The executive session started at 11:24 a.m. and ended at 11:35 a.m. The session was attended by Board members, RIO staff, and Mr. DePountis.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY COMMISSIONER HERINGER AND CARRIED BY A ROLL CALL VOTE TO PROCEED WITH CONTRACT NEGOTIATION FOR A BENCHMARK/HURDLE RATE CONSULTANT WITH THE BIDDER MOST SUCEPTIBLE TO AWARD.

AYES: TRESURER BEADLE, MR. JAHNER, MR. THOMPSON, COMMISSIONER HERINGER, MS. RINDY, DR. SIMLAI, MR. MILLER, MS. SISK, SEN. KLEIN, MR. BURTON, AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH AND LT. GOV. MILLER

MOTION CARRIED

GOVERNANCE:

Governance & Policy Review (GPR) Committee Update:

Dr. Lech provided an update from the August 24, 2023, GPR meeting. The Committee discussed a workplan for reviewing the SIB Governance Manual. The Committee discussed the current governance model. The Committee may explore and compare governance models in the future. Board discussion followed.

IT WAS MOVED BY MR. THOMPSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A VOICE VOTE TO ACCEPT THE GPR COMMITTEE UPDATE.

AYES: MS. RINDY, MR. MILLER, SEN. KLEIN, MR. BURTON, MR. JAHNER, MS. SISK, MR. THOMPSON, DR. SIMLAI, COMMISSIONER HERINGER, TREASURER BEADLE, AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH AND LT. GOV. MILLER

MOTION CARRIED

Investment Committee (IC) Update:

Treasurer Beadle provided an update from the August 11, 2023, IC meeting. The IC heard presentations from the Benchmark/Hurdle Rate consultant finalists and agreed on a recommendation to bring to the Board. The IC received information on investment technology strategy and potential cost, reviewed the timber portfolio, and discussed a commitment of capital to Altor. Board discussion followed.

Executive Review and Compensation Committee (ERCC) Update:

Dr. Lech provided an update from the August meetings of the ERCC. The Committee met on August 3, 2023, to hear presentations from the Comprehensive Compensation Study RFP finalists. The Committee decided to request a best and final offer (BAFO) from the finalists. The Committee met on August 24, 2023, to review the

updated scores and to begin contract negotiations with the entity most susceptible to award. Board discussion followed.

QUARTERLY MONITORING REPORTS:

Quarterly and Annual Audit Activities:

Ms. Seiler provided the 2022-23 Fiscal Year End Audit Committee Report. The report provided an overview of audits and other activities undertaken by staff and the Audit Committee. Ms. Seiler also provided the quarterly Internal Audit (IA) report for the quarter ended June 30, 2023. Board discussion followed.

Quarterly Budget/Fiscal Conditions:

Mr. Skor provided the quarterly Budget/Financial Report for the quarter ended June 30, 2023. The report included a budget appropriation status, expenditure summary, pension administration system modernization project status, and investment expenditure details. Board discussion followed.

Executive Limitations/Staff Relations:

Ms. Murtha reviewed Board member changes and an overview of the new member onboarding held on August 2, 2023. After filling the new Sr. Investment Accountant position internally, the vacated Investment Accountant position has been posted and interviews are scheduled. An offer has been accepted by a candidate for the new Fiscal/Investment Administrative Assistant with a start date in September. The Retirement Accountant position has been posted and interviews will be schedule in the beginning of September. Ms. Murtha reviewed current projects, staff presentations, and ED education and travel activities. Board discussion followed.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. MILLER AND CARRIED BY A VOICE VOTE TO ACCEPT THE QUARTERLY AND ANNUAL AUDIT, QUARTERLY BUDGET/FISCAL CONDITIONS, AND EXECUTIVE LIMITATIONS/STAFF RELATIONS REPORTS.

AYES: SEN. KLEIN, MS. SISK, COMMISSIONER HERINGER, MR. MILLER, TREASURER BEADLE, DR. SIMLAI, MR. BURTON, MR. JAHNER, MR. THOMPSON, MS. RINDY, AND DR. LECH

NAYS: NONE

ABSENT: REP. BOSCH AND LT. GOV. MILLER

MOTION CARRIED

ADJOURNMENT:

With no further business to come before the SIB, Dr. Lech adjourned the meeting at 11:56 a.m.

Prepared by: Missy Kopp, Assistant to the Board



CYBERSECURITY

Jessica Newby

Governance and Compliance Team Lead

NORTH
Dakota

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Cyber Operations Center

Analysis and Response

- Incident Response
- Forensics
- Malware Analysis

Active Defense

- Penetration testing
- Threat Intelligence
- Exploitation Analysis

Security Infrastructure

- Endpoint Protect
- Network Detection
- Vulnerability Management

CYBER SECURITY TEAM

Governance, Risk and Compliance

- Cyber Risk Management
- Policy/Procedure/Standards
- Compliance with Federal and Industry Regulation
- Information Security Officer Liaisons

Education and Public Awareness

- Develops Defend.ND.gov
- Outreach to classrooms and business communities
- Works with EduTech to support PK-20W initiative
- Builds a community and culture around cybersecurity in North Dakota

THREATS AND CONCERNS: RANSOMWARE

RANSOMWARE AFFECTED PHILADELPHIA SEPTA TRANSPORT PAYROLL, TIME KEEPING & REAL-TIME SCHEDULE SYSTEM

University of Utah hit by ransomware, pays \$457K ransom

Nearly 1,000 Organizations, 60 Million Individuals Impacted by MOVEit Hack

Gosnell schools hit with

Cyber-Attack Downs Alabama County's Network

Cooke County in Texas apparently hit by ga REvil ransomware

Texas Takes Second Ransomware Hit

DoppelPaymer Ransomware hits Los Angeles County city, leaks

City of Clean Computers HIT WITH RANSOMWARE

Cyber Attack Reported In Bluffton, South

Ransomware attack hits Champaign-Urbana Public Health District

are Strikes Third IIS College in a Week

A Cyberattack Shuts Down MGM Resorts In Las Vegas

Ransom Data breach follows attack

Louisiana's governor declared a state of emergency of cybersecurity attack on government servers

Uber suffers major cyber attack

School's out as ransomware attack downs IT systems

Town of Colonie got hacked; looks to avoid paying ransomware demand about \$400,000

Racine Mayor Refuses to Pay Cyber-Ransom

County's Computers Still Down Nine Days After

PBVSD ransomware attack will delay report cards

Ransomware Attack

e Attack, Florida

Redcar cyber-attack: Council using pen and paper

22 Texas TOWNS HIT WITH Ransomware Takes Out Durham, North Carolina

City Agrees to Pay Hackers \$600,000

Mississippi City Operations Disrupted by Ransomware Attack

North Miami Beach Police Department Hit With Ransomware Attack

Ransomware attack responsible for La Salle County technology issues

Hackers Are Holding Baltimore

600 Computers Taken Down After Florida Library Cyberattack

Second Florida city pays giant ransom to ransomware gang in a week

Hostage: How They Stru

What's Next

Ransomware Attack Disrupts Health

North ISD Hacked, Joining

Cyber-Attack Makes Pennsylvania Students Learn "Old School" Style

Hackers demand Mic

Care Services in at Least Three States

Texas Schools, Towns Hi

mware Attacks

ancels classes at Thre

ITI Technical College latest victim of ransom \$10K in bitcoin

Texas attack: Garrison, Nacogdoches schools hit

South Adams Schools hit with ransomware cyber-attack

ware

RANSOMWARE / EXTORTION ATTACKS

- The global threat of ransomware
 - Since 2016, over 4,000 ransomware attacks have happened daily in the U.S. (Justice Dept)
 - 37% of respondents' organizations were affected by ransomware attacks in the last year (Sophos, 2021)
 - In 2021, the largest ransomware payout was made by an insurance company at \$40M, setting a world record (Business Insider, 2021)

RANSOMWARE / EXTORTION ATTACKS

- SLTT/Government
 - In 2020, 33% of attacks on governmental bodies were ransomware (Security Intelligence, 2020)
 - A ransomware attack against a Southern city in 2020 cost over \$7M (MSSPAAlert, 2020)
 - A ransomware attack struck an East coast city in 2019 and caused a loss of over \$18M (Baltimore Sun, 2019)
 - In 2019, attacks against municipalities increased 60% from the year before (Kaspersky Labs, 2019)

RANSOMWARE / EXTORTION ATTACKS

- Things will likely get worse.
 - Driven by organized crime
 - Well-developed monetary ecosystem around these attacks
 - Every successful attack gives ransomware groups bigger budgets
 - Bigger budgets means more of an ability to develop or buy better exploits and tools

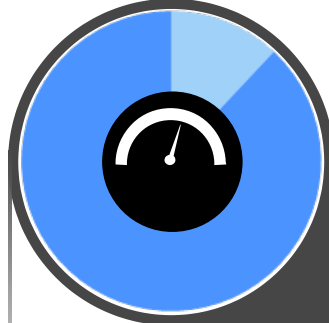
NORTH DAKOTA THREAT LANDSCAPE

North Dakota prevents/detects over 4.5 Billion threats¹ on STAGEnet per year, including external threats from:

- Nation states
- Corporate espionage
- Organized crime syndicates

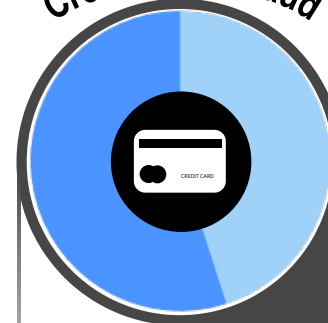
Vast majority of attacks are managed through automated defenses, however ~50k cyber events² were handled by the team

Phishing



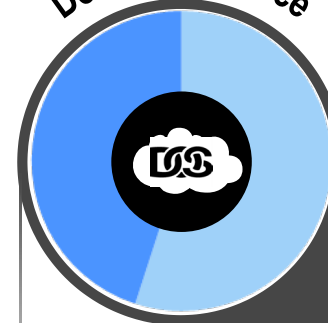
~80% of all inbound email volume is SPAM or phishing

Credit Card Fraud



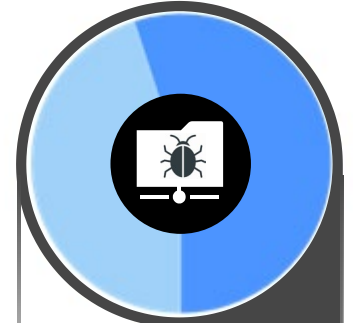
Multiple agencies have been victim of credit card stuffing attempts

Denial of Service



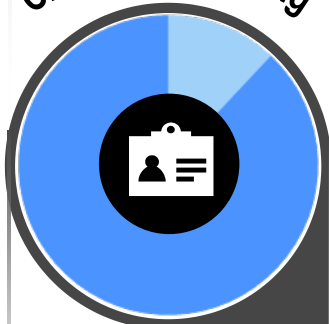
DDoS attacks are up 341% globally since start of pandemic³

Malware



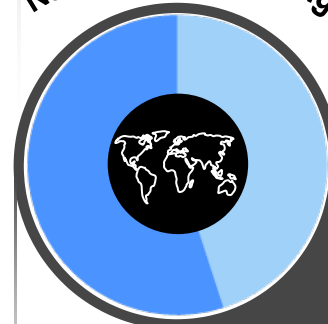
Viruses, worms, Trojans, ransomware, and cryptominers

Credential Stuffing



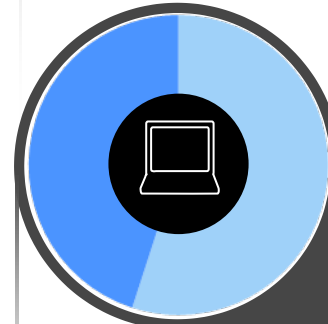
Dark web monitoring detected more than 5,000 total leaks of state employees in 2021

Nation State Hacking



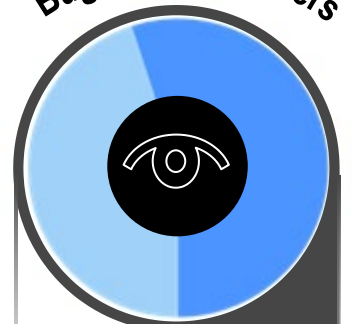
Use zero-day techniques that interrupt operations and generate massive data and revenue loss

Botnets



Allows attacker to amplify attacks and are a staple of ransomware

Bug Bounty Hunters



Look for vulnerabilities for profit, fame, or sometimes to exploit vulnerable systems

1. 4,519,962,807 threat log events from 01/01/2021 – 12/31/2021 per NDIT Panorama
2. 49,775 XSOAR Incidents created between 01/01/21 – 12/31/2021 per Cortex XSOAR
3. DDoS attacks increase 341% amid pandemic - Help Net Security

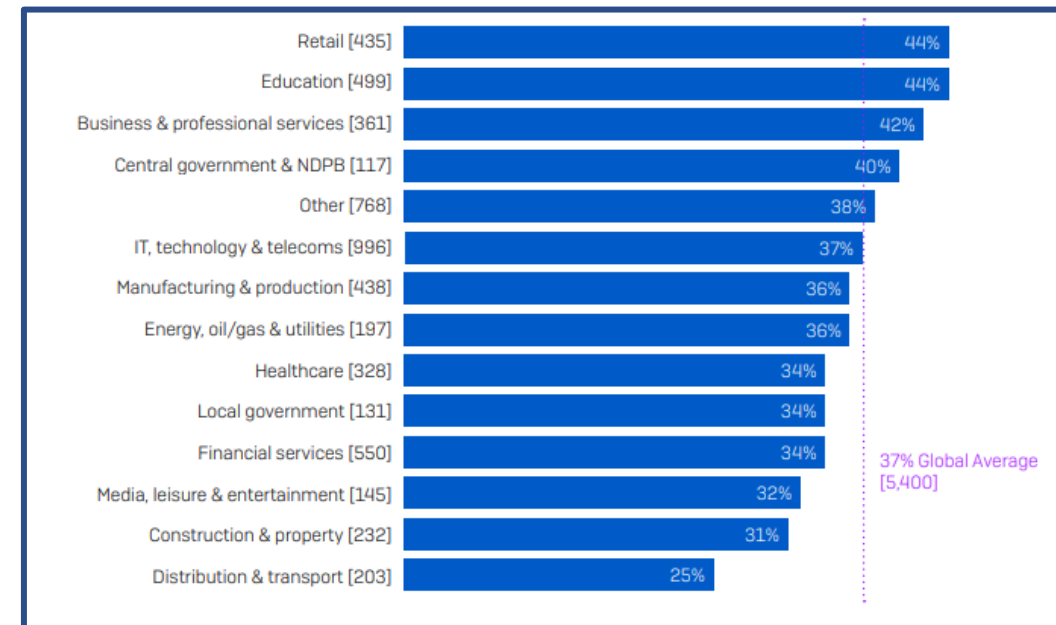
AVERAGE COST OF RANSOMWARE

Potential massive cost to North Dakota as a whole

- The inherent risk to the state from ransomware is \$877,101,000 per biennium
- Ransomware remediation has more than doubled since last year
- Extortion style attacks have more than doubled since last year
- Having tools deployed, governance, polices, and trained security teams, reduces risk



Ransomware Remediation Cost
Has More Than Doubled Since Last Year



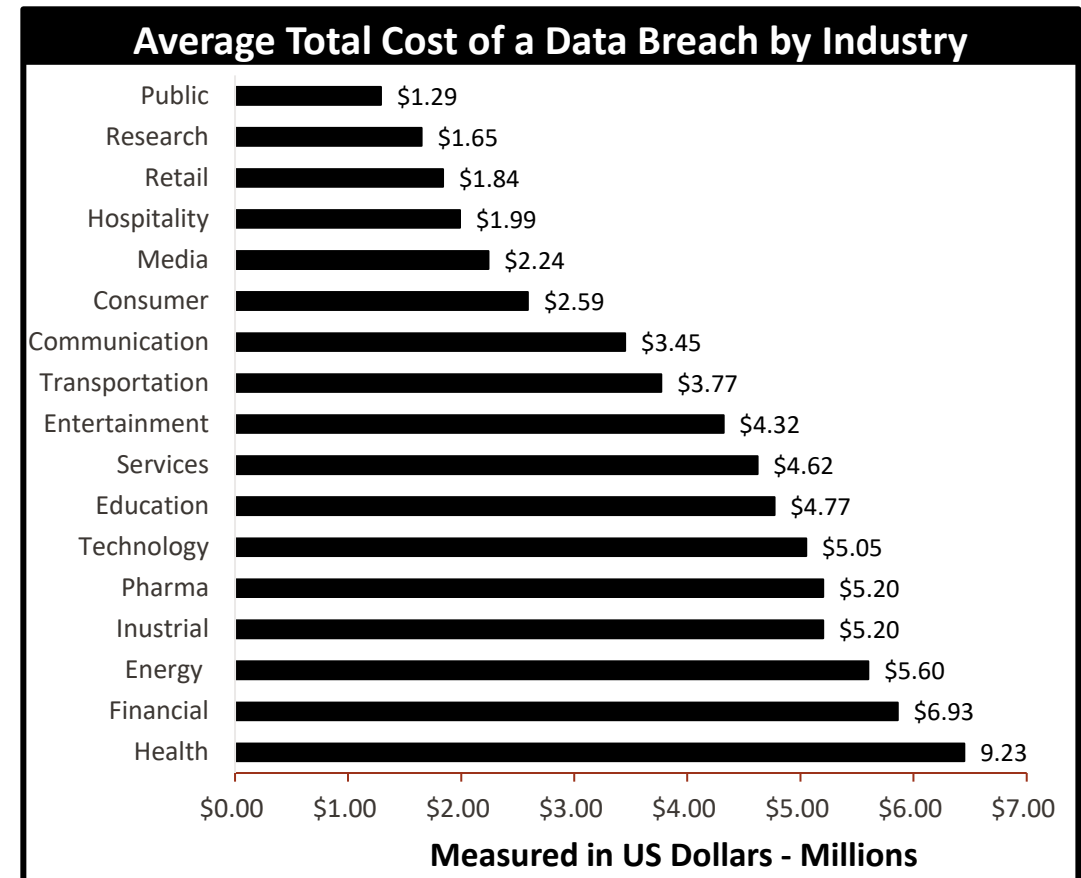
See appendix for calculations

[sophos-state-of-ransomware-2021-wp.pdf](#)

AVERAGE ANNUAL COST OF A SECURITY BREACH

Average cost of security breach

- IBM/Ponemon Institute places the average cost of \$4.37 million per year
- Healthcare breaches average \$9.23 million*
- Personal records tend to be the most compromised data types while databases tend to be the most frequently involved asset in breaches



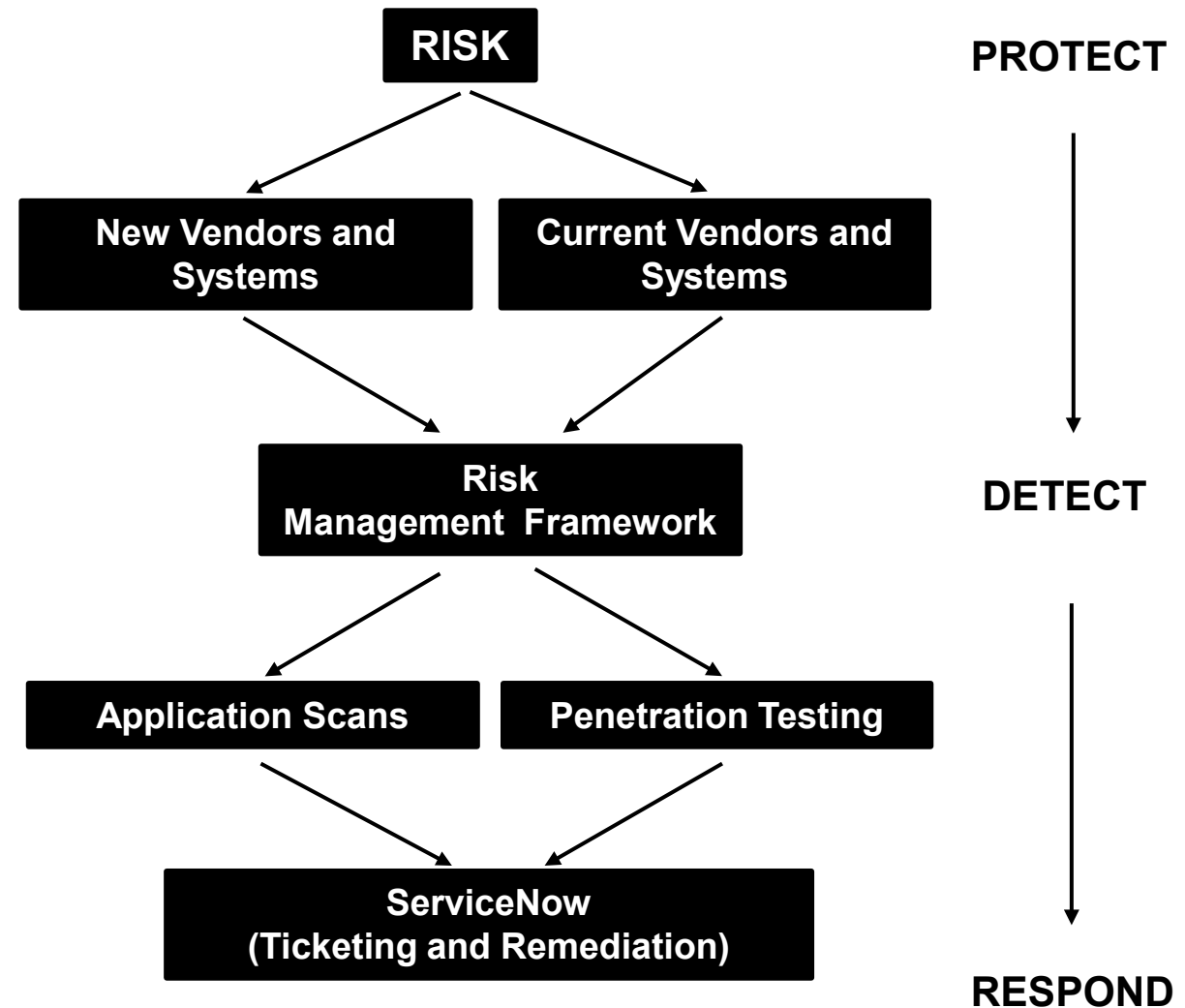
* The Average Cost of a Healthcare Data Breach is Now \$9.42 Million (hipajournal.com)

* Cost of a Data Breach Report 2021 | IBM

REDUCING RISK

Reducing Risk

- **Risk Management Framework (RMF)**
 - Preventing risk to systems by building a risk reduction lifecycle from beginning to end
- **Third Party Risk Management (TPRM)**
 - Preventing risk by evaluating and monitoring risk introduced by vendors



THIRD PARTY RISK MANAGEMENT

Primary Purpose

Third Party Risk Management (TPRM) in IT is to assess, monitor, and mitigate the potential risks associated with the use of third-party vendors, suppliers, or service providers in an organization's information technology ecosystem.

Why is it important?

- Mitigate undue risk and cost associated with third-party breaches
- Safeguard and protect ND citizen data

THIRD PARTY RISK MANAGEMENT

- TPRM / ND-RAMP is assessing security controls for potential or existing vendor(s) of an IT solution and/or host State data
- Third-party risk management (TPRM) focuses on identifying and reducing risks relating to the use of third parties' vendors
- Vendors who complete and pass their assessments will become "ND-RAMP" certified and will be reassessed every 1-2 years based on risk of vendor and/or type of data they will handle.
 - Vendors could be reassessed sooner if:
 - A security breach has occurred
 - The vendor does not comply with the State requirements of contracting for cloud services
 - Significant changes in security policies, controls, or architecture have occurred

TPRM STAGES

WORKFLOW



DATA CLASSIFICATION

Data Classifications		
Low Risk	Moderate Risk	High Risk
<ol style="list-style-type: none">1. The data is intended for public disclosure.2. Unauthorized disclosure, alteration, or destruction of the data would result in little or no risk to the state and its citizens.	<ol style="list-style-type: none">1. The data is not generally available to the public.2. Unauthorized disclosure, alteration, or destruction of the data could result in a moderate level of risk to the state or its citizens.	<ol style="list-style-type: none">1. The data requires protection by law/regulation.2. Unauthorized disclosure, alteration, or destruction of the data could cause a significant level of risk to the state or its citizens.

DATA CLASSIFICATION

Activity / Classification	Low Risk	Moderate Risk	High Risk
Data Access and Handling Controls			
User Access – Authentication	No authentication needed	Must use NDGOV accounts only	Must use NDGOV accounts with Multi-Factor Authentication (MFA)
Access Audit	n/a	Role-based	Required
End User Training	n/a	Role-based	Required
Data Sharing	n/a	Require data steward approval	Restricted; Require data steward approval
Data Transmission and Communication Controls			
Sent in Email	n/a	Include a disclaimer	Must be encrypted, consider secure alternative
Internal Network Transmission	n/a	Consider encryption	Must be encrypted
External Network Transmission	n/a	Consider encryption	Must be encrypted
Access from External Network	n/a	Must use VPN	Must use MFA VPN
Spoken/Verbal Communication	n/a	Consider confidential use of landlines or secure communication apps	Require confidential use of landlines or secure communication apps
Fax	n/a	Consider encryption	Encrypt, consider secure alternative

HOUSE BILL 1528

Primary Purpose:

- Mitigate risk of loss or deletion of state records due to the departure of agency heads or the unexpected departure of personnel holding a supervisory position or above.
- Highlights:
 - Updates the definition of a state record to specifically include electronic mail if it provides administrative, fiscal, legal, audit, historical or business value.
 - Establishes a minimum 1-year retention on email for agency heads, elected officials, and those appointed by the Governor to fill a cabinet vacancy under NDCC 44-02.

HOUSE BILL 1528

- Highlights:
 - For an employee who holds a supervisory position or above, the employee account must be put on hold if:
 - The employee is involuntarily terminated
 - The employee is placed on administrative leave
 - The employee resigns or departs without notice
 - The employee dies
 - An event the agency deems sufficient to place a hold occurs
 - NDIT conducted training on the requirements for all designated agency record coordinators

INTERNATIONAL TRAVELER GUIDELINES

- International travel can be a risky undertaking. This is especially true for government employees. In addition to physical risks such as theft, loss, and damage of devices, foreign travelers are susceptible to social engineering techniques and a wide range of cyberattacks. Government employees are favorite targets of nation-state hackers and cyber criminals.
- State and personal devices can contain sensitive information, which may be valuable to such actors to sell or to use in intelligence operations. Thus, it is imperative as an employee of the State of North Dakota to exercise due diligence in protecting sensitive data. While travelling abroad, you are responsible for the security of data!

<https://www.ndit.nd.gov/international-traveler-guidelines>

Cybersecurity Guidelines for the INTERNATIONAL TRAVELER

Prior to Departure

- Confirm computer antivirus software is up-to-date
- Back up your personal devices
- Ensure passwords are complex and don't use the same passwords for multiple sites
- Install encrypted text messaging app if texting is needed & remove sensitive data
- Consider using a spare device instead of primary personal equipment
- Manager or agency's HR department should submit ServiceNow incident ticket to the NDIT Governance, Risk and Compliance (GRC) team on your behalf, at **least two weeks prior** to travel

During Travel

- Do NOT trust public Wi-Fi
- Do NOT use texting to send sensitive information
- Consider using an encrypted App
- Be cautious and aware of your surroundings in public spaces
- Avoid using public equipment – such as phones, computers and fax machines – for sensitive communications
- Keep devices in a locked safe or locked suitcase when leaving your hotel room
- Do not draw unnecessary attention to yourself
- Blend in and keep a low profile
- Do not use the same passwords or PIN numbers you use in the United States
- Never use public Wi-Fi to make online purchases or access bank accounts
- Always use a VPN
- Refrain from using social media accounts until you return home

Upon Return

- Wipe all personal devices to remove any malware that may have been placed on your devices

If you traveled abroad for business and had state-owned equipment, contact the security team to investigate your work laptop/devices for threats and malware

North Dakota | Information Technology
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International Traveler Guidelines

INTERNATIONAL TRAVELER GUIDELINES

Before Travel

- Back up your personal devices
- Consider using a burner device and not taking your primary equipment
- Install encrypted text messaging app (e.g., Signal, etc.) for phones if texting is needed
- Remove sensitive data
- Ensure passwords are complex, and do not use the same password for multiple sites
- Confirm antivirus software is up-to-date
- Have your manager or agency's HR department submit a ServiceNow incident ticket to the NDIT Governance, Risk and Compliance (GRC) team on your behalf, at least two weeks prior to travel, indicating:
 - your destination
 - dates of departure and return
 - hotel name(s), address(s), and phone number(s), and
 - which device(s) you will be taking out of the country

NDIT GRC will notify NDIT Cyber Analysis and Response of your travel plans to ensure that you retain access to your device while travelling. Desktop Support will ensure "Always on VPN" is configured on the state-owned device and hard drive is encrypted.

INTERNATIONAL TRAVELER GUIDELINES

During Travel

- Be vigilant about your surroundings and where and how you use your devices. Make sure to keep your devices secure in public places such as airports, hotels and restaurants. Take care that nobody is trying to steal information from you by spying on your device screen while it is in use.
- You are especially vulnerable in locations with public Wi-Fi, including:
 - Internet cafes, coffee shops, bookstores, travel agencies, clinics, libraries, airports and hotels.
 - Do not trust public Wi-Fi
 - Do not use the same passwords or PIN numbers abroad that you use in the United States
 - Never use public Wi-Fi to make online purchases or access bank accounts.
Always use a VPN
 - Avoid using public equipment – such as phones, computers and fax machines – for sensitive communications
 - Keep your device(s) in a locked safe or locked suitcase when leaving your hotel room
 - Refrain from logging into social media accounts
 - Do not draw excessive attention to yourself. Do your best to blend in and keep a low profile
 - Be mindful of what you say and do in public spaces—especially while using your device

INTERNATIONAL TRAVELER GUIDELINES

Upon Return

- Upon return to the United States, wipe all personal devices to remove any malware that may have been placed on your devices.
- If you have traveled abroad for business with state-owned equipment, contact the security team to investigate your work device(s) for threats and malware.

SECURITY AWARENESS TRAINING

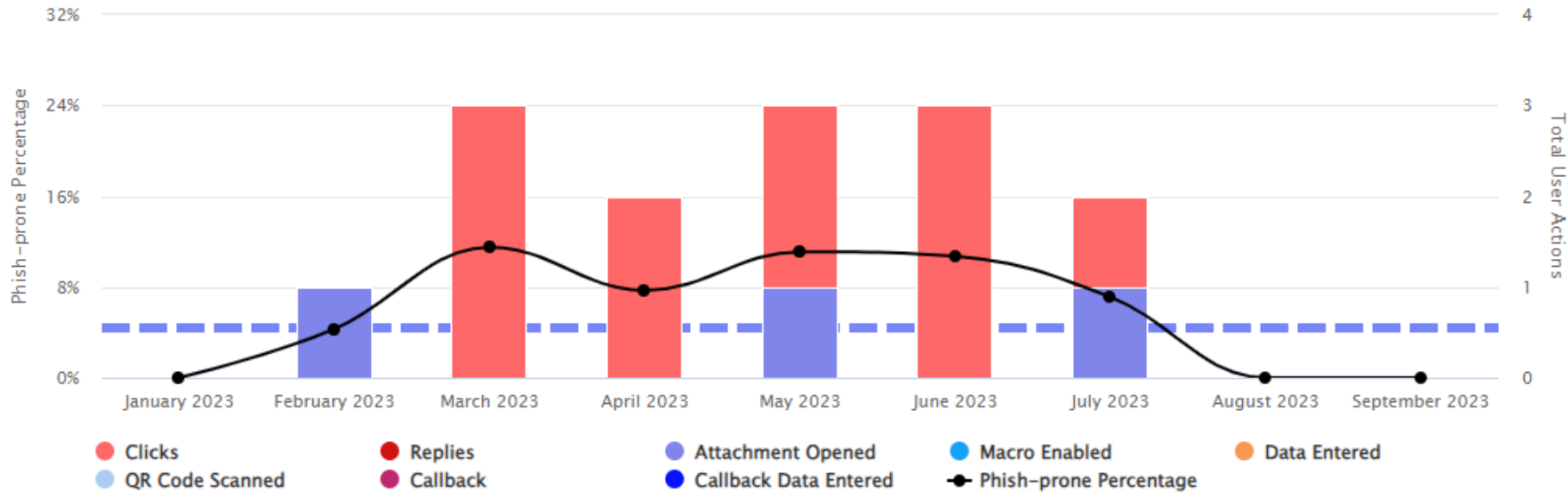
State of North Dakota Standard:

- Provide Information Security Awareness overview on the first day of employment
- Complete Security Awareness Training within three days of receiving computer access
- Complete annual refresher training
- Complete ongoing, brief training quarterly
- Monthly simulated phishing campaigns
 - Users that fail 3 or more simulated phishing campaigns in a 12-month period receive additional training

SECURITY AWARENESS TRAINING

Failure Types

This report displays the number of failure types by campaign for selected users.



Industry Benchmark Data ?

Account Average Phish-prone % **5.5%**

Last Campaign Phish-prone % **0.5%**

Industry Phish-prone % **4.4%**

Industry

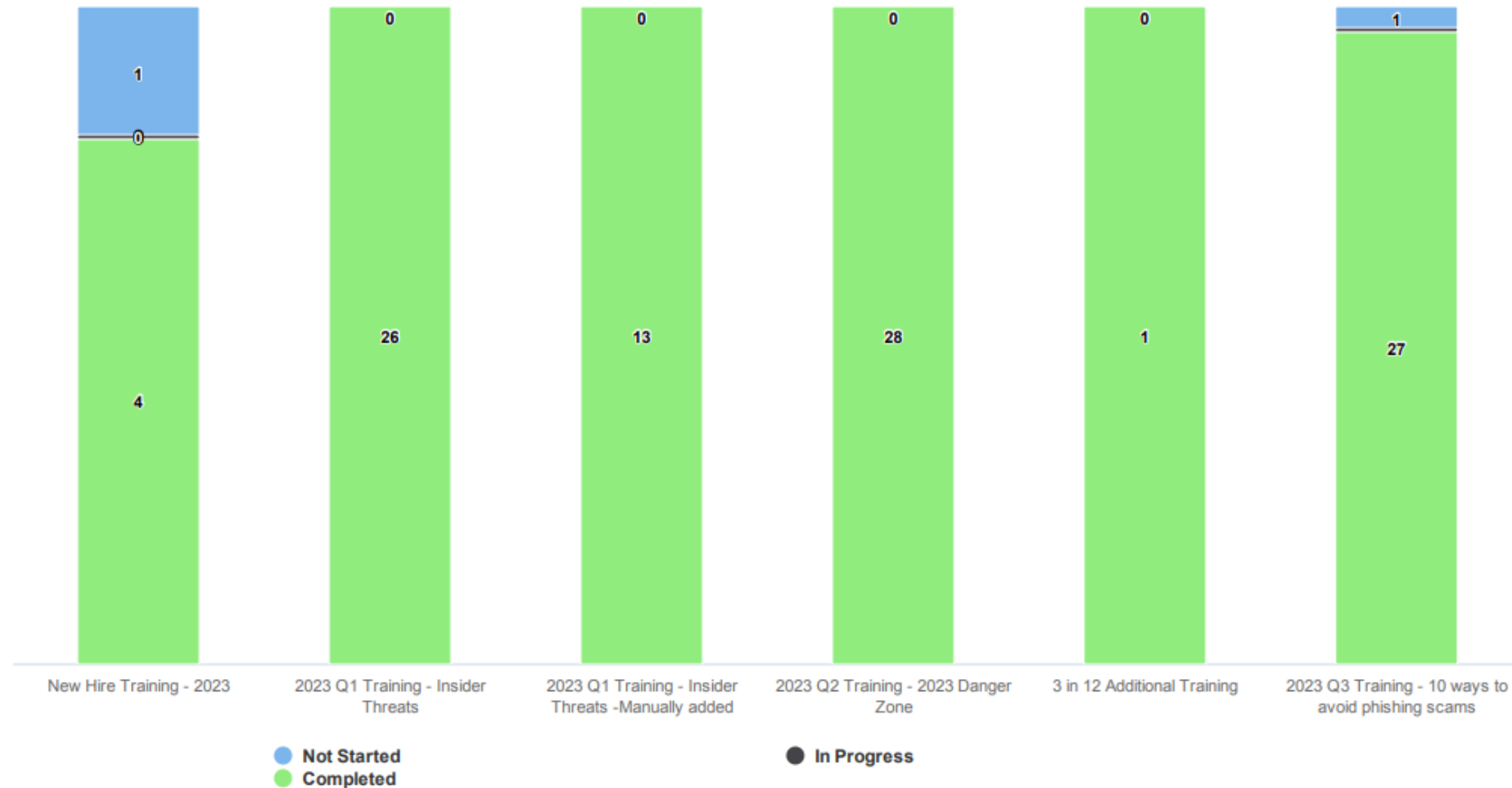
Organization Size

Program Maturity

SECURITY AWARENESS TRAINING

Training Status Overview By Campaign

This report is organized by campaigns and displays the current number of courses that users in the selected group are enrolled in, organized by user training status.



RIO HIGHLIGHTS

- Outside assessment completed pre-unification
 - Walking through recommendations
 - Unification addressed a number of recommendations
 - Meeting regular to discuss implementation of additional recommendations
- Agency is extremely proactive
 - Reaches out when faced with suspicious email
 - Follows compliance requirements and exercises due diligence

ON THE NDIT SECURITY ROAD MAP

- Data Loss Prevention (DLP)
 - The primary purpose of DLP is to prevent the unauthorized disclosure or leakage of sensitive and confidential data from an organization's internal network. DLP solutions are designed to monitor, detect, and protect against the improper use or transmission of sensitive information.
- Artificial Intelligence (AI) Policy Creation
 - The purpose of the Artificial Intelligence (AI) Policy is to embrace the innovative benefits AI can provide to increase productivity and citizen experience, while reducing risks and concerns in using this emerging technology. This policy protects the safety, privacy, and intellectual property rights of the State of North Dakota by ensuring all forms of artificial intelligence are handled in a transparent, consistent, and secure manner.



[WHO WE ARE](#)[CITIZEN LAB](#)[TOP 10 TIPS](#)[PERSONAL ASSESSMENT](#)[RESOURCES](#)

DO YOUR PART.

#BECYBERSMART

YOU CAN BE MORE SECURE ONLINE

Cybercrime is on the rise, especially during COVID-19 and the global shift to telework and e-learning. Bad actors are exploiting the situation, making it especially important to secure all of your devices and online interactions. Virtual vulnerabilities can be an open door for cyber criminals to steal your information, and even your identity. Knowing what the common threats are and how to mitigate them can help make sure you aren't leaving a virtual door open to your personal information.



Security Q&A

Jessica Newby

Governance and Compliance Team Lead

Email: jnewby@nd.gov

Phone: 701-328-4395

CONTACT US

NORTH
Dakota
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Information Technology

Callan



September 2023

North Dakota State Investment Board

Performance Evaluation
as of June 30, 2023

Alex Browning
Senior Vice President

Craig Chaikin, CFA
Senior Vice President

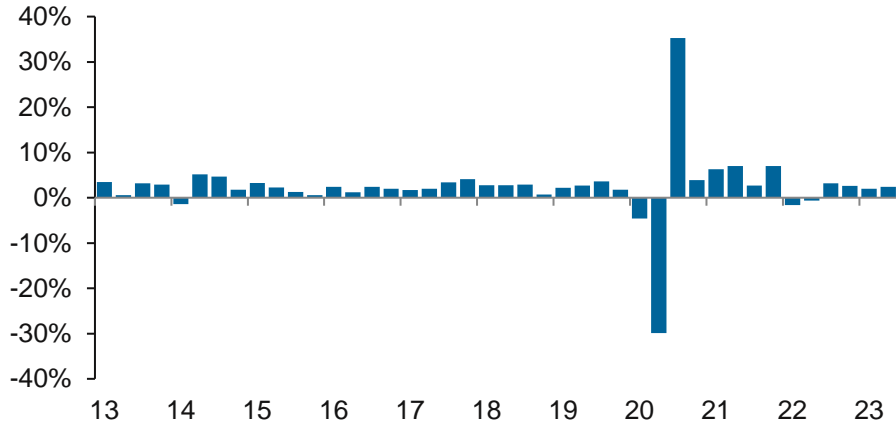
Callan

Market Update

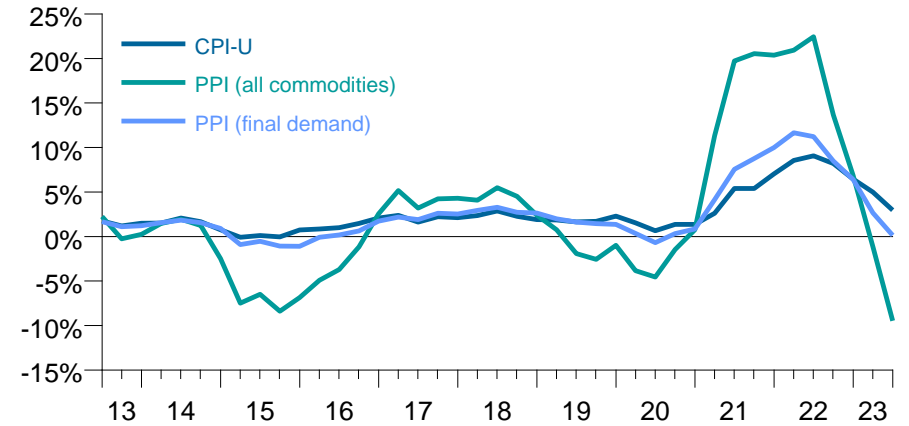
U.S. Economy—Summary

For periods ended 6/30/23

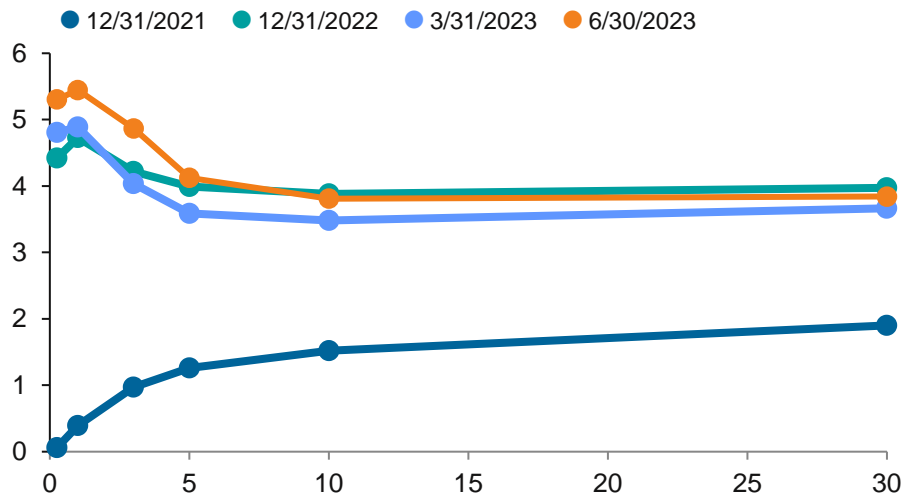
Quarterly Real GDP Growth



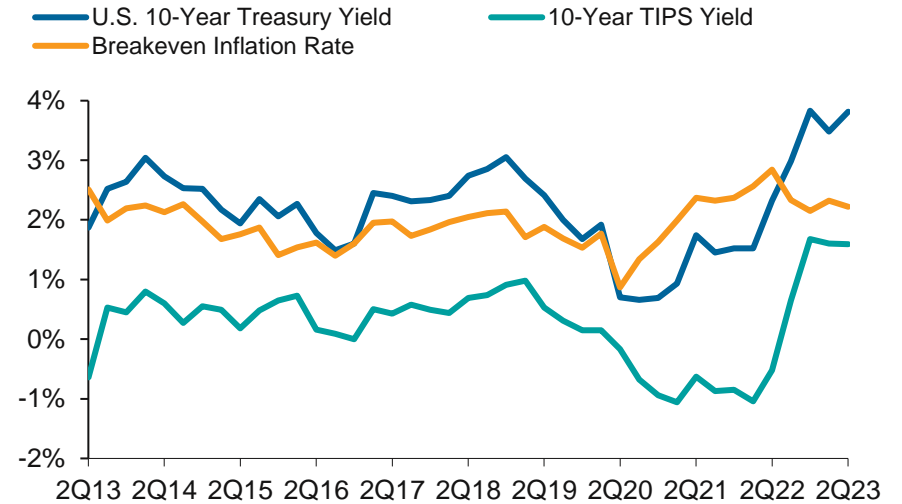
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Historical 10-Year Yields Through 6/30/23



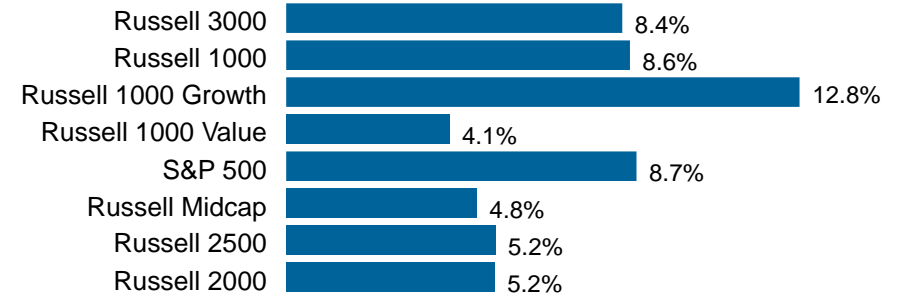
Sources: Bloomberg, Bureau of Labor Statistics, Callan

U.S. Equity Performance: 2Q23

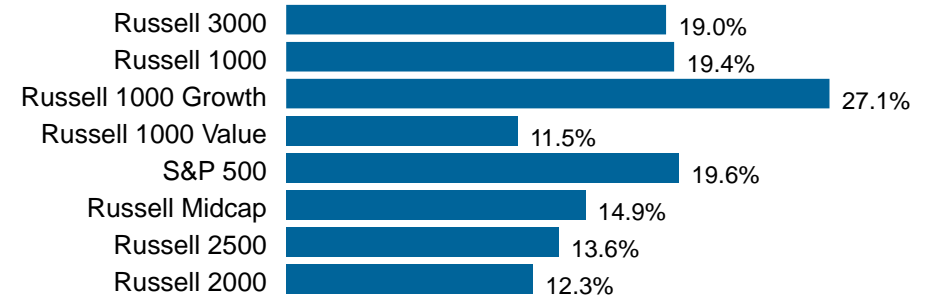
Large cap growth stocks lead broad indices higher; small cap indices continue to lag large caps

- The S&P 500 posted a second straight quarter of positive performance, gaining 8.7%; large cap growth led all styles, advancing 12.8%. All U.S. equity indices produced absolute positive returns; small value and low volatility produced the lowest 2Q returns.
- Nine of the 11 S&P 500 Index sectors produced a positive 2Q return. Information Technology (17.2%), Consumer Discretionary (14.6%), and Communication Services (13.1%) drove the overall index return; all other sectors underperformed the index.
- Similar to the first quarter, small caps (Russell 2000) underperformed large caps (Russell 1000) and growth outperformed value during the quarter, a reversal of trend from 2022. Financials (-1.1%) detracted returns for the Russell 2000 (5.2%) while Health Care was the only small cap sector to produce double digit returns (11.2%) within the small cap index.

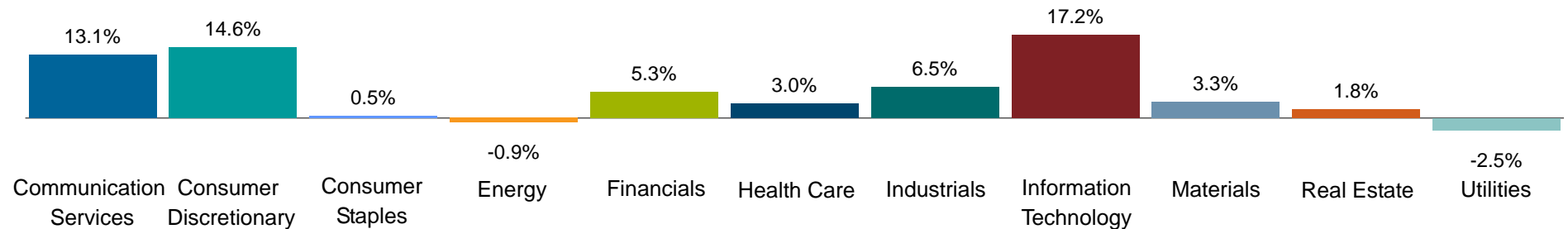
U.S. Equity: Quarter Ended 6/30/23



U.S. Equity: One-Year Returns Ended 6/30/23



Industry Sector Quarterly Performance (S&P 500) as of 6/30/23



Sources: FTSE Russell, S&P Dow Jones Indices

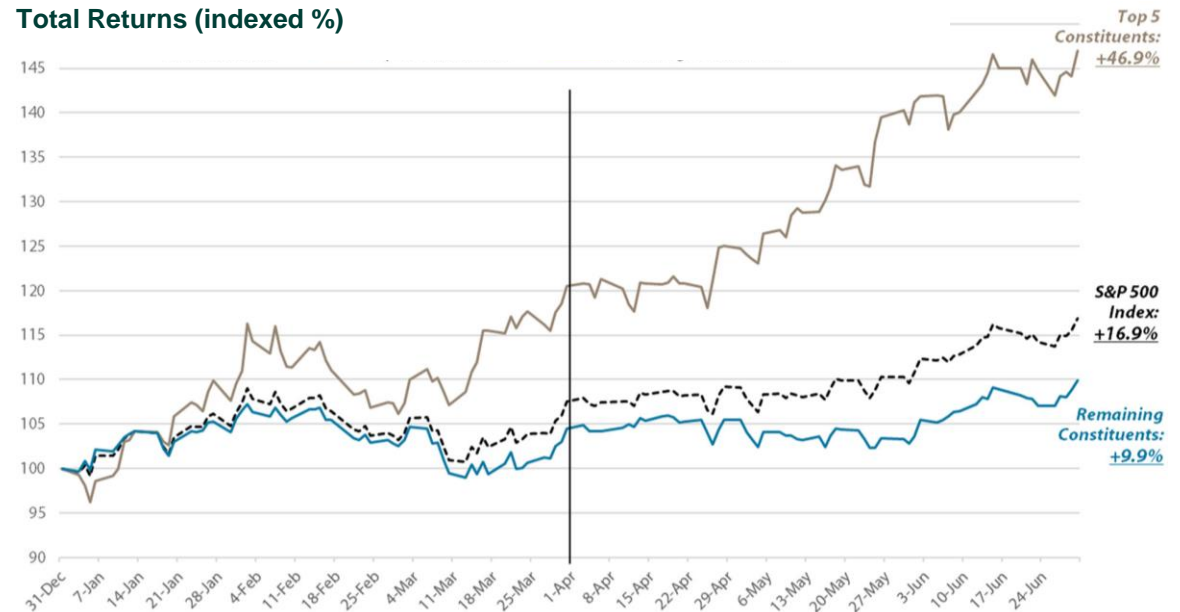
U.S. Equity Overview

Index concentration is a significant 2Q theme

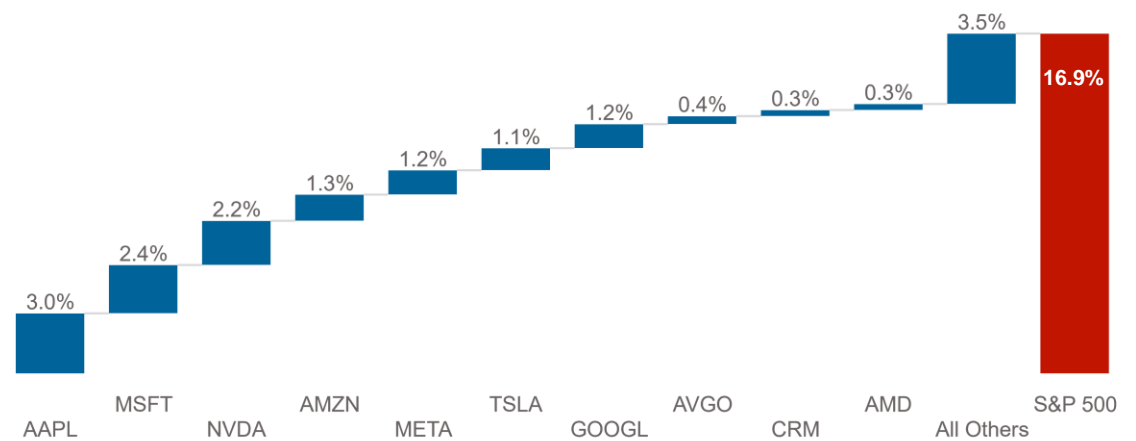
The top chart illustrates the top five S&P 500 Index contributors through 2Q.

- 10 stocks within the S&P 500 Index contributed 80% of the 16.9% return; average appreciation is 82% and an average forward price/earnings ratio of 36x. They account for 32% of the index’s market capitalization.
- 2Q return for the S&P 500 Index was 8.7%; the equal weight S&P 500 Index returned 4%.
- *The YTD return difference is nearly 10%; if this gap holds through year-end, it would be the largest since 1998.*

Total Returns (indexed %)



S&P 500 2023 YTD Return Contribution



Source: Dana Investments and FacSet

U.S. Equity Key Theme

Small cap valuations point to potential opportunity

- Small cap continues to trade at a meaningful discount to its historical valuations; large cap (particularly growth) continues to trade at a premium to its historical valuations.
- Favorable developments in the inflation data could give the more economically sensitive small cap market a boost in performance.
- One recent issue that caused this relative valuation gap is debt; on average, small cap companies have a higher exposure to variable rate debt than large cap counterparts.

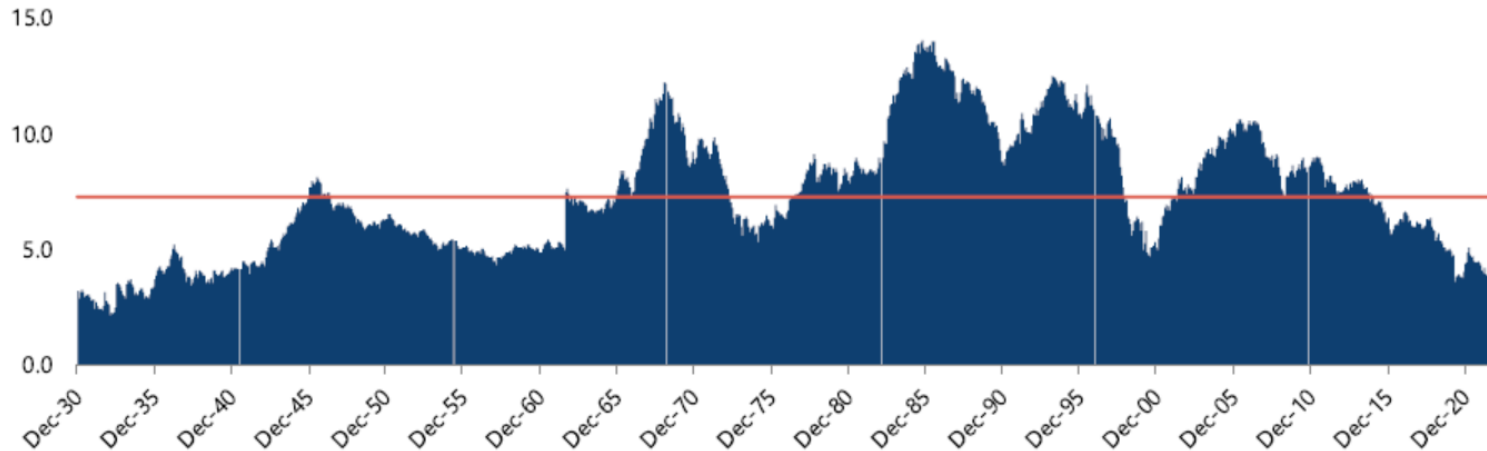
Current P/E vs. 20-year average P/E as of 6/30/23

	Value	Blend	Growth
Large	14.5 / 13.7	19.1 / 15.5	27.0 / 18.7
Mid	14.3 / 14.5	16.4 / 16.4	26.0 / 20.4
Small	14.9 / 16.8	21.2 / 21.4	36.9 / 22.9

Current P/E as percent of 20-year average P/E as of 6/30/23

	Value	Blend	Growth
Large	105.7%	123.1%	144.2%
Mid	98.6%	100.4%	127.6%
Small	89.0%	99.3%	160.9%

Russell 2000 as a % of Total Market



Sources: J.P. Morgan Asset Management and Jefferies

Global/Global ex-U.S. Equity Performance: 2Q23

Continued market rally

2Q23 continued global and global ex-U.S. equity markets positive performance from the prior quarter.

Technology stocks lead markets higher

- The second quarter of the year saw global markets led higher by mega cap technology stocks, in part due to increased optimism around artificial intelligence advancements.
- Market expectations of a recession decreased as inflation showed signs of abating while the Fed kept rates unchanged in June.
- Japan outperformed other regions in local currency as valuations continued to be attractive alongside the Bank of Japan’s easy monetary policy.

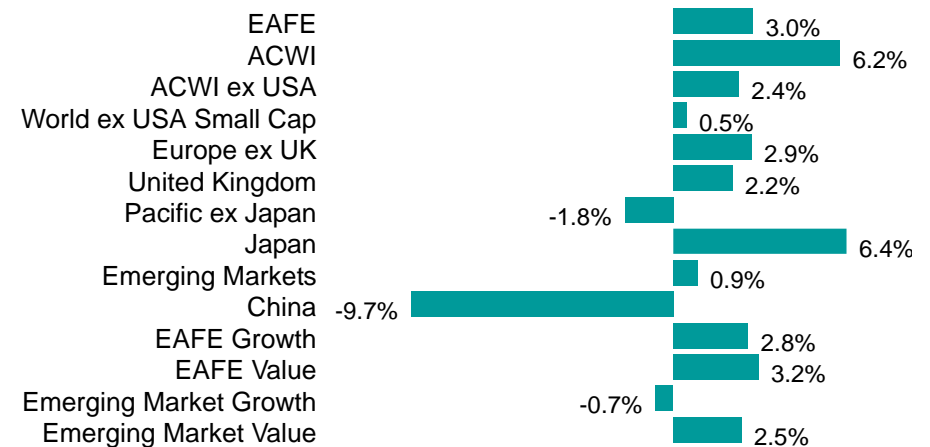
Developed vs. emerging markets

- Developed markets outperformed emerging markets as China weighed on EM indices.

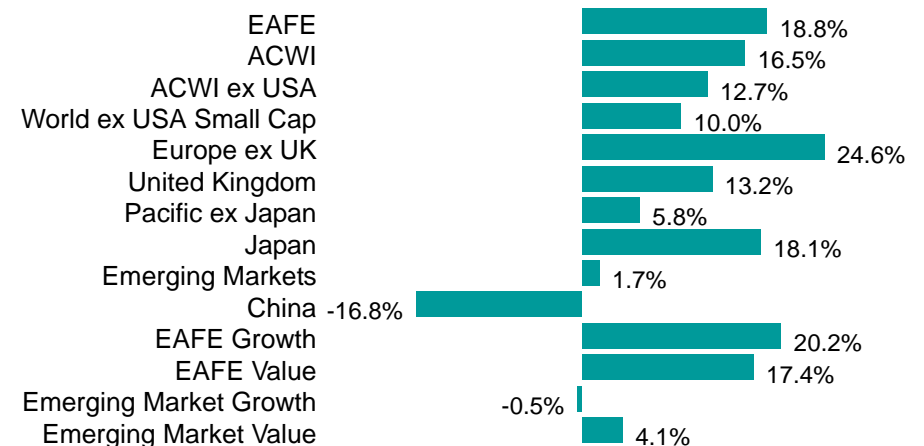
Growth vs. value

- Mega cap technology companies, which are primarily U.S.-based, led markets higher and resulted in large dispersions between U.S. growth and value indices. Outside of the U.S., growth and value index returns were relatively balanced.

Global Equity Returns: Quarter Ended 6/30/23



Global Equity Returns: One Year Ended 6/30/23



Source: MSCI

Global/Global ex-U.S. Equity Key Themes

India and Japan are outshining China

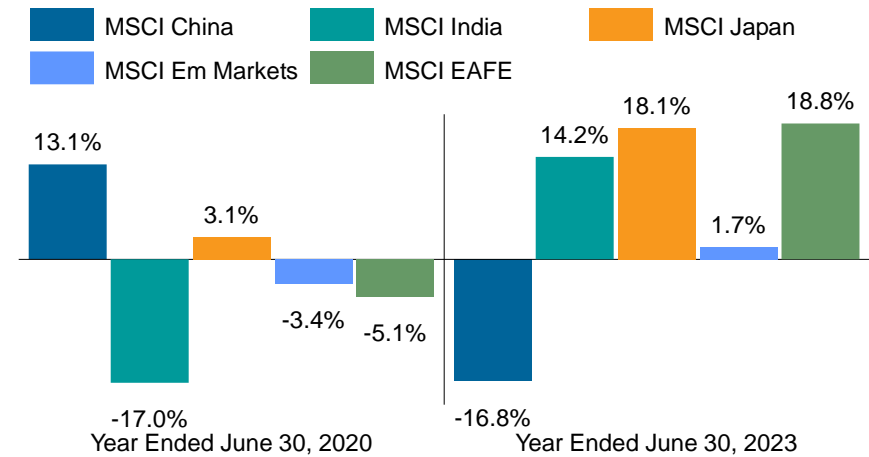
India vs. China

- Economics
 - Chinese geopolitical tensions have, in part, driven outside investment elsewhere contrasted to India with Prime Minister Modi’s visit to the U.S. highlighting its place in the world economy.
 - China’s New Espionage Law (effect. July 2023) likely contributing to less foreign investment; \$20 billion ended 1Q23 versus \$100 billion ended 1Q22.
- Asset flows
 - India’s equity market has more than doubled since 2010.
- Growth
 - India surpassing China with % of population in the middle class in 2030 and from 2023 to 2030 will contribute twice as much growth from this group than China in the Asia Pacific region.

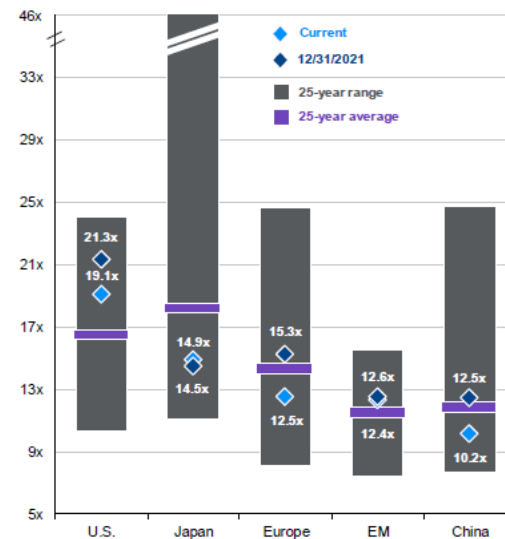
Japan’s turn

- Valuation below historical levels.
- Economic recovery; in the first quarter Japan transitioned out of a recession as GDP grew 2.7%.
- Next 12 months consensus earnings estimates show Japan outpacing China, EM, Europe and only trailing the U.S.

Trailing One-Year Returns



Global Valuations (current and 25-year next 12 months price-to-earnings ratio)



Sources: Wall Street Journal, J.P. Morgan, Capital Group

U.S. Fixed Income Performance: 2Q23

Bloomberg Aggregate down as rates rose, risk appetite and solid economic news spurred returns for spread sectors and lower quality

- Corporate excess return: +131 bps
- Mortgage excess return: +76 bps
- High yield corporates excess return: +279 bps
- AA excess returns: +84 bps
- BBB excess returns: +157 bps

U.S. Treasury yield curve inversion steepened to 106 bps from 58 bps on 3/31

- 2- year UST: 4.87%; 10-year UST: 3.81%

TIPS performed in line with nominal U.S. Treasuries

- Five-year breakeven spreads narrowed to 2.18% from 2.4% on 3/31; Fed and markets expect inflation to trend down over longer periods

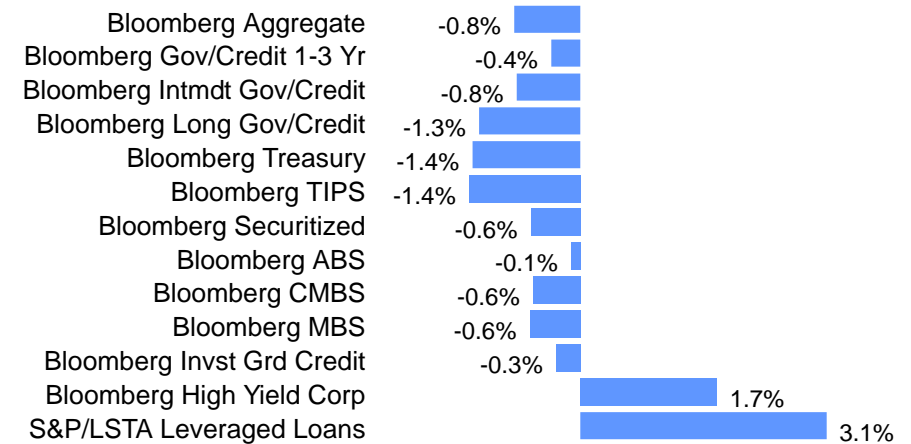
Fed Funds target raised to 5.00% - 5.25%

- Paused at June meeting but suggested that further hikes are likely
- Median expectation from Fed is 5.6% for year-end 2023
- Market expectations are similar at 5.4%; up sharply from expectations for cuts at the end of 1Q

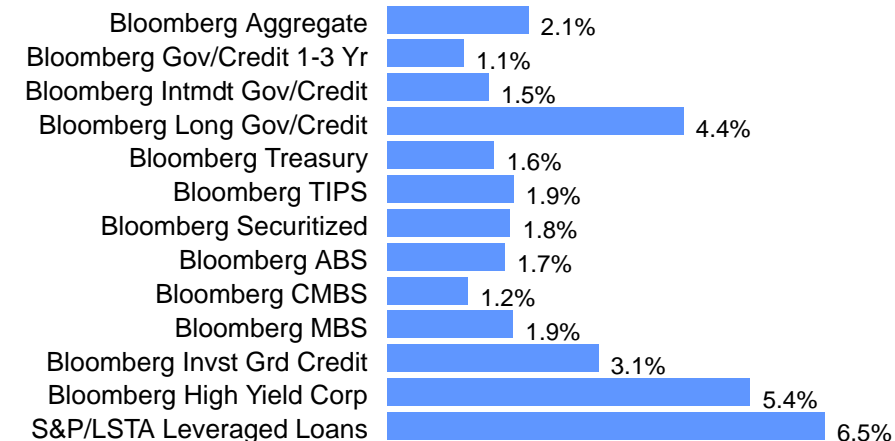
Valuations fair

- Credit spreads have not widened materially and are close to historical averages
- Demand has remained robust with muted issuance

U.S. Fixed Income Returns: Quarter Ended 6/30/23



U.S. Fixed Income Returns: Six Months Ended 6/30/23

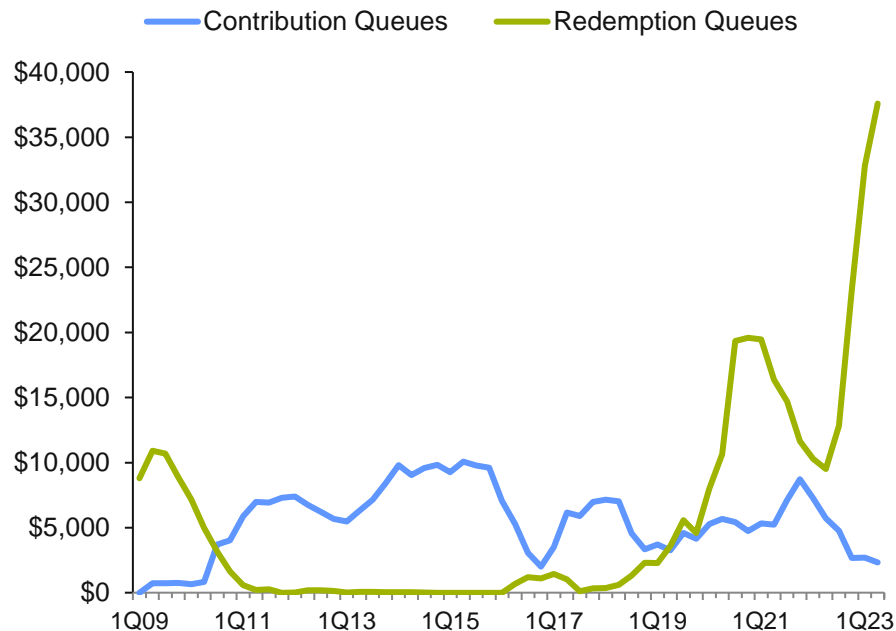


Sources: Bloomberg, S&P Dow Jones Indices

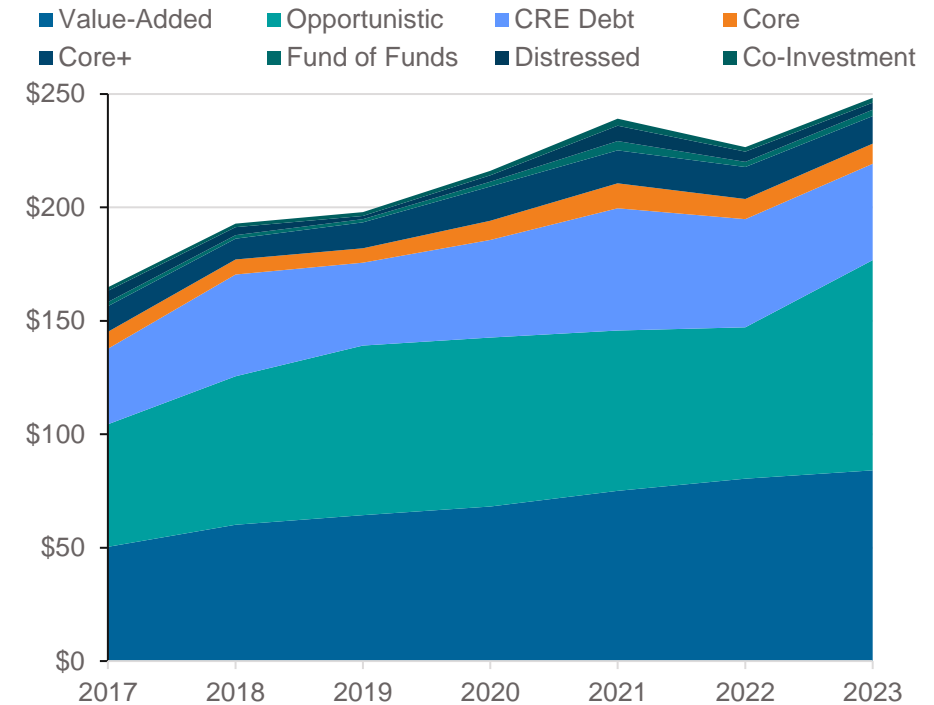
U.S. Private Real Estate Market Trends

Dry powder nears \$250 billion

Core Fund Contribution/Redemption Queues (\$mm)^*



Dry Powder for CRE Investment in North America (\$bn)



- ▶ Total of all ODCE redemption queues is \$38 billion as of 1Q, average queue per fund of 13.7%. Below GFC high of roughly 18%.
- ▶ Outstanding redemption requests for most large ODCE funds are approximately 10% to 16% of net asset value. Additional redemption requests have slowed substantially. Expectation is for trend to continue driven by public markets recovery.
- ▶ For a large proportion of funds these redemptions are partial redemptions, due to portfolio rebalancing and liquidity needs. For a smaller underperforming subset, redemption requests are full redemptions indicative of manager termination.

Sources: AEW, NCREIF, Preqin
Queue data as of 1Q23, the latest available at time of publication

Private Equity Overview

Fundraising remains steady

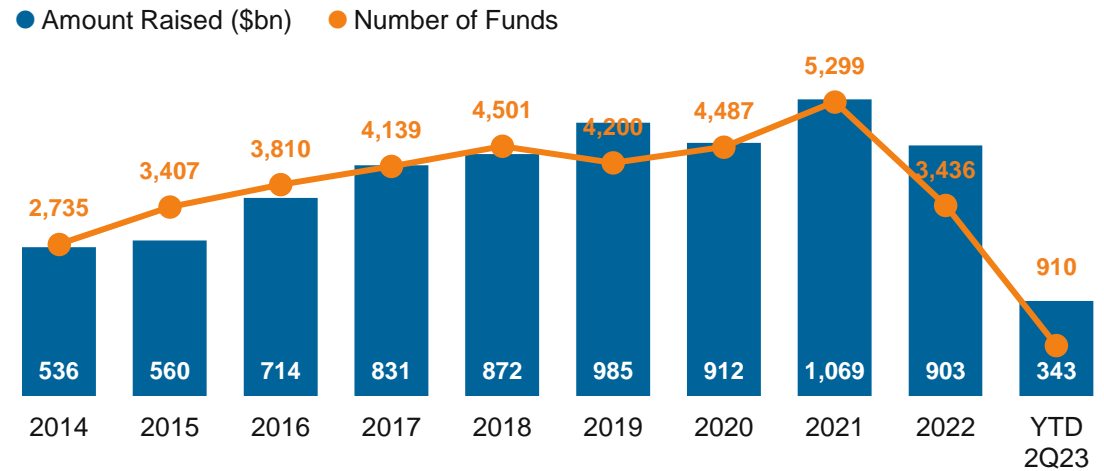
Fundraising varies by strategy type

- Fundraising continued to decline through 2022 and into 2023, after peaking in 2021.
- 1H23 saw a significant drop in venture capital fundraising (-62%) compared to 1H22, with buyout fundraising falling less sharply (-26%).
- Fundraising is concentrated in larger funds as LPs have been consolidating with high-conviction GPs.
- Fundraising timelines are extending due to so many funds in the market, slowing distributions, and constrained LP commitment budgets.

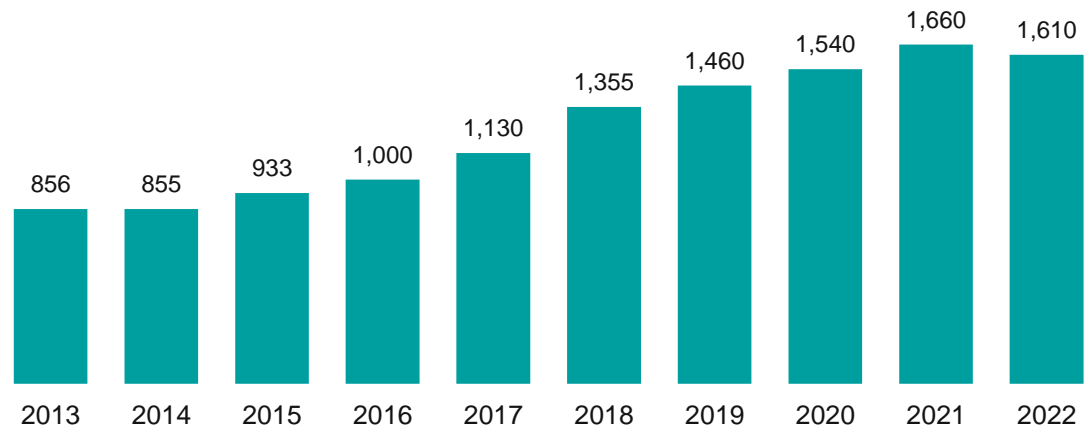
Dry powder levels off

- Level of dry powder influenced by two factors: fundraising and capital deployment.
- Dry powder peaked in 2021 at \$1.7 trillion due to strong annual fundraising levels.
- Dry powder dropped slightly in 2022 due to a slower fundraising environment.

Annual Fundraising



Dry Powder (\$bn) Cumulative as of yearend



2023 Dry Powder not yet available.

Source: PitchBook

Private Equity Key Themes

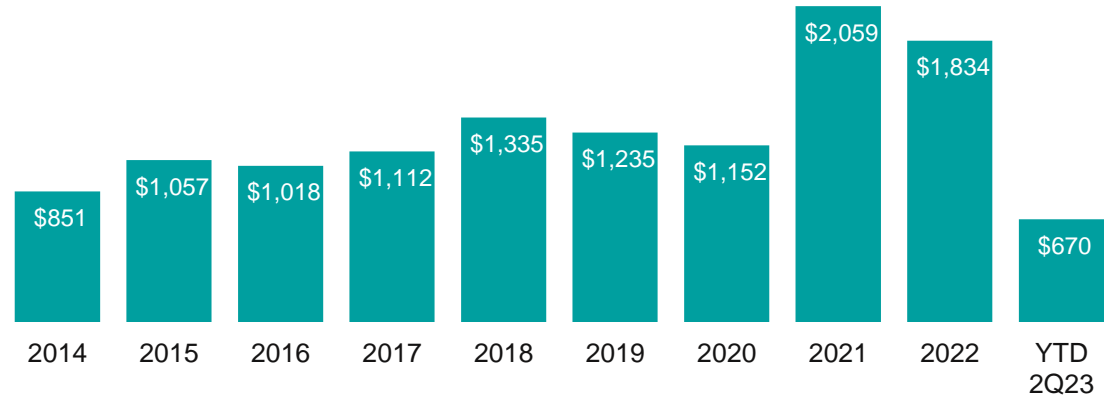
Capital deployment picks up

- New investments pace YTD exceeds pre-pandemic levels slightly but represents a significant drop from the exuberance of 2021-2022.

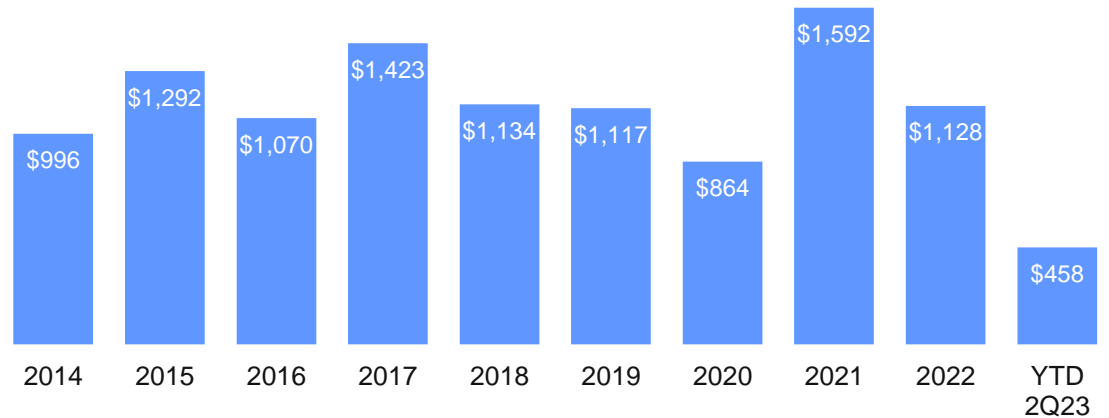
Exits still slow

- Private equity exits are still below pre-pandemic levels, driven by a drop in venture-backed exits and a slow IPO market.
- Many GPs prefer to delay exits in anticipation of a more favorable market environment in the future.

Private Equity Deal Activity (\$b)



Private Equity Exits (\$b)



Source: PitchBook

Callan

**NDSIB Total Performance &
Asset Allocation Summary**

Conclusions and Observations

- 1. Are the Plans' assets invested as outlined in the Plan's Investment Policy Statement?**
 - Each of the Trust's asset allocation were within policy ranges as of June 30, 2023.
- 2. Are the Plans' cash flows being managed consistent with the Plan's strategic asset allocation policy?**
 - Each Trust's cash flows were managed to rebalance towards strategic targets as of June 30, 2023.
- 3. Are the Plans' investment results meeting strategic objectives?**
 - Most Total Fund returns have each exceeded their respective static benchmarks on a net-of-fee basis for the trailing five-year period ended June 30, 2023. TFFR trails by an annualized 23 bps.
 - However, when applying the Corridor Benchmark methodology, both PERS and TFFR exceed their targets on a net-of-fee basis for the trailing five-year period ended June 30, 2023.
- 4. Are the fees paid to managers reasonable given the competitive landscape and given the value delivered?**
 - In most cases, Total Fund net-of-fee results exceed benchmark.
- 5. Are any corrective steps necessary to bring the Plan back into compliance with long-term objectives?**
 - No action steps are recommended as the Plans are meeting objectives.

Corridor Benchmarking

1. What is corridor benchmarking?

- Adjusting a portfolio's benchmark weights to reflect the actual weights of private market and less liquid investments.
- Any increase or decrease from the strategic target weights to private/less liquid investments will be offset by an equal magnitude decrease/increase to the benchmark weight in public equity and/or fixed income.

2. Why would this be used?

- Performance attribution from asset allocation would more clearly reflect the Investment team's decisions.
 - Staff does not have direct control of private/less liquid strategy cash flows, i.e. managers call and distribute capital as deals are executed.
 - Therefore, the inability to rebalance generates an asset allocation effect that is outside of Staff and the Board's control.

3. How will weights be adjusted?

- Private equity will be rebalanced to public equity.
- Real assets, including real estate and infrastructure, will be rebalanced to 50% public fixed income and 50% public equity.

NDSIB Consolidated Gross Performance Summary

As of June 30, 2023

	Last Quarter	Last Year	Last 5 Years
Consolidated Pension Trust	3.22%	8.00%	7.12%
<i>Consolidated Pension Trust Target</i>	3.03%	8.44%	6.95%
<i>Consolidated Pension Trust Corridor Target</i>	2.90%	7.76%	6.56%
Relative Performance vs. Target	0.19%	-0.44%	0.17%
Relative Performance vs. Corridor Target	0.32%	0.24%	0.56%
PERS Total Fund	3.28%	8.23%	7.19%
<i>NDSIB PERS Total Fund Target</i>	3.10%	8.65%	6.90%
<i>NDSIB PERS Total Fund Corridor Target</i>	2.97%	7.96%	6.60%
Relative Performance vs. Target	0.18%	-0.42%	0.29%
Relative Performance vs. Corridor Target	0.31%	0.27%	0.59%
TFFR Total Fund	3.18%	7.72%	7.07%
<i>NDSIB TFFR Total Fund Target</i>	2.97%	8.23%	7.06%
<i>NDSIB TFFR Total Fund Corridor Target</i>	2.84%	7.55%	6.54%
Relative Performance vs. Target	0.21%	-0.51%	0.01%
Relative Performance vs. Corridor Target	0.34%	0.17%	0.53%
WSI Total Fund	0.71%	2.90%	3.56%
<i>NDSIB WSI Total Fund Target</i>	0.43%	2.36%	3.10%
Relative Performance vs. Target	0.28%	0.54%	0.46%
Legacy - Total Fund	2.95%	8.37%	5.68%
<i>NDSIB Legacy - Total Fund Target</i>	2.30%	6.82%	5.03%
<i>NDSIB Legacy - Total Fund Corridor Target</i>	2.41%	7.05%	5.07%
Relative Performance vs. Target	0.65%	1.55%	0.65%
Relative Performance vs. Corridor Target	0.54%	1.32%	0.61%
Budget - Total Fund	1.10%	3.23%	1.72%
<i>NDSIB Budget - Total Fund Target</i>	-0.37%	0.54%	1.13%
Relative Performance vs. Target	1.47%	2.69%	0.59%

PERS Returns

Static vs. Corridor Benchmark Net of Fee Value-Added

Static Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	8.23%
Net of fees	7.98%
Target	8.65%
Net added	-0.67%

Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	8.89%
Net of fees	8.62%
Target	8.32%
Net added	0.30%

Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	7.19%
Net of fees	6.94%
Target	6.90%
Net added	0.04%

Corridor Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	8.23%
Net of fees	7.98%
Target	7.96%
Net added	0.02%

Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	8.89%
Net of fees	8.62%
Target	8.03%
Net added	0.59%

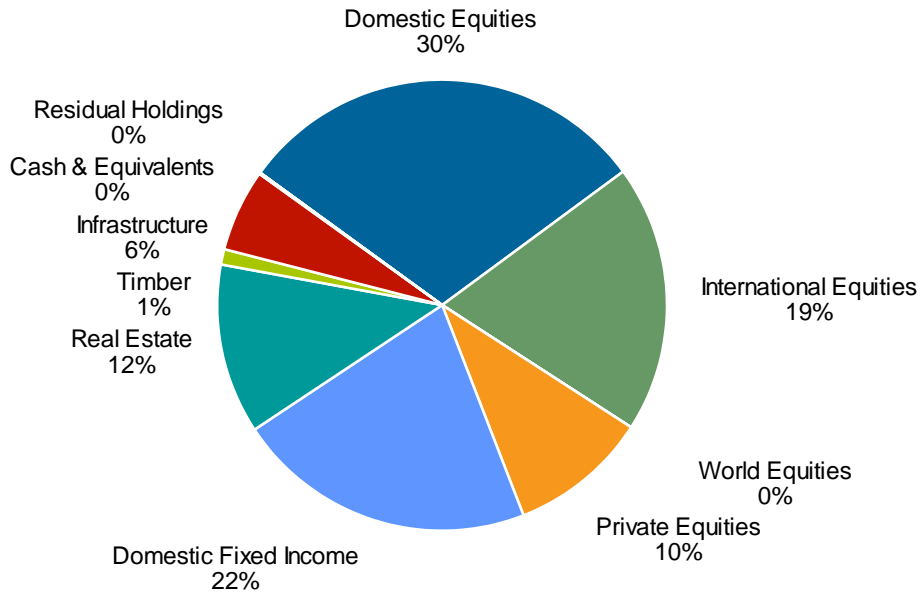
Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	7.19%
Net of fees	6.94%
Target	6.60%
Net added	0.34%

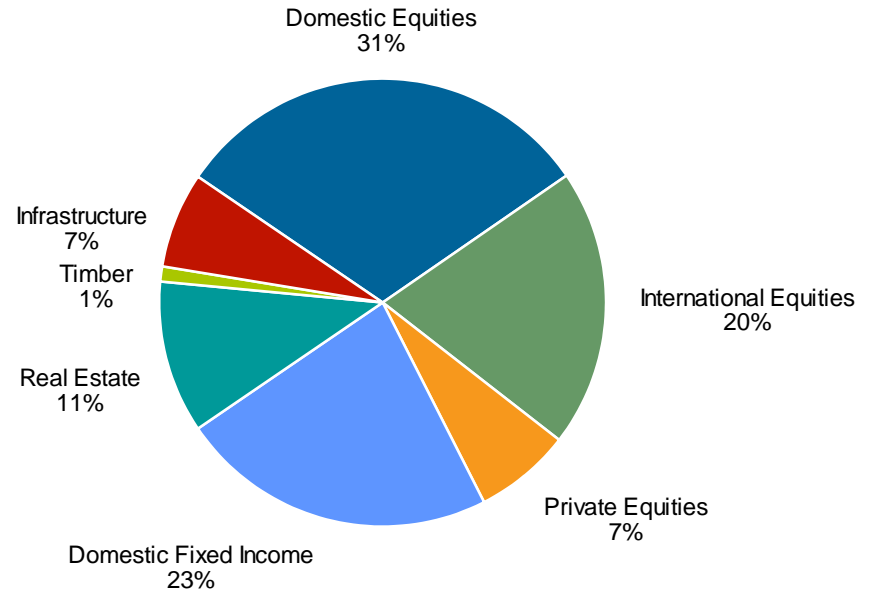
PERS Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,171,425	29.9%	30.9%	(1.0%)	(39,215)
International Equities	749,287	19.2%	20.1%	(0.9%)	(35,469)
World Equities	27	0.0%	0.0%	0.0%	27
Private Equities	391,541	10.0%	7.0%	3.0%	117,663
Domestic Fixed Income	845,605	21.6%	23.0%	(1.4%)	(54,279)
Real Estate	476,366	12.2%	11.0%	1.2%	45,986
Timber	42,065	1.1%	1.1%	0.0%	0
Infrastructure	231,249	5.9%	6.9%	(1.0%)	(39,689)
Cash & Equivalents	4,590	0.1%	0.0%	0.1%	4,590
Residual Holdings	386	0.0%	0.0%	0.0%	386
Total	3,912,541	100.0%	100.0%		

TFFR Returns

Static vs. Corridor Benchmark Net of Fee Value-Added

Static Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	7.72%
Net of fees	7.48%
Target	8.23%
Net added	-0.75%

Returns for 3 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	8.67%
Net of fees	8.41%
Target	8.62%
Net added	-0.21%

Returns for 5 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	7.07%
Net of fees	6.83%
Target	7.06%
Net added	-0.23%

Corridor Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	7.72%
Net of fees	7.48%
Target	7.55%
Net added	-0.07%

Returns for 3 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	8.67%
Net of fees	8.41%
Target	7.95%
Net added	0.46%

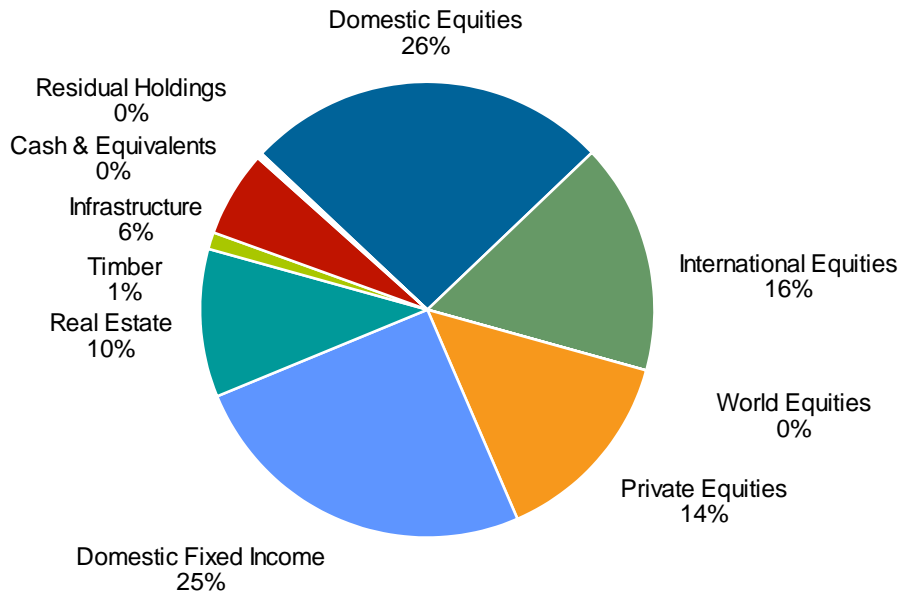
Returns for 5 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	7.07%
Net of fees	6.83%
Target	6.54%
Net added	0.29%

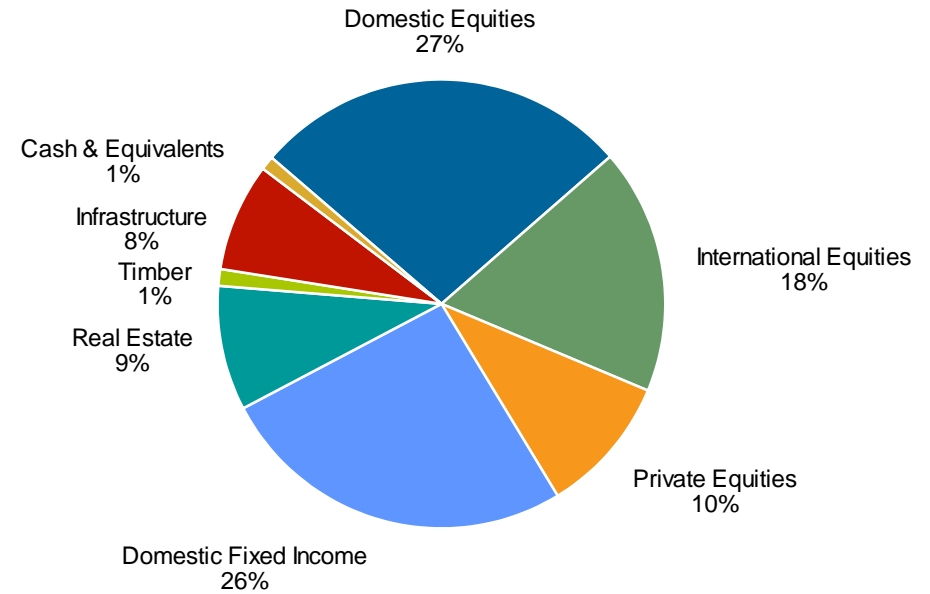
TFFR Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	808,928	25.9%	27.3%	(1.4%)	(43,857)
International Equities	512,966	16.4%	17.7%	(1.3%)	(39,823)
World Equities	246	0.0%	0.0%	0.0%	246
Private Equities	444,163	14.2%	10.0%	4.2%	131,814
Domestic Fixed Income	790,640	25.3%	26.0%	(0.7%)	(21,469)
Real Estate	326,766	10.5%	9.0%	1.5%	45,651
Timber	37,549	1.2%	1.2%	(0.0%)	(0)
Infrastructure	189,439	6.1%	7.8%	(1.7%)	(54,127)
Cash & Equivalents	9,288	0.3%	1.0%	(0.7%)	(21,947)
Residual Holdings	3,513	0.1%	0.0%	0.1%	3,513
Total	3,123,498	100.0%	100.0%		

WSI Fund Returns

Static vs. Corridor Benchmark Net of Fee Value-Added

Static Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	2.90%
Net of fees	2.74%
Target	2.36%
Net added	0.38%

Returns for 3 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	1.58%
Net of fees	1.40%
Target	0.68%
Net added	0.72%

Returns for 5 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	3.56%
Net of fees	3.39%
Target	3.10%
Net added	0.29%

Corridor Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	2.90%
Net of fees	2.74%
Target	2.13%
Net added	0.61%

Returns for 3 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	1.58%
Net of fees	1.40%
Target	0.64%
Net added	0.76%

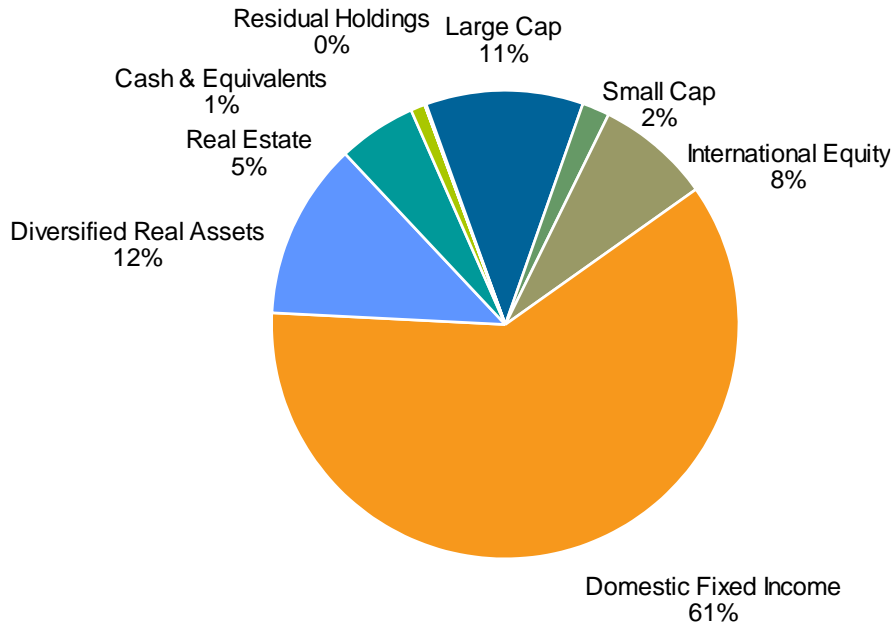
Returns for 5 Years Ended 06/30/2023

<u>Return Type</u>	<u>Return (%)</u>
Gross	3.56%
Net of fees	3.39%
Target	3.06%
Net added	0.33%

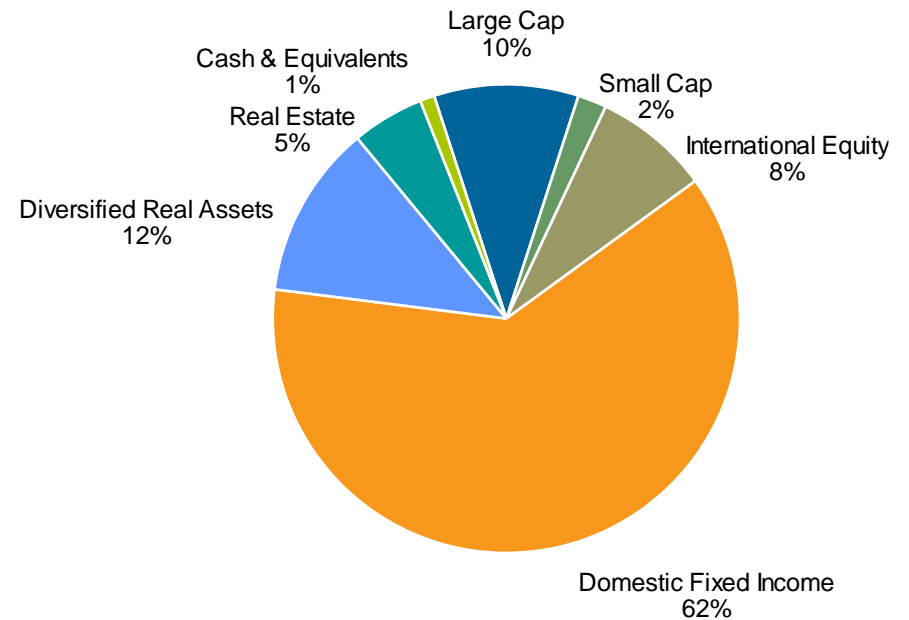
WSI Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	224,645	10.9%	10.0%	0.9%	17,974
Small Cap	38,875	1.9%	2.0%	(0.1%)	(2,459)
International Equity	164,148	7.9%	8.0%	(0.1%)	(1,188)
Domestic Fixed Income	1,253,107	60.6%	62.0%	(1.4%)	(28,253)
Diversified Real Assets	252,979	12.2%	12.0%	0.2%	4,974
Real Estate	112,128	5.4%	5.0%	0.4%	8,792
Cash & Equivalents	20,531	1.0%	1.0%	(0.0%)	(136)
Residual Holdings	296	0.0%	0.0%	0.0%	296
Total	2,066,709	100.0%	100.0%		

Legacy Fund Returns

Static vs. Corridor Benchmark Net of Fee Value-Added

Static Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	8.37%
Net of fees	8.19%
Target	6.82%
Net added	1.37%

Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	6.28%
Net of fees	6.06%
Target	4.89%
Net added	1.17%

Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	5.68%
Net of fees	5.47%
Target	5.03%
Net added	0.44%

Corridor Benchmark Net Value-Added

Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	8.37%
Net of fees	8.19%
Target	7.05%
Net added	1.14%

Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	6.28%
Net of fees	6.06%
Target	4.99%
Net added	1.07%

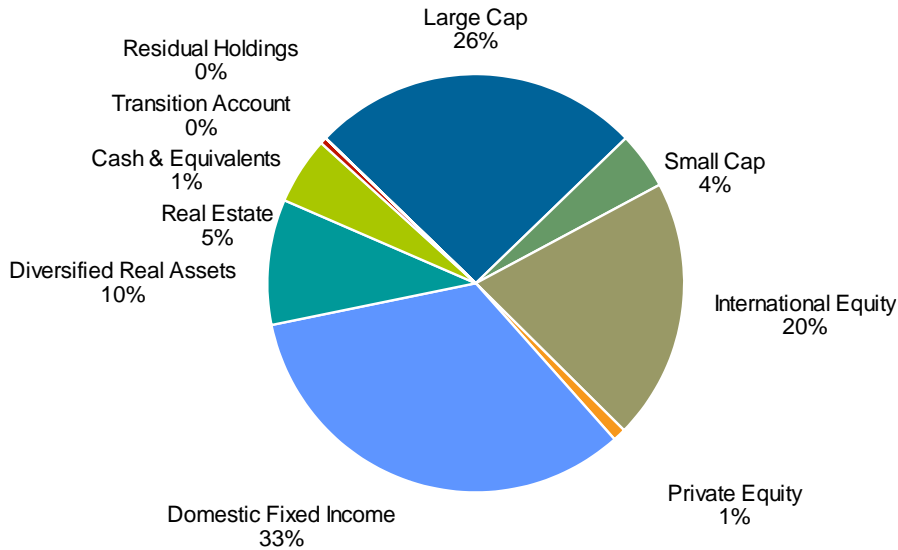
Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	5.68%
Net of fees	5.47%
Target	5.07%
Net added	0.40%

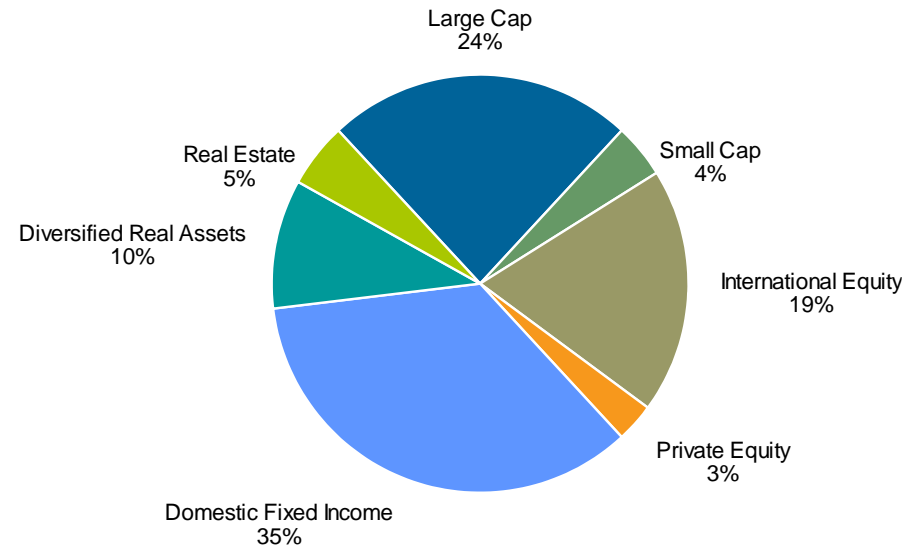
Legacy Fund Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	2,303,931	25.6%	23.8%	1.8%	160,825
Small Cap	395,233	4.4%	4.2%	0.2%	17,038
International Equity	1,816,250	20.2%	19.0%	1.2%	105,367
Private Equity	89,987	1.0%	3.0%	(2.0%)	(180,152)
Domestic Fixed Income	3,008,785	33.4%	35.0%	(1.6%)	(142,840)
Diversified Real Assets	875,809	9.7%	10.0%	(0.3%)	(24,656)
Real Estate	464,014	5.2%	5.0%	0.2%	13,781
Cash & Equivalents	48,368	0.5%	0.0%	0.5%	48,368
Transition Account	45	0.0%	0.0%	0.0%	45
Residual Holdings	2,223	0.0%	0.0%	0.0%	2,223
Total	9,004,645	100.0%	100.0%		

Consolidated Pension Trusts Quarterly Attribution Analysis

- Public Employees Retirement System
- Teachers' Fund for Retirement

PERS Attribution – Strategic and Corridor Target

As of June 30, 2023

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	28%	29%	19.92%	18.51%	0.36%	(0.54%)	(0.18%)
World Equities	3%	2%	(26.36%)	(25.81%)	(0.08%)	0.12%	0.03%
International Equities	18%	19%	13.98%	12.40%	0.24%	0.04%	0.28%
Private Equities	9%	7%	9.24%	9.24%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	22%	23%	1.82%	2.05%	(0.04%)	0.02%	(0.03%)
Real Estate	14%	11%	(10.50%)	(6.60%)	(0.58%)	(0.49%)	(1.07%)
Timber	1%	1%	(5.29%)	11.13%	(0.21%)	(0.02%)	(0.23%)
Infrastructure	6%	7%	8.92%	(3.04%)	0.71%	0.11%	0.82%
Cash & Equivalents	0%	0%	3.79%	3.79%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total $8.23\% = 8.65\% + 0.38\% + (0.80\%)$ **(0.42%)**

Corridor One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	28%	26%	19.92%	18.51%	0.36%	(0.19%)	0.17%
World Equities	3%	2%	(26.36%)	(25.81%)	(0.08%)	0.13%	0.04%
International Equities	18%	19%	13.98%	12.40%	0.24%	0.03%	0.27%
Private Equities	9%	9%	9.24%	9.24%	0.00%	0.00%	0.00%
Domestic Fixed Income	22%	22%	1.82%	2.05%	(0.04%)	(0.06%)	(0.10%)
Real Estate	14%	14%	(10.50%)	(6.60%)	(0.58%)	0.00%	(0.58%)
Timber	1%	1%	(5.29%)	11.13%	(0.21%)	0.00%	(0.21%)
Infrastructure	6%	6%	8.92%	(3.04%)	0.71%	0.00%	0.71%
Cash & Equivalents	0%	0%	3.79%	3.79%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total $8.23\% = 7.96\% + 0.38\% + (0.12\%)$ **0.27%**

PERS Attribution – Strategic and Corridor Target

As of June 30, 2023

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	14.03%	13.77%	0.10%	(0.10%)	0.01%
World Equities	9%	8%	(2.65%)	(4.04%)	0.19%	0.03%	0.22%
International Equities	17%	17%	7.70%	7.30%	0.07%	0.07%	0.13%
Private Equities	7%	7%	22.01%	22.01%	0.00%	(0.10%)	(0.10%)
Domestic Fixed Income	23%	23%	(0.43%)	(1.82%)	0.37%	(0.05%)	0.32%
Real Estate	12%	11%	7.19%	6.79%	0.04%	(0.12%)	(0.08%)
Timber	1%	1%	2.17%	8.67%	(0.08%)	(0.02%)	(0.10%)
Infrastructure	5%	7%	10.75%	6.49%	0.25%	(0.04%)	0.21%
Cash & Equivalents	0%	0%	1.36%	1.36%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	8.89% = 8.32% + 0.93% + (0.36%)	0.58%
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Corridor Three Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	26%	14.03%	13.77%	0.10%	(0.17%)	(0.06%)
World Equities	9%	8%	(2.65%)	(4.04%)	0.19%	0.04%	0.23%
International Equities	17%	17%	7.70%	7.30%	0.07%	0.06%	0.13%
Private Equities	7%	7%	22.01%	22.01%	0.00%	0.00%	0.00%
Domestic Fixed Income	23%	23%	(0.43%)	(1.82%)	0.37%	0.03%	0.39%
Real Estate	12%	12%	7.19%	6.79%	0.04%	0.00%	0.04%
Timber	1%	1%	2.17%	8.67%	(0.08%)	0.00%	(0.08%)
Infrastructure	5%	5%	10.75%	6.49%	0.25%	0.00%	0.25%
Cash & Equivalents	0%	0%	1.36%	1.36%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	8.89% = 8.03% + 0.93% + (0.07%)	0.87%
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PERS Attribution – Strategic and Corridor Target

As of June 30, 2023

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	23%	11.88%	10.37%	0.34%	(0.08%)	0.26%
World Equities	12%	11%	(2.33%)	(0.68%)	(0.30%)	(0.01%)	(0.31%)
International Equities	16%	16%	4.49%	3.55%	0.15%	0.01%	0.16%
Private Equities	6%	7%	15.25%	15.25%	0.00%	(0.11%)	(0.11%)
Domestic Fixed Income	23%	23%	2.74%	1.62%	0.29%	(0.02%)	0.26%
Real Estate	12%	11%	6.14%	5.90%	0.03%	(0.11%)	(0.09%)
Timber	2%	2%	3.36%	5.80%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	6%	8.50%	4.98%	0.20%	(0.03%)	0.17%
Cash & Equivalents	0%	0%	1.58%	1.58%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	7.19% = 6.90% + 0.68% + (0.39%)	0.30%
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Corridor Five Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	25%	11.88%	10.37%	0.34%	(0.09%)	0.25%
World Equities	12%	11%	(2.33%)	(0.68%)	(0.30%)	(0.00%)	(0.31%)
International Equities	16%	16%	4.49%	3.55%	0.15%	0.01%	0.16%
Private Equities	6%	6%	15.25%	15.25%	0.00%	0.00%	0.00%
Domestic Fixed Income	23%	23%	2.74%	1.62%	0.29%	(0.00%)	0.29%
Real Estate	12%	12%	6.14%	5.90%	0.03%	0.00%	0.03%
Timber	2%	2%	3.36%	5.80%	(0.02%)	0.00%	(0.02%)
Infrastructure	5%	5%	8.50%	4.98%	0.20%	0.00%	0.20%
Cash & Equivalents	0%	0%	1.58%	1.58%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	7.19% = 6.60% + 0.68% + (0.09%)	0.59%
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TFFR Attribution – Strategic and Corridor Target

As of June 30, 2023

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	26%	19.91%	18.51%	0.31%	(0.53%)	(0.22%)
World Equities	3%	2%	(26.46%)	(25.91%)	(0.08%)	0.12%	0.03%
International Equities	15%	17%	14.14%	12.40%	0.22%	(0.07%)	0.15%
Private Equities	13%	10%	9.24%	9.24%	0.00%	(0.01%)	(0.01%)
Domestic Fixed Income	25%	26%	1.56%	2.08%	(0.13%)	(0.02%)	(0.15%)
Real Estate	12%	9%	(10.50%)	(6.60%)	(0.50%)	(0.47%)	(0.97%)
Timber	1%	1%	(5.29%)	11.13%	(0.24%)	(0.02%)	(0.25%)
Infrastructure	6%	8%	8.92%	(3.04%)	0.73%	0.19%	0.92%
Cash & Equivalents	1%	1%	3.93%	3.59%	0.00%	(0.04%)	(0.04%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total $7.72\% = 8.23\% + 0.31\% + (0.83\%)$ **(0.52%)**

Corridor One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	22%	19.91%	18.51%	0.31%	(0.09%)	0.21%
World Equities	3%	2%	(26.46%)	(25.91%)	(0.08%)	0.13%	0.04%
International Equities	15%	17%	14.14%	12.40%	0.22%	(0.09%)	0.13%
Private Equities	13%	13%	9.24%	9.24%	0.00%	0.00%	0.00%
Domestic Fixed Income	25%	26%	1.56%	2.08%	(0.13%)	(0.05%)	(0.18%)
Real Estate	12%	12%	(10.50%)	(6.60%)	(0.50%)	0.00%	(0.50%)
Timber	1%	1%	(5.29%)	11.13%	(0.24%)	0.00%	(0.24%)
Infrastructure	6%	6%	8.92%	(3.04%)	0.73%	0.00%	0.73%
Cash & Equivalents	1%	1%	3.93%	3.59%	0.00%	(0.04%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total $7.72\% = 7.55\% + 0.31\% + (0.15\%)$ **0.17%**

TFFR Attribution – Strategic and Corridor Target

As of June 30, 2023

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	23%	14.00%	13.75%	0.07%	(0.14%)	(0.07%)
World Equities	9%	8%	(2.69%)	(4.08%)	0.19%	0.04%	0.23%
International Equities	15%	15%	7.70%	7.21%	0.09%	0.00%	0.09%
Private Equities	9%	9%	22.02%	22.02%	0.00%	(0.45%)	(0.45%)
Domestic Fixed Income	26%	26%	(0.86%)	(1.81%)	0.29%	(0.08%)	0.21%
Real Estate	10%	9%	7.18%	6.79%	0.03%	(0.09%)	(0.06%)
Timber	2%	2%	2.17%	8.67%	(0.09%)	(0.02%)	(0.11%)
Infrastructure	5%	7%	10.75%	6.49%	0.26%	(0.05%)	0.20%
Cash & Equivalents	1%	1%	1.40%	1.27%	0.00%	(0.02%)	(0.02%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total **8.67% = 8.62% + 0.85% + (0.80%)** **0.05%**

Corridor Three Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	23%	14.00%	13.75%	0.07%	(0.17%)	(0.10%)
World Equities	9%	8%	(2.69%)	(4.08%)	0.19%	0.06%	0.25%
International Equities	15%	15%	7.70%	7.21%	0.09%	0.01%	0.10%
Private Equities	9%	9%	22.02%	22.02%	0.00%	0.00%	0.00%
Domestic Fixed Income	26%	26%	(0.86%)	(1.81%)	0.29%	0.00%	0.29%
Real Estate	10%	10%	7.18%	6.79%	0.03%	0.00%	0.03%
Timber	2%	2%	2.17%	8.67%	(0.09%)	0.00%	(0.09%)
Infrastructure	5%	5%	10.75%	6.49%	0.26%	0.00%	0.26%
Cash & Equivalents	1%	1%	1.40%	1.27%	0.00%	(0.02%)	(0.02%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total **8.67% = 7.95% + 0.85% + (0.13%)** **0.72%**

TFFR Attribution – Strategic and Corridor Target

As of June 30, 2023

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	11.91%	10.41%	0.32%	(0.11%)	0.21%
World Equities	12%	11%	(2.35%)	(0.71%)	(0.29%)	(0.00%)	(0.29%)
International Equities	15%	15%	4.46%	3.47%	0.16%	(0.01%)	0.15%
Private Equities	7%	8%	15.25%	15.25%	0.00%	(0.31%)	(0.31%)
Domestic Fixed Income	25%	25%	2.44%	1.62%	0.23%	(0.04%)	0.19%
Real Estate	10%	9%	6.14%	5.90%	0.02%	(0.09%)	(0.07%)
Timber	2%	2%	3.36%	5.80%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	7%	8.50%	4.98%	0.21%	(0.04%)	0.17%
Cash & Equivalents	1%	1%	1.60%	1.55%	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			7.07%	7.06%	+ 0.63%	+ (0.62%)	0.01%

Corridor Five Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	23%	11.91%	10.41%	0.32%	(0.09%)	0.23%
World Equities	12%	11%	(2.35%)	(0.71%)	(0.29%)	0.01%	(0.28%)
International Equities	15%	15%	4.46%	3.47%	0.16%	(0.01%)	0.16%
Private Equities	7%	7%	15.25%	15.25%	0.00%	0.00%	0.00%
Domestic Fixed Income	25%	25%	2.44%	1.62%	0.23%	(0.01%)	0.22%
Real Estate	10%	10%	6.14%	5.90%	0.02%	0.00%	0.02%
Timber	2%	2%	3.36%	5.80%	(0.02%)	0.00%	(0.02%)
Infrastructure	5%	5%	8.50%	4.98%	0.21%	0.00%	0.21%
Cash & Equivalents	1%	1%	1.60%	1.55%	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			7.07%	6.54%	+ 0.63%	+ (0.10%)	0.53%

Insurance Trust

Quarterly Attribution Analysis

- Workforce Safety and Insurance Legacy Fund
- Budget Stabilization Fund

Consolidated Insurance Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	7%	8%	20.13%	19.36%	0.05%	(0.14%)	(0.09%)
Small Cap	1%	2%	15.69%	12.31%	0.04%	(0.06%)	(0.02%)
International Equity	6%	6%	15.44%	13.08%	0.11%	(0.09%)	0.02%
Domestic Fixed Income	45%	45%	0.41%	(0.94%)	0.62%	(0.03%)	0.59%
Diversified Real Assets	9%	9%	1.73%	0.01%	0.15%	(0.01%)	0.14%
Real Estate	4%	4%	(10.14%)	(6.60%)	(0.15%)	(0.08%)	(0.23%)
Short Term Fixed Income	27%	27%	3.23%	0.52%	0.72%	(0.08%)	0.64%
Cash & Equivalents	1%	1%	3.61%	3.59%	0.00%	0.00%	0.01%
Transition Account	0%	0%	-	-	0.00%	0.00%	0.00%
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)

Total **3.16% = 2.09% + 1.53% + (0.47%)** **1.06%**

Corridor One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	7%	7%	20.13%	19.36%	0.05%	(0.08%)	(0.03%)
Small Cap	1%	2%	15.69%	12.31%	0.04%	(0.04%)	(0.00%)
International Equity	6%	6%	15.44%	13.08%	0.11%	(0.09%)	0.01%
Domestic Fixed Income	45%	45%	0.41%	(0.94%)	0.62%	(0.04%)	0.58%
Diversified Real Assets	9%	9%	1.73%	0.01%	0.15%	0.00%	0.15%
Real Estate	4%	4%	(10.14%)	(6.60%)	(0.15%)	0.00%	(0.15%)
Short Term Fixed Income	27%	26%	3.23%	0.52%	0.72%	(0.07%)	0.64%
Cash & Equivalents	1%	1%	3.61%	3.59%	0.00%	0.01%	0.01%
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total **3.16% = 1.95% + 1.53% + (0.33%)** **1.21%**

Consolidated Insurance Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	8%	8%	15.65%	14.09%	0.11%	0.00%	0.12%
Small Cap	2%	2%	11.21%	10.82%	(0.03%)	0.03%	0.00%
International Equity	6%	6%	8.91%	7.94%	0.05%	(0.04%)	0.01%
Domestic Fixed Income	45%	45%	(2.79%)	(3.96%)	0.54%	(0.01%)	0.53%
Diversified Real Assets	9%	9%	2.05%	2.15%	(0.01%)	0.01%	(0.01%)
Real Estate	4%	4%	7.44%	6.79%	0.04%	(0.03%)	0.01%
Short Term Fixed Income	25%	25%	0.52%	(0.88%)	0.36%	(0.05%)	0.32%
Cash & Equivalents	1%	1%	1.26%	1.27%	(0.00%)	0.00%	(0.00%)
Transition Account	0%	0%	-	-	0.00%	0.00%	0.00%
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			1.41%	0.44%	+ 1.06%	+ (0.08%)	0.98%

Corridor Three Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	8%	8%	15.65%	14.09%	0.11%	(0.01%)	0.10%
Small Cap	2%	2%	11.21%	10.82%	(0.03%)	0.03%	0.00%
International Equity	6%	6%	8.91%	7.94%	0.05%	(0.04%)	0.01%
Domestic Fixed Income	45%	45%	(2.79%)	(3.96%)	0.54%	(0.01%)	0.53%
Diversified Real Assets	9%	9%	2.05%	2.15%	(0.01%)	0.00%	(0.01%)
Real Estate	4%	4%	7.44%	6.79%	0.04%	0.00%	0.04%
Short Term Fixed Income	25%	25%	0.52%	(0.88%)	0.36%	(0.04%)	0.32%
Cash & Equivalents	1%	1%	1.26%	1.27%	(0.00%)	0.00%	0.00%
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			1.41%	0.42%	+ 1.06%	+ (0.07%)	1.00%

Consolidated Insurance Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	9%	9%	12.36%	11.92%	0.03%	(0.05%)	(0.01%)
Small Cap	2%	2%	3.74%	4.21%	(0.04%)	(0.00%)	(0.04%)
International Equity	6%	6%	4.33%	3.80%	0.03%	(0.04%)	(0.01%)
Domestic Fixed Income	47%	47%	1.57%	0.77%	0.37%	0.01%	0.38%
Diversified Real Assets	9%	9%	3.16%	3.30%	(0.02%)	0.01%	(0.02%)
Real Estate	4%	4%	5.87%	5.90%	0.01%	(0.01%)	(0.00%)
Short Term Fixed Income	21%	21%	1.72%	1.13%	0.14%	(0.04%)	0.10%
Cash & Equivalents	2%	2%	1.46%	1.55%	(0.00%)	(0.03%)	(0.03%)
Transition Account	0%	0%	-	-	0.00%	0.00%	0.00%
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)

Total	3.16%	=	2.80%	+	0.50%	+	(0.14%)	0.36%
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Corridor Five Year Relative Attribution Effects

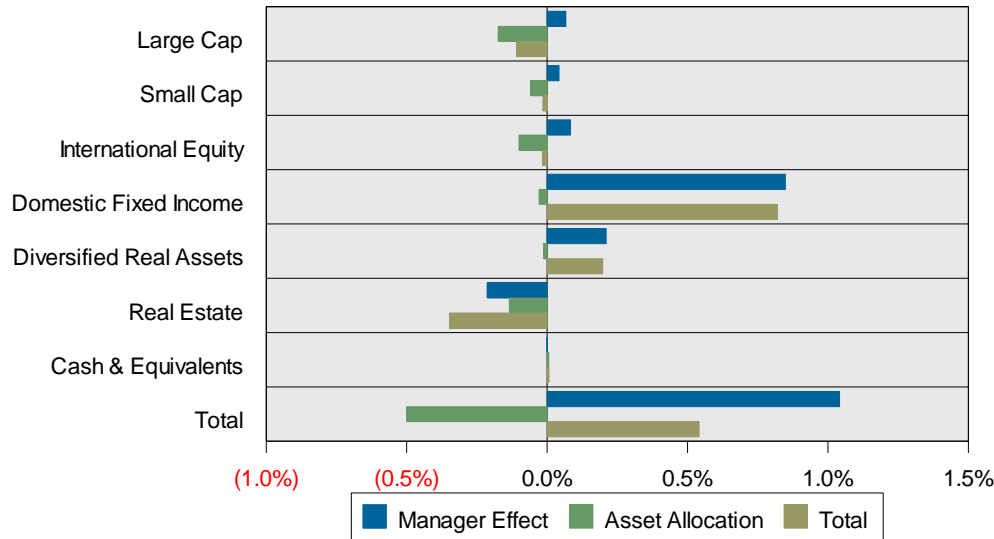
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	9%	9%	12.36%	11.92%	0.03%	(0.05%)	(0.02%)
Small Cap	2%	2%	3.74%	4.21%	(0.04%)	(0.01%)	(0.04%)
International Equity	6%	6%	4.33%	3.80%	0.03%	(0.04%)	(0.01%)
Domestic Fixed Income	47%	47%	1.57%	0.77%	0.37%	0.01%	0.38%
Diversified Real Assets	9%	9%	3.16%	3.30%	(0.02%)	0.00%	(0.02%)
Real Estate	4%	4%	5.87%	5.90%	0.01%	0.00%	0.01%
Short Term Fixed Income	21%	21%	1.72%	1.13%	0.14%	(0.03%)	0.10%
Cash & Equivalents	2%	2%	1.46%	1.55%	(0.00%)	(0.03%)	(0.03%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	3.16%	=	2.81%	+	0.50%	+	(0.14%)	0.36%
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WSI Performance and Attribution

As of June 30, 2023

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	2.90%
Net of fees	2.74%
Target	2.36%
Net added	0.38%

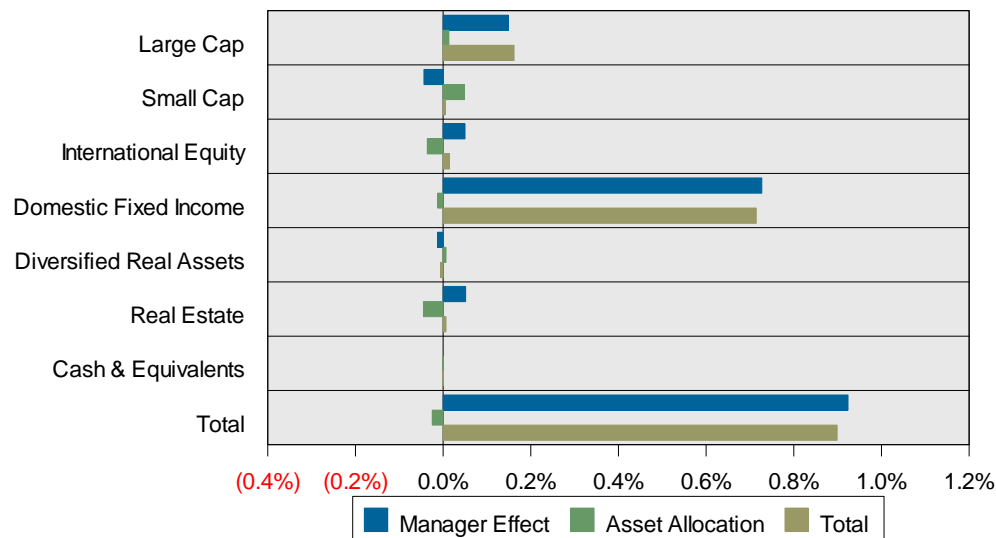
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	9%	10%	20.12%	19.36%	0.07%	(0.17%)	(0.11%)
Small Cap	2%	2%	15.68%	12.31%	0.04%	(0.06%)	(0.01%)
International Equity	7%	8%	14.46%	13.08%	0.08%	(0.10%)	(0.02%)
Domestic Fixed Income	62%	62%	0.40%	(0.94%)	0.85%	(0.03%)	0.82%
Diversified Real Assets	12%	12%	1.74%	0.01%	0.21%	(0.01%)	0.20%
Real Estate	6%	5%	(10.14%)	(6.60%)	(0.21%)	(0.13%)	(0.35%)
Cash & Equivalents	1%	1%	3.60%	3.59%	0.00%	0.01%	0.01%
Total			2.90%	2.36%	+ 1.04%	+ (0.50%)	0.54%

WSI Performance and Attribution

As of June 30, 2023

Three Year Annualized Relative Attribution Effects



Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	1.58%
Net of fees	1.40%
Target	0.68%
Net added	0.72%

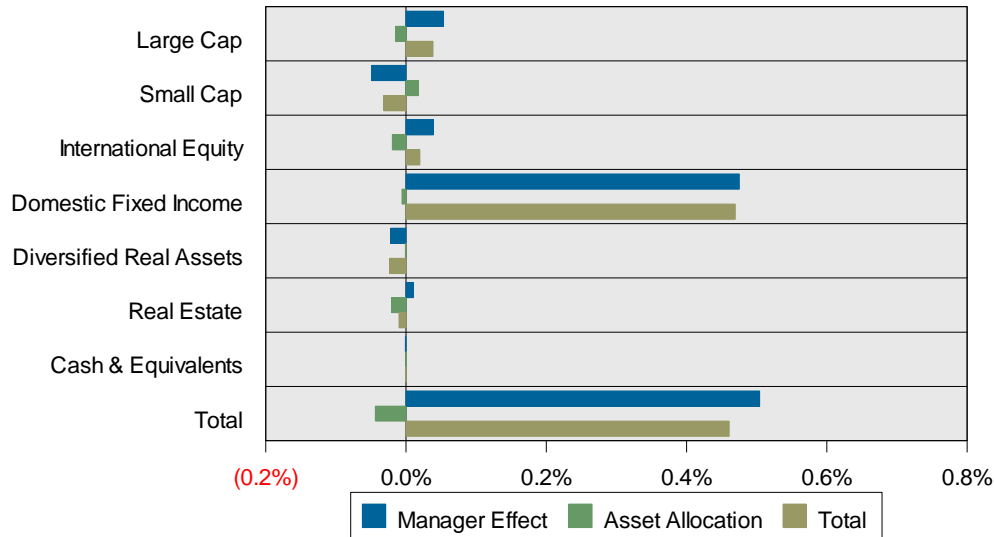
Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	11%	15.66%	14.09%	0.15%	0.01%	0.16%
Small Cap	2%	3%	11.20%	10.82%	(0.04%)	0.05%	0.00%
International Equity	8%	8%	8.63%	7.94%	0.05%	(0.04%)	0.01%
Domestic Fixed Income	61%	61%	(2.80%)	(3.96%)	0.73%	(0.01%)	0.71%
Diversified Real Assets	12%	12%	2.08%	2.16%	(0.01%)	0.01%	(0.01%)
Real Estate	5%	5%	7.44%	6.79%	0.05%	(0.04%)	0.01%
Cash & Equivalents	1%	1%	1.26%	1.27%	0.00%	0.00%	0.00%
Total			1.58%	0.68%	+ 0.92%	+ (0.02%)	0.90%

WSI Performance and Attribution

As of June 30, 2023

Five Year Annualized Relative Attribution Effects



Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	3.56%
Net of fees	3.39%
Target	3.10%
Net added	0.29%

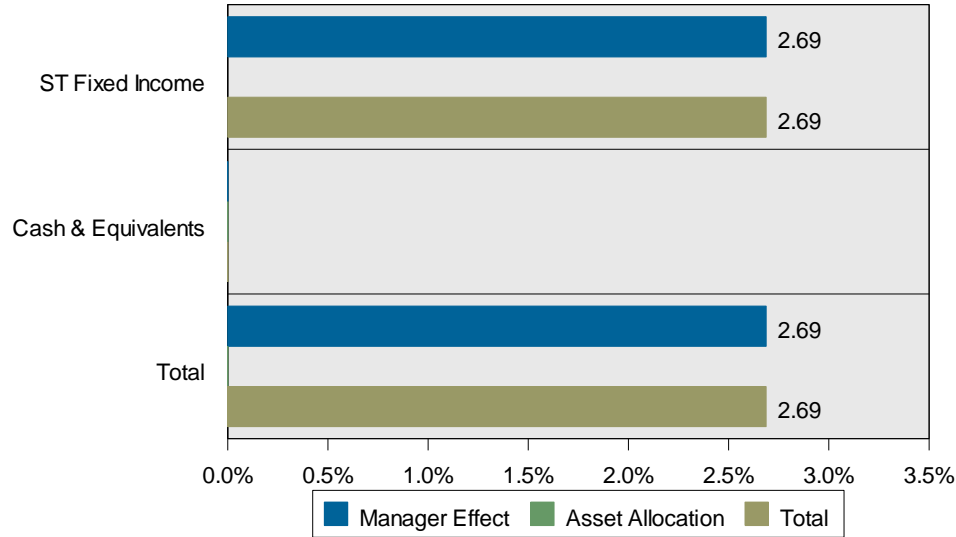
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	12.40%	11.92%	0.05%	(0.01%)	0.04%
Small Cap	3%	3%	3.66%	4.21%	(0.05%)	0.02%	(0.03%)
International Equity	8%	8%	4.20%	3.80%	0.04%	(0.02%)	0.02%
Domestic Fixed Income	60%	60%	1.60%	0.77%	0.48%	(0.01%)	0.47%
Diversified Real Assets	12%	12%	3.19%	3.30%	(0.02%)	(0.00%)	(0.02%)
Real Estate	5%	5%	5.87%	5.90%	0.01%	(0.02%)	(0.01%)
Cash & Equivalents	1%	1%	1.46%	1.55%	(0.00%)	0.00%	(0.00%)
Total			3.56%	3.10%	+ 0.50%	+ (0.04%)	0.46%

Budget Stabilization Fund Performance and Attribution

As of June 30, 2023

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2023

Return Type	Return (%)
Gross	3.23%
Net of fees	3.13%
Target	0.54%
Net added	2.59%

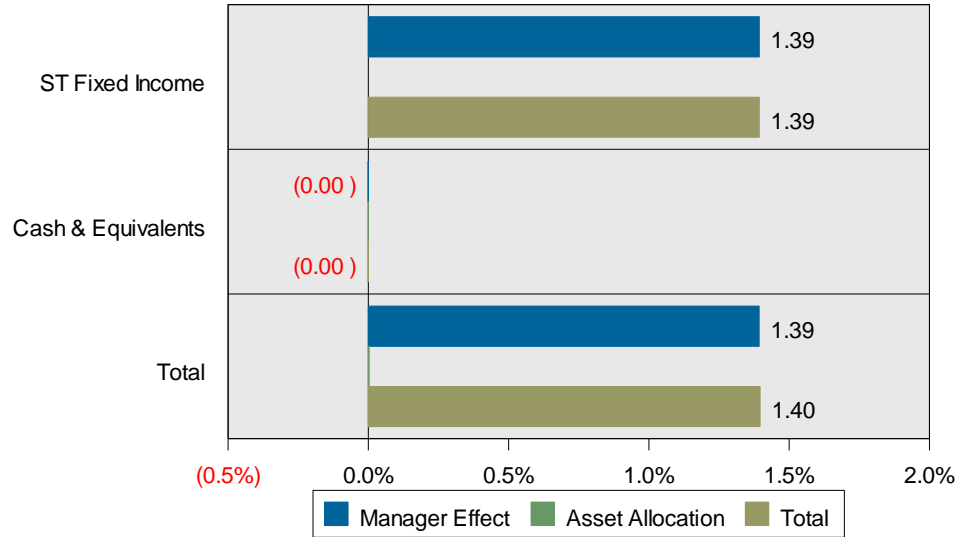
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
ST Fixed Income	99%	99%	3.23%	0.52%	2.69%	0.00%	2.69%
Cash & Equivalents	1%	1%	3.65%	3.59%	0.00%	0.00%	0.00%
Total			3.23%	0.54%	+ 2.69%	+ 0.00%	2.69%

Budget Stabilization Fund Performance and Attribution

As of June 30, 2023

Three Year Annualized Relative Attribution Effects



Returns for 3 Years Ended 06/30/2023

Return Type	Return (%)
Gross	0.53%
Net of fees	0.42%
Target	-0.86%
Net added	1.28%

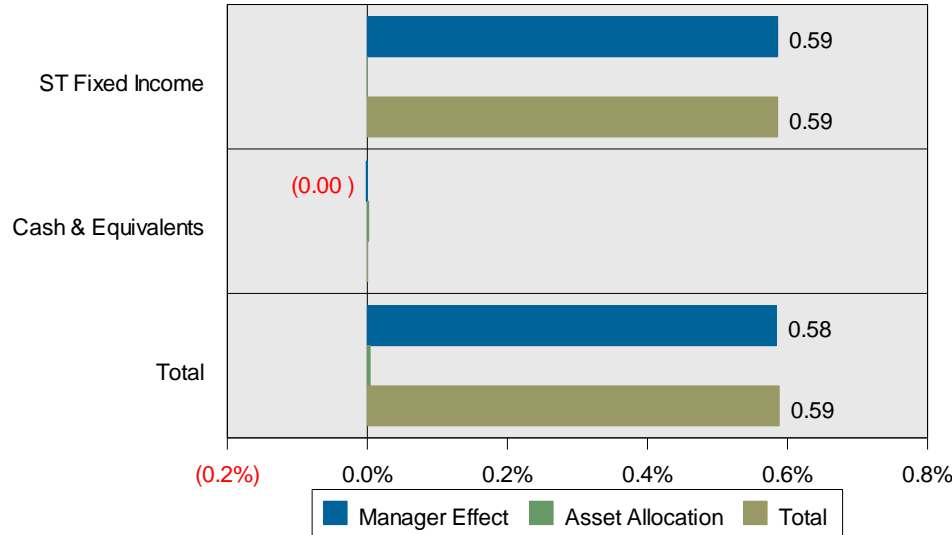
Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
ST Fixed Income	99%	99%	0.52%	(0.88%)	1.39%	0.00%	1.39%
Cash & Equivalents	1%	1%	1.27%	1.27%	(0.00%)	0.00%	(0.00%)
Total			0.53%	(0.86%)	+ 1.39%	+ 0.00%	1.40%

Budget Stabilization Fund Performance and Attribution

As of June 30, 2023

Five Year Annualized Relative Attribution Effects



Returns for 5 Years Ended 06/30/2023

Return Type	Return (%)
Gross	1.72%
Net of fees	1.61%
Target	1.13%
Net added	0.48%

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
ST Fixed Income	99%	99%	1.72%	1.13%	0.59%	0.00%	0.59%
Cash & Equivalents	1%	1%	1.47%	1.55%	(0.00)%	0.00%	0.00%
Total			1.72%	1.13%	+ 0.58%	+ 0.00%	0.59%

Callan

**Legacy Fund
Quarterly Attribution Analysis**

Legacy Fund Attribution – Strategic and Corridor Target

As of June 30, 2023

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	25%	24%	20.11%	19.36%	0.17%	(0.04%)	0.14%
Small Cap	5%	4%	15.09%	12.31%	0.05%	0.05%	0.10%
International Equity	19%	19%	14.30%	13.08%	0.21%	(0.02%)	0.19%
Private Equity	1%	2%	4.30%	4.30%	0.00%	0.11%	0.11%
Domestic Fixed Income	34%	35%	1.40%	(0.94%)	0.84%	0.03%	0.87%
Diversified Real Assets	10%	10%	4.33%	(1.52%)	0.56%	0.01%	0.57%
Real Estate	6%	5%	(9.57%)	(6.60%)	(0.16%)	(0.21%)	(0.37%)
Cash Equivalents	1%	0%	3.58%	3.58%	0.00%	(0.05%)	(0.05%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			8.37%	= 6.82%	+ 1.68%	+ (0.13%)	1.55%

Corridor One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	25%	25%	20.11%	19.36%	0.17%	(0.32%)	(0.15%)
Small Cap	5%	4%	15.09%	12.31%	0.05%	0.07%	0.12%
International Equity	19%	19%	14.30%	13.08%	0.21%	(0.01%)	0.19%
Private Equity	1%	1%	4.30%	4.30%	0.00%	0.00%	0.00%
Domestic Fixed Income	34%	35%	1.40%	(0.94%)	0.84%	(0.04%)	0.81%
Diversified Real Assets	10%	10%	4.33%	(1.52%)	0.57%	0.00%	0.57%
Real Estate	6%	6%	(9.57%)	(6.60%)	(0.16%)	0.00%	(0.16%)
Cash Equivalents	1%	0%	3.58%	3.58%	0.00%	(0.06%)	(0.06%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			8.37%	= 7.05%	+ 1.68%	+ (0.36%)	1.32%

Legacy Fund Attribution – Strategic and Corridor Target

As of June 30, 2023

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	23%	23%	15.57%	14.09%	0.31%	(0.00%)	0.31%
Small Cap	7%	7%	10.87%	10.82%	(0.09%)	0.06%	(0.04%)
International Equity	20%	20%	8.01%	7.94%	0.03%	0.02%	0.05%
Private Equity	0%	1%	6.39%	6.39%	0.00%	0.03%	0.03%
Domestic Fixed Income	34%	35%	(1.81%)	(3.96%)	0.78%	0.03%	0.81%
Diversified Real Assets	10%	10%	5.28%	2.89%	0.21%	0.03%	0.24%
Real Estate	5%	5%	7.68%	6.79%	0.07%	(0.06%)	0.01%
Cash & Equivalents	1%	0%	1.24%	1.24%	0.00%	(0.02%)	(0.02%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			6.28%	= 4.89%	+ 1.31%	+ 0.07%	1.38%

Corridor Three Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	23%	23%	15.57%	14.09%	0.31%	(0.13%)	0.18%
Small Cap	7%	7%	10.87%	10.82%	(0.10%)	0.07%	(0.03%)
International Equity	20%	20%	8.01%	7.94%	0.03%	0.02%	0.05%
Private Equity	0%	0%	6.39%	6.39%	0.00%	0.00%	0.00%
Domestic Fixed Income	34%	35%	(1.81%)	(3.96%)	0.78%	0.05%	0.83%
Diversified Real Assets	10%	10%	5.28%	2.89%	0.22%	0.00%	0.22%
Real Estate	5%	5%	7.68%	6.79%	0.07%	0.00%	0.07%
Cash & Equivalents	1%	0%	1.24%	1.24%	0.00%	(0.02%)	(0.02%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			6.28%	= 4.99%	+ 1.30%	+ (0.02%)	1.29%

Legacy Fund Attribution – Strategic and Corridor Target

As of June 30, 2023

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	23%	22%	12.23%	11.92%	0.08%	(0.03%)	0.05%
Small Cap	7%	7%	3.76%	4.21%	(0.10%)	0.00%	(0.09%)
International Equity	20%	20%	3.99%	3.80%	0.06%	0.03%	0.09%
Private Equity	0%	1%	-	-	0.00%	0.02%	0.02%
Domestic Fixed Income	35%	35%	2.19%	0.77%	0.45%	0.00%	0.45%
Diversified Real Assets	10%	10%	5.80%	3.77%	0.18%	0.01%	0.19%
Real Estate	5%	5%	5.97%	5.90%	0.02%	(0.04%)	(0.02%)
Cash & Equivalents	1%	0%	1.45%	1.45%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			5.68%	5.03%	+ 0.70%	+ (0.05%)	0.65%

Corridor Five Year Relative Attribution Effects

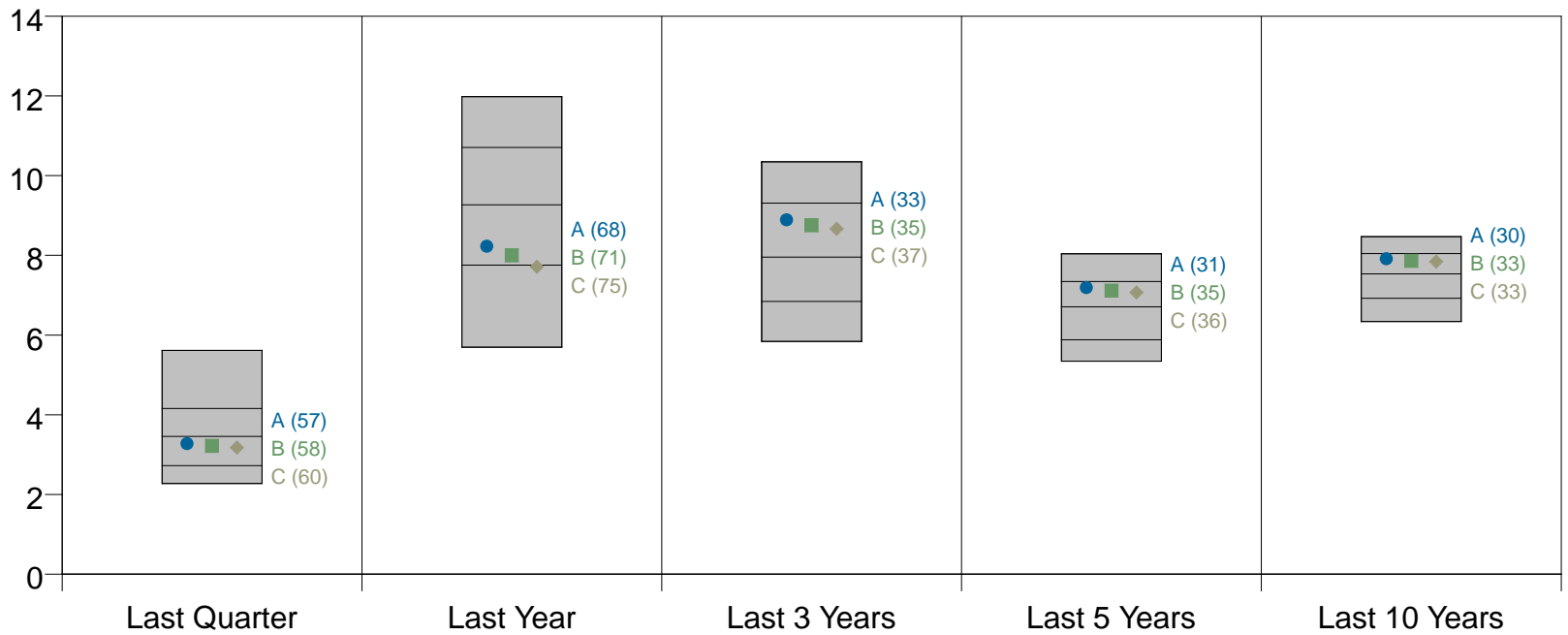
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	23%	23%	12.23%	11.92%	0.08%	(0.10%)	(0.02%)
Small Cap	7%	7%	3.76%	4.21%	(0.10%)	0.02%	(0.08%)
International Equity	20%	20%	3.99%	3.80%	0.06%	0.03%	0.09%
Private Equity	0%	0%	-	-	0.00%	0.00%	0.00%
Domestic Fixed Income	35%	35%	2.19%	0.77%	0.45%	0.00%	0.45%
Diversified Real Assets	10%	10%	5.80%	3.77%	0.18%	0.00%	0.18%
Real Estate	5%	5%	5.97%	5.90%	0.02%	0.00%	0.02%
Cash & Equivalents	1%	0%	1.45%	1.45%	0.00%	(0.03%)	(0.03%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Total			5.68%	5.07%	+ 0.70%	+ (0.08%)	0.61%

Appendix

Consolidated Pension Trust, PERS, and TFFR Performance Rankings

Returns for Periods Ended June 30, 2023

Group: Callan Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	5.62	11.98	10.35	8.04	8.47
25th Percentile	4.16	10.71	9.31	7.35	8.05
Median	3.46	9.27	7.96	6.71	7.54
75th Percentile	2.73	7.76	6.85	5.88	6.93
90th Percentile	2.28	5.70	5.84	5.35	6.34

	A	B	C
NDPERS-Total Fund	3.28	8.23	8.89
NDPEN-Total Fund	3.22	8.00	8.75
NDTFFR-Total Fund	3.18	7.72	8.67

Consolidated Pension Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	27%	19.85%	18.51%	0.32%	(0.51%)	(0.19%)
World Equities	3%	2%	-	-	(0.09%)	0.13%	0.04%
International Equities	17%	18%	13.98%	12.40%	0.23%	(0.00%)	0.22%
Private Equities	10%	8%	9.25%	9.25%	0.00%	(0.01%)	(0.01%)
Domestic Fixed Income	24%	25%	1.68%	2.03%	(0.08%)	(0.00%)	(0.08%)
Real Estate	13%	10%	(10.50%)	(6.60%)	(0.54%)	(0.46%)	(1.00%)
Timber	1%	1%	(5.29%)	11.13%	(0.23%)	(0.02%)	(0.24%)
Infrastructure	6%	7%	8.92%	(3.04%)	0.72%	0.15%	0.87%
Cash & Equivalents	1%	0%	3.92%	3.59%	0.00%	(0.04%)	(0.04%)
Transition Account	0%	0%	-	-	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	8.00%	=	8.44%	+	0.34%	+	(0.78%)	(0.45%)
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Corridor One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	19.85%	18.51%	0.32%	(0.12%)	0.20%
World Equities	3%	2%	-	-	(0.09%)	0.14%	0.05%
International Equities	17%	18%	13.98%	12.40%	0.23%	(0.02%)	0.21%
Private Equities	10%	10%	9.25%	9.25%	0.00%	0.00%	0.00%
Domestic Fixed Income	24%	24%	1.68%	2.03%	(0.08%)	(0.06%)	(0.14%)
Real Estate	13%	13%	(10.50%)	(6.60%)	(0.54%)	0.00%	(0.53%)
Timber	1%	1%	(5.29%)	11.13%	(0.23%)	0.00%	(0.23%)
Infrastructure	6%	6%	8.92%	(3.04%)	0.72%	0.00%	0.72%
Cash & Equivalents	1%	0%	3.92%	3.59%	0.00%	(0.04%)	(0.04%)
Transition Account	0%	0%	-	-	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%

Total	8.00%	=	7.75%	+	0.34%	+	(0.09%)	0.24%
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Consolidated Pension Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	24%	14.04%	13.76%	0.09%	(0.12%)	(0.02%)
World Equities	9%	8%	-	-	0.19%	0.04%	0.23%
International Equities	16%	16%	7.66%	7.26%	0.07%	0.04%	0.11%
Private Equities	8%	8%	22.01%	22.01%	0.00%	(0.24%)	(0.24%)
Domestic Fixed Income	24%	24%	(0.62%)	(1.84%)	0.34%	(0.06%)	0.28%
Real Estate	11%	10%	7.19%	6.79%	0.04%	(0.10%)	(0.06%)
Timber	2%	1%	2.16%	8.67%	(0.09%)	(0.02%)	(0.10%)
Infrastructure	5%	7%	10.75%	6.49%	0.25%	(0.04%)	0.21%
Cash & Equivalents	1%	0%	1.40%	1.27%	0.00%	(0.04%)	(0.04%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			8.75%	8.41%	+ 0.90%	+ (0.55%)	0.35%

Corridor Three Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	25%	25%	14.04%	13.76%	0.09%	(0.16%)	(0.07%)
World Equities	9%	8%	-	-	0.19%	0.05%	0.24%
International Equities	16%	16%	7.66%	7.26%	0.07%	0.03%	0.11%
Private Equities	8%	8%	22.01%	22.01%	0.00%	0.00%	0.00%
Domestic Fixed Income	24%	25%	(0.62%)	(1.84%)	0.34%	0.02%	0.36%
Real Estate	11%	11%	7.19%	6.79%	0.04%	0.00%	0.04%
Timber	2%	2%	2.16%	8.67%	(0.09%)	0.00%	(0.09%)
Infrastructure	5%	5%	10.75%	6.49%	0.25%	0.00%	0.25%
Cash & Equivalents	1%	0%	1.40%	1.27%	0.00%	(0.04%)	(0.04%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			8.75%	7.96%	+ 0.90%	+ (0.10%)	0.80%

Consolidated Pension Trust Attribution – Strategic and Corridor Target

As of June 30, 2023

Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	23%	11.87%	10.37%	0.33%	(0.10%)	0.23%
World Equities	12%	11%	-	-	(0.30%)	(0.00%)	(0.30%)
International Equities	16%	16%	4.45%	3.52%	0.15%	0.00%	0.15%
Private Equities	6%	7%	15.25%	15.25%	0.00%	(0.19%)	(0.19%)
Domestic Fixed Income	24%	24%	2.61%	1.61%	0.27%	(0.03%)	0.24%
Real Estate	11%	10%	6.14%	5.90%	0.03%	(0.10%)	(0.07%)
Timber	2%	2%	3.36%	5.80%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	6%	8.50%	4.98%	0.20%	(0.03%)	0.17%
Cash & Equivalents	1%	0%	1.59%	1.55%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			7.12%	= 6.95%	+ 0.66%	+ (0.49%)	0.17%

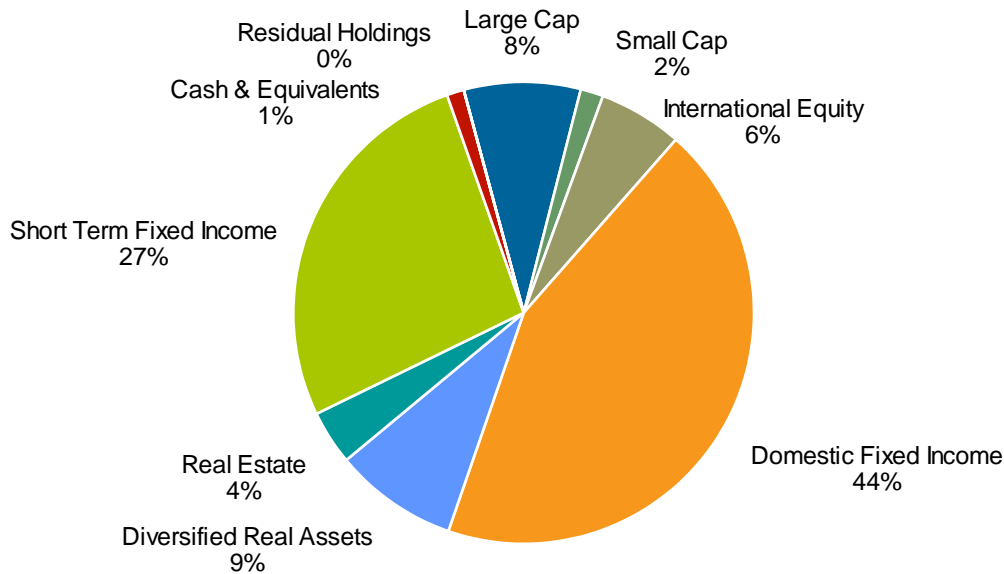
Corridor Five Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	24%	24%	11.87%	10.37%	0.33%	(0.09%)	0.24%
World Equities	12%	11%	-	-	(0.30%)	0.01%	(0.30%)
International Equities	16%	16%	4.45%	3.52%	0.15%	0.00%	0.15%
Private Equities	6%	6%	15.25%	15.25%	0.00%	0.00%	0.00%
Domestic Fixed Income	24%	24%	2.61%	1.61%	0.27%	(0.00%)	0.27%
Real Estate	11%	11%	6.14%	5.90%	0.03%	0.00%	0.03%
Timber	2%	2%	3.36%	5.80%	(0.02%)	0.00%	(0.02%)
Infrastructure	5%	5%	8.50%	4.98%	0.20%	0.00%	0.20%
Cash & Equivalents	1%	0%	1.59%	1.55%	0.00%	(0.02%)	(0.02%)
Transition Account	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
Residual Holdings	0%	0%	-	-	0.00%	0.00%	0.00%
Total			7.12%	= 6.56%	+ 0.66%	+ (0.10%)	0.55%

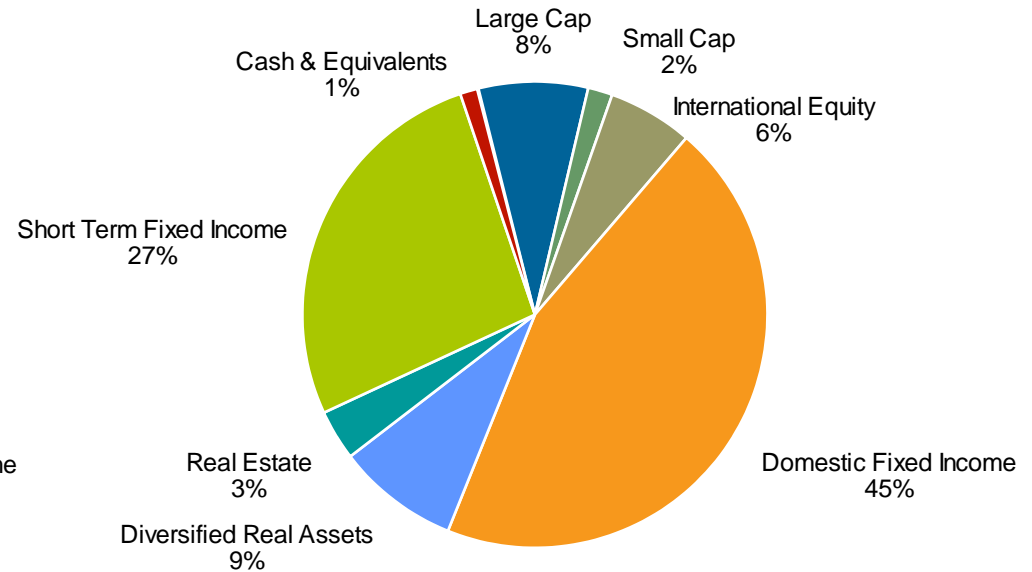
Consolidated Insurance Trust Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation

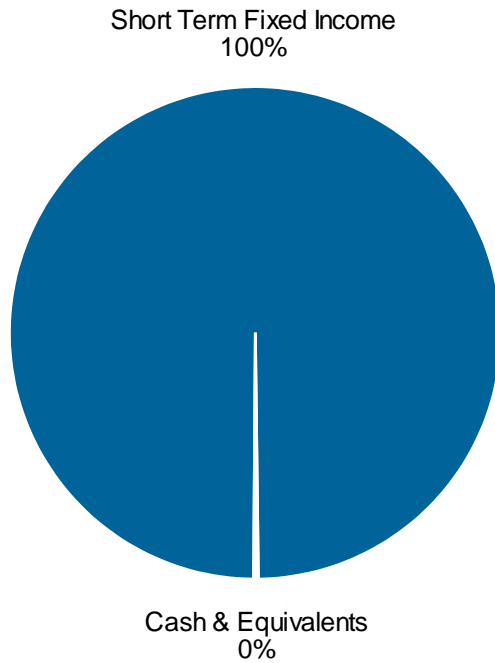


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	243,417	8.2%	7.6%	0.6%	17,662
Small Cap	46,688	1.6%	1.7%	(0.1%)	(2,532)
International Equity	174,816	5.9%	5.9%	(0.0%)	(1,409)
Domestic Fixed Income	1,299,837	43.8%	44.8%	(1.0%)	(30,210)
Diversified Real Assets	257,290	8.7%	8.5%	0.2%	4,685
Real Estate	112,372	3.8%	3.5%	0.3%	8,673
Short Term Fixed Income	796,018	26.8%	26.7%	0.1%	2,167
Cash & Equivalents	36,982	1.2%	1.2%	0.0%	650
Residual Holdings	315	0.0%	0.0%	0.0%	315
Total	2,967,735	100.0%	100.0%		

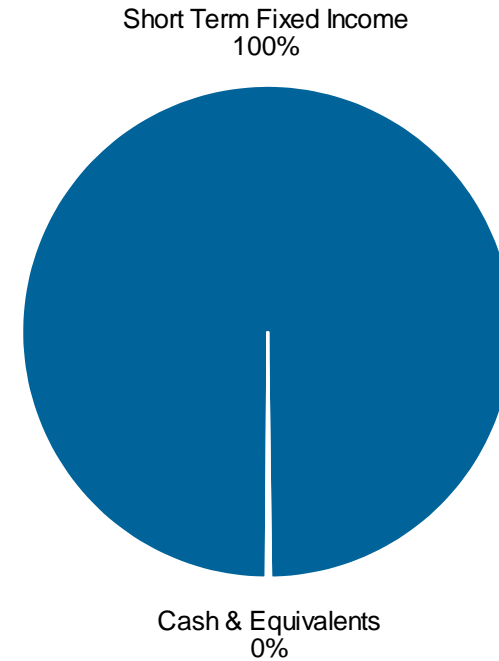
Budget Stabilization Fund Allocation

As of June 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Short Term Fixed Income	737,257	99.7%	99.7%	(0.1%)	(514)
Cash & Equivalents	2,586	0.3%	0.3%	0.1%	514
Total	739,843	100.0%	100.0%		

Callan Update

Published Research Highlights from 2Q23

2023 Private Credit Fees and Terms Study



The Critical Underlying Technology Behind Digital Assets: A Primer for Institutional Investors



Understanding the DNA of the U.S. Life Sciences Sector



Research Café: ESG Interview Series Session



Recent Blog Posts

Biodiversity: A Relatively New Theme for ESG-focused Investors

Kristin Bradbury

How Your Public DB Plan's Returns Compare

Public DB Plan Focus Group

How to Improve DC Plans with DEI

Jana Steele

Additional Reading

Alternatives Focus quarterly newsletter

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Real Estate Indicators market outlook

Callan Institute Events

Upcoming conferences, workshops, and webinars

Callan College

Intro to Alternatives

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with alternative investments like private equity, hedge funds, and real estate and how they can play a key role in any portfolio. You will learn about the importance of allocations to alternatives and how to consider integrating, evaluating, and monitoring them.

– August 23-24, 2023 – Virtual Session via Zoom

Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

– September 26–28, 2023 – Virtual Session via Zoom

– November 1–2, 2023 – Atlanta, Georgia

Please visit our website at callan.com/events-education as we add dates to our 2023 calendar!

Mark Your Calendar

2023 Regional Workshops

October 24, 2023 – New York

October 26, 2023 – Chicago

2024 National Conference

April 8 –10, 2024 – San Francisco

Watch your email for further details and an invitation.

Webinars & Research Café Sessions

Webinar:

The End of the Low-Yield Environment

August 9, 2023 – 9:30am (PT)

SIB Performance Report Appendix September 2023

Performance Reports prepared by Callan for quarter ending June 30, 2023, are available on the RIO website at:

[Newsletters & Reports | Retirement Investment Office \(nd.gov\)](#)

MEMORANDUM

TO: SIB
FROM: Jan Murtha, Executive Director
DATE: September 15, 2023
RE: Governance & Policy Review Committee

I. Summary of Actions

The SIB Governance & Policy Review Committee (GPR Committee) met on September 11, 2023, to discuss the following:

- SIB Governance Manual Review Project
- Governance Models

The Committee took the following actions:

- The committee reviewed, discussed, and provided staff guidance on proposed changes to Section A of the SIB Governance Manual in accordance with the approved work plan to conduct a comprehensive review of the SIB Governance Manual for the upcoming fiscal year. The committee is not bringing forward proposed changes at this time and will present all proposed amendments for first reading at the April 2024 SIB meeting, followed by Second Reading and Final Adoption at the May 2024 SIB meeting. This review is necessary given the creation of an internal investment management program and other governance updates.
- Additional information may be found at: [State Investment Board Governance & Policy Review Committee | Retirement Investment Office \(nd.gov\)](#)

BOARD ACTION REQUESTED: Information only.

MEMORANDUM

TO: SIB
FROM: Scott Anderson, Chief Investment Officer
DATE: September 22, 2023
RE: Investment Committee Update

September 8, 2023, Investment Committee Meeting

The Investment Committee met Friday September 8, 2023. The meeting was called to order and there was an acceptance of the agenda followed by an acceptance of the minutes from the August 11, 2023, meeting.

Mr. Anderson presented a performance review that included a market review, a performance discussion of the PERs, TFFR, WSI and Legacy Fund as well as a brief discussion of the performance of specific public investment managers. The status of the implementation of the high-level investment strategy was also presented.

Lance Zietlow and George Moss then presented a closed session discussion of a private market commitment to a private equity manager subject to negotiations that was approved in open session. Mr. Chin then presented current investment staff research into proxy voting alternatives.

Lastly, in the discussion session Mr. Anderson mentioned that the Internal Direct Implementation Roadmap would be completed by internal staff.

<https://www.rio.nd.gov/sites/www/files/documents/PDFs/SIB%20Investment/Board/Materials/sibinvestmat20230908.pdf>

BOARD ACTION REQUESTED: Information only.

MEMORANDUM

TO: SIB
FROM: Jan Murtha, Executive Director
DATE: September 15, 2023
RE: Securities Litigation Committee

I. Summary of Actions

The SIB Securities Litigation Committee (Committee) met on September 11, 2023, to review and approve the following items:

- Committee elections and annual review of committee charter.
- Securities Litigation Case status review on pending litigation:
 - Daimler – Update.
 - Danske Bank – Update.
 - Nissan – Update.
 - PG&E – Update.
 - Phillips – Update.
 - Volkswagen – Update.
- Securities Litigation Monitoring Report.
- Issued RFP for Securities Litigation firm pool.

II. Committee Discussion

At prior meetings the committee had discussed the options for developing a formal process for selection of outside counsel to represent the SIB in securities litigation matters and for securities litigation monitoring services generally. The committee directed staff to prepare and present an RFP for approval at the September meeting for the purposes of establishing a securities litigation counsel roster. Staff presented and the committee approved an RFP for these services. Staff has worked with state procurement to issue the RFP. The committee also requested presentations at future meetings from both FRT and Northern Trust regarding securities litigation monitoring services.

III. Additional Information

Committee materials may be found on the RIO website here: [State Investment Board Securities Litigation Committee | Retirement Investment Office \(nd.gov\)](https://www.nd.gov/retirement-investment-office/securities-litigation-committee)

BOARD ACTION REQUESTED: Information only.



PORTFOLIO REVIEW WITH TBP

NORTH
Dakota
Be Legendary.

Information Technology

Agenda

- Agency Collaboration
- Delivery Update
- What's Coming
- Q&A

NDIT – RIO Collaboration

NDIT Dedicated Staff

- Technology Business Partner (TBP)
- Information Security Officer (ISO)
- Business Application Support

- End User Compute & Collaboration Team (EUCC)

Delivery Update

Positive Trends and Areas of Improvement

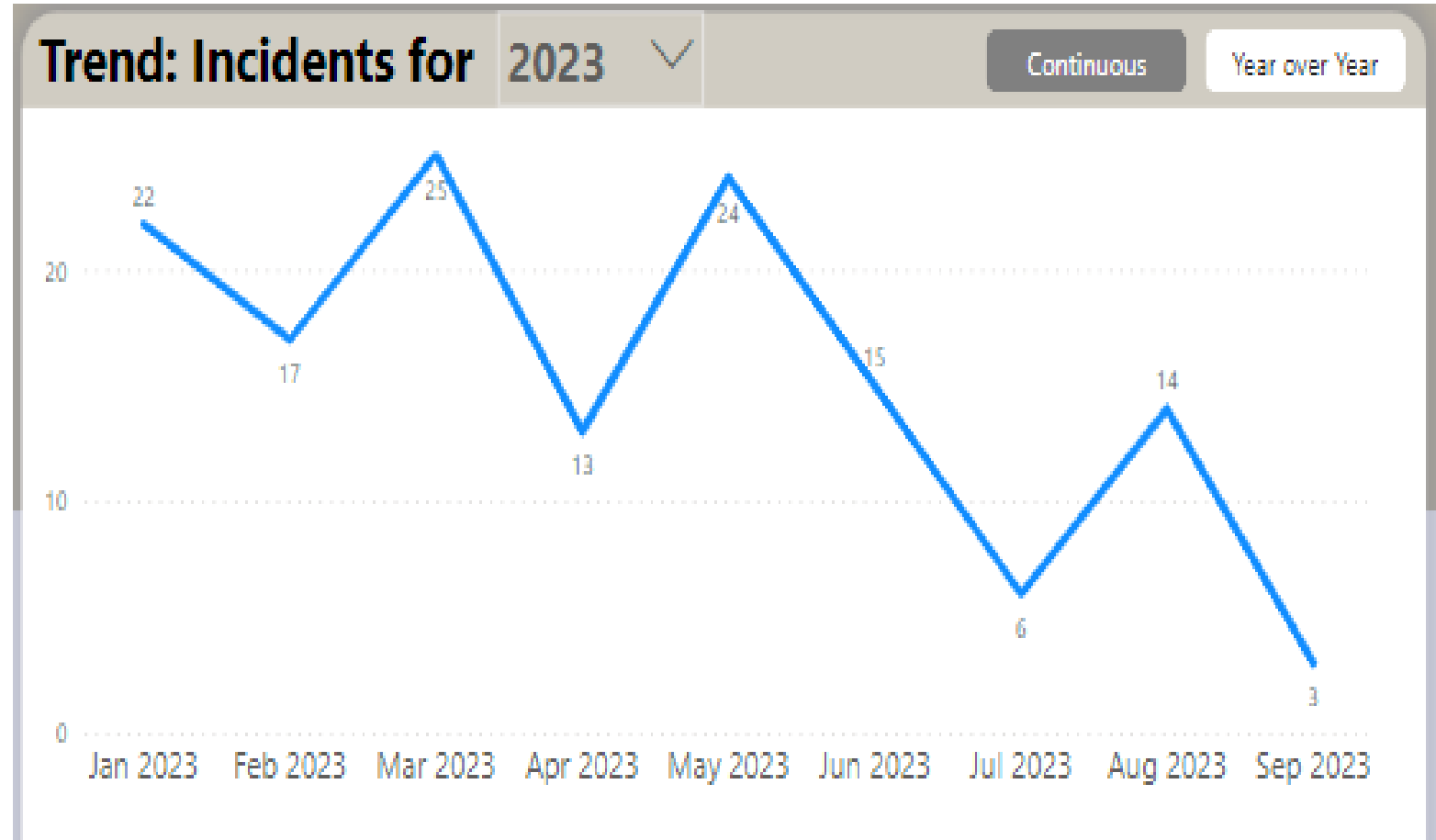
- Service Desk now closing ~50% of all incoming tickets.
- More notes in the tickets & better customer communication overall
- Implementation of Categories and Subcategories on tickets
- Better interaction within various Tiers (Tier 2 & Tier 3 and Security)
- Creation of Agency Dashboards
- Implementation of Managed Print Services

RIO Specific Dashboards

Desktop Incidents:

Summary Metrics for 1/1/2023 - 9/15/2023

- Incidents Created – 141
- Incidents Resolved – 139
- Incidents Outstanding – 2



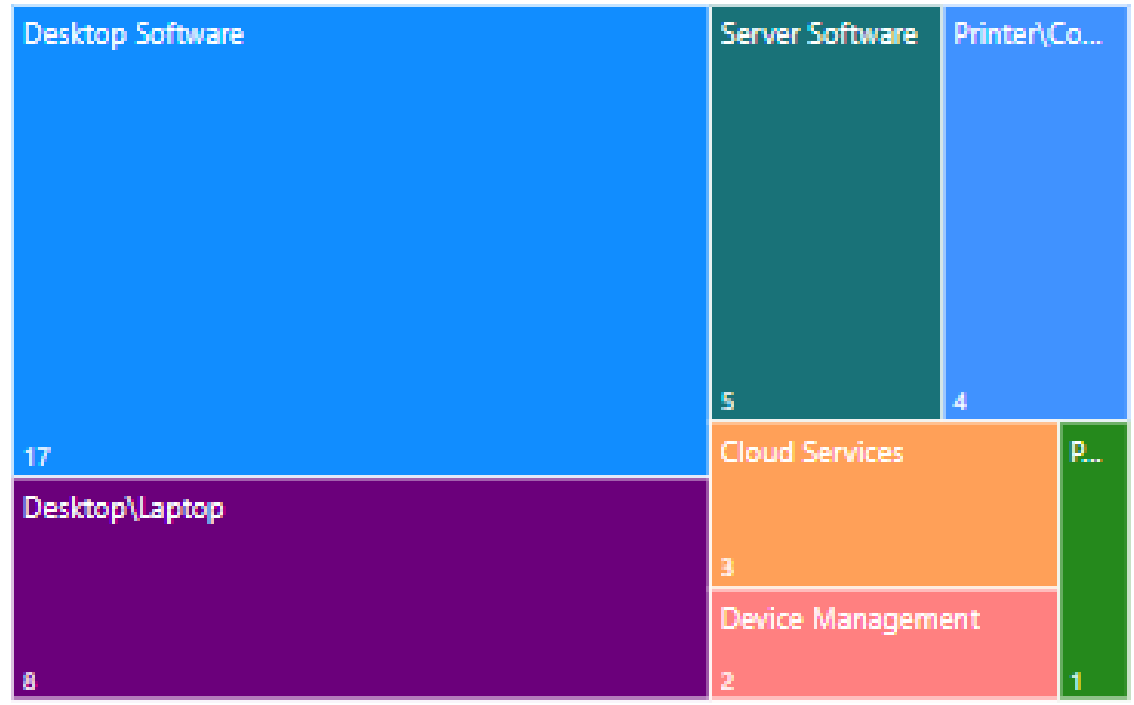
RIO Specific Dashboards

Desktop Incidents by Category:

Incidents by Category



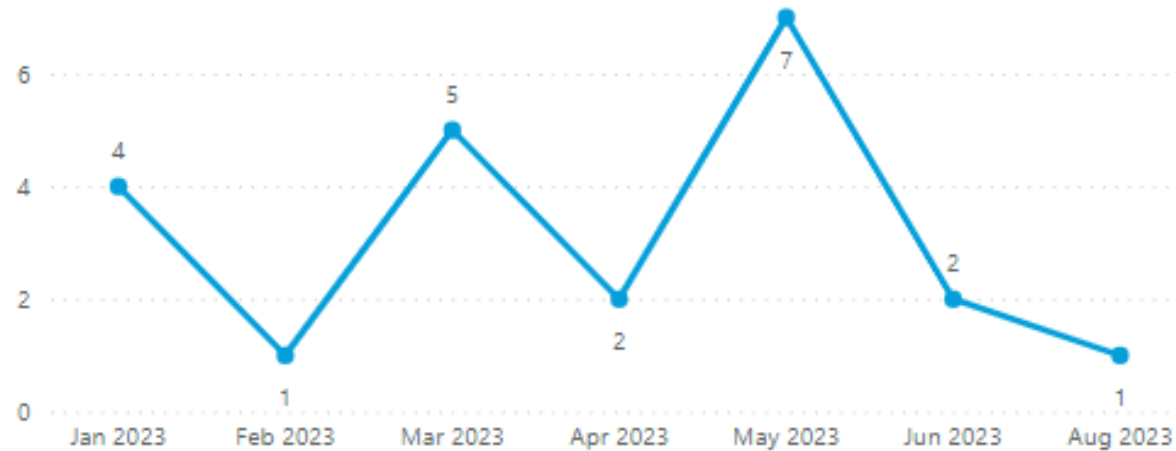
Incidents by Subcategory



RIO First Call Resolution

Summary Metrics for 1/1/2023 - 9/15/2023

Call Count by Month



- Call Count – 22
- Average Minutes Open – 3.5 min
- Resolved by Service Desk – 45%

Call Count by Day of Week



Service Performance SLA Matrix

		IMPACT		
		High-System Wide/Citizen Impact Business Unit, Department, Location	Medium-Multiple Users More than 1 User	Low-Single User Single User
URGENCY	Major Incidents Life-threatening events, All P1 Incidents, Incidents where Business Applications are down, and Major Security Incidents.			
	High Major business process are stopped No workaround	1	2	3
		Response time: 15 minutes Resolution Plan: 4 Hours	Response time: 30 minutes Resolution Plan: 6 Hours	Resolution Plan: 1 Business Day
	Medium Restricts ability to conduct business Reasonable workaround exists	2	3	4
		Response time: 30 minutes Resolution Plan: 6 Hours	Resolution Plan: 1 Business Day	Resolution Plan: 3 Business Days
	Low Does not significantly impede business	3	4	5
Resolution Plan: 1 Business Day		Resolution Plan: 3 Business Days	Resolution Plan: 5 Business Days	

- All incidents reported to the Service Desk will be assessed a priority based upon the following matrix. NDIR will work with customers to identify the impact that an incident has on their core business and the urgency desired for its resolution.
- Impact reflects the likely effect incidents will have upon core business services.
- Urgency is an assessment of the speed with which an incident requires resolution.
- **Together, impact and urgency are blended to determine the priority of an incident.**

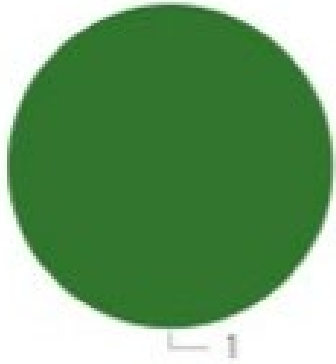
Initiative Intake Submissions

Data Warehouse for Fiscal and Investment Data

- **Request:** We are looking for a solution to unify our data, internally if possible, or through an external IT solution, so that both our Fiscal and Investment teams can better utilize the data for current reporting needs and improved analysis..
- **Current Status:** In Customer Review
- **NDIT Estimate:**
 - NDIT presented an estimate of \$210,000 to \$241,000
 - NDIT working with RIO to determine path forward

RIO Active Projects Status

OVERALL HEALTH



Large Project – Teachers Fund for Retirements Pension System Replacement

- **Key Update:** Focusing on remaining Pilot 3 Elaboration and Design sessions. Pilot 4 Elaboration and Design sessions will be underway in September. Development and System Testing continued for Pilot 2.
- **Current Estimated Go-Live:** September 13, 2024
- **Costs:**
 - Project Budget: \$8,908,001
 - Actual Cost: \$3,487,019


PORTFOLIO COSTS




Managed Print Services

HOW DOES IT WORK?
MANAGED PRINT SERVICES

★ ★ ★ ★ ★

REDUCE YOUR PRINT COST 

Do you know how much time and money are tied up in your printing process? Managed print services make printing simple and easy, so you can concentrate on your core business!

 Managed print services can help to reduce overall costs by simplifying printing process

10-30%

A typical company can reduce print costs by up to 10-30%

BENEFITS

ELIMINATE WORKLOAD

900 OVER 900 PRINTERS ARE MANAGED BY NDIT. BY SWITCHING TO MANAGED PRINT SERVICES TECHNICIANS HAVE MORE TIME TO FOCUS ON OTHER IT NEEDS.

ENABLES PREDICTABLE BUDGETING

STANDARD RATES, NO MORE SEEING INTO THE FUTURE ON HOW MANY SUPPLIES ARE NEEDED.

1 RATE

Project to enroll supported agencies into printer services directly from Hewlett-Packard (HP)

- Service includes:
 - toner & ink (cartridges & disposal)
 - Phone and online support
 - Maintenance & repairs,
 - remote monitoring software

What's Coming?

Upcoming Demand- Projects & Programs

- Artificial Intelligence
- Data Classification Policy
- Printer Logic

Q&A

NORTH
Dakota
Be Legendary.

| Information Technology

MEMORANDUM

TO: TFFR Board of Trustees
FROM: Chad Roberts, DED/CRO
DATE: September 14, 2023
RE: TFFR Ends Report – 3rd Qtr. ending June 30, 2023

This report highlights exceptions to the normal operating conditions of the TFFR program for the period spanning April 1, 2023, through June 30, 2023.

- RIO welcomed a summer business and accounting intern in May. The intern, Madelynn Nelson, will work through August 18, 2023. Madelynn is entering her senior year at Grand Canyon University in Phoenix, AZ, studying finance. She is from Bismarck.
- The DED/CRO and the Retirement Programs Manager attended the Public Retirement Information Systems Management (PRISM) conference in St. Petersburg, FL. The conference focused on the implementation of pension administration systems and fraud and risk related to those systems.
- A contract for actuarial services was awarded to GRS. The contract begins on July 1, 2023. Initial meetings were conducted with the new vendor to plan for the transition and replication.
- The TFFR GPR Committee completed a full review of the TFFR Program Policy Manual. The recommended changes will be presented to the TFFR Board at the July 2023 meeting.
- RIO used the GovDelivery platform for the first time in May to deliver messages to all TFFR active members and employers. This system automates a more manual e-mail and messaging process employed up until it was implemented. The system also allows for metrics related to communications such as number of messages opened, number of users unsubscribing, etc.
- TFFR conducted a member survey of TFFR active members in May. The survey focused on the understanding of retirement and specifically the TFFR plan. The results were analyzed and presented to the board at the June board retreat.
- Pilot 3 of the pension administration project began in April of 2023. The pilot will be completed in July of 2023. Additionally, a cost savings of approximately \$60,000 was achieved through avoiding the duplication of services provided for in the vendor contract which are already available as an agency under the unified NDI plan.
- HB 1150 providing for an exemption from participation in TFFR for qualified military retirees and HB 1219 containing provisions for changes to the plan as recommended by the TFFR board both passed the legislature and were signed in to law.

BOARD ACTION REQUESTED: Board acceptance.

MEMORANDUM

TO: SIB
FROM: Jan Murtha, Executive Director
DATE: September 15, 2023
RE: Executive Limitations/Staff Relations

Ms. Murtha will provide a verbal update at the meeting on staff relations and strategic planning. Including updates on the following topics:

I. New Board & Committee Member Update

Board and committee members have been provided access to current onboarding materials. Sarah Mudder, Communications and Outreach Director, will be present following both the TFFR and SIB meetings in September to answer any questions regarding access to materials. The next in person onboarding meeting has been scheduled for Monday, October 30, 2023, at 1pm.

II. Retirements/Resignations/FTE's/Temporary Assistance:

Position Title*	Status
Sr. Investment Accountant	Position filled by internal candidate.
Investment Accountant (see above for vacancy)	Offer accepted. Anticipated start date Sept. '23
Fiscal/Investment Administrative Assistant	Position filled.
Retirement Accountant	Offer accepted. Anticipated start date Sept. '23
Retirement Program Specialist	Anticipated posting Sept. '23

*New FTEs granted by the 2023 Legislative Assembly. Remaining new FTEs related to the Internal Investment program are expected to be posted in 2nd Quarter 2024.

III. Current Project Activities/Initiatives:

- **TFFR Pioneer Project** – The TFFR Pioneer Project continues with implementation consistent with the project plan. Currently the project is in an elaboration phase involving review of system components. The amount of time spent on the project by various staff members continues to vary from 5 to 25 hours or more per week.
- **Northern Trust Initiative** – In an effort to enhance the infrastructure for the investment program the Investment and Fiscal teams continues to coordinate with Northern Trust for additional functionality/capabilities.
- **Annual Audit Activities** – Staff has been coordinating activities with CLA to complete external audit activities for this past fiscal year.
- **Audit Consultant Report:** Staff has created an Executive Steering committee comprised of the ED, CFO/COO, and IA Supervisor to oversee a project to implement recommendations from Weaver Consulting. Co-sourcing activities will be identified to pursue through a RFP process. A special

meeting of the Audit committee will be convened to approve any related RFP and subsequent vendor selection.

- **Compensation Study RFP:** An RFP for a Compensation Study was issued for consultant services necessary to prepare and present an incentive compensation plan for approval to the Board and develop compensation goals for agency positions. The ERCC issued an award in August and staff is currently finalizing contract negotiations with the successful bidder.
- **Benchmark Consultant RFP:** An RFP was issued for an independent third-party consultant to provide benchmarking services. These services are necessary for the creation of an internal investment program. No responses were received by the initial or extended RFP deadline. Staff proceeded under an agency procurement exception allowed in century code to reach out to potential vendors to procure these services. The Investment Committee interviewed potential vendors in August. The full SIB approved moving forward with consultant services at the August meeting. Staff and the vendor have started kick-off activities.
- **Investment Program Software Solutions:** Staff has identified the procurement activities necessary to facilitate the technology infrastructure necessary to move forward with internal investment management. The Investment Committee has reviewed and approved the corresponding procurement plan.

IV. Board & Committee Presentations August 26, 2023 through September 22, 2023

Staff attended/provided or is scheduled to attend/provide the following presentations to Boards and Committees during the above referenced time period:

- **BND Interim Study Discussion – 8/28/23**
- **TFFR Board Special Meeting – 8/31/23**
- **Public Funds Forum – 9/7/23**
- **SIB Investment Committee – 9/8/23**
- **Cash Management Interim Study Discussion – 9/11/23**
- **SIB Securities Litigation Committee – 9/11/23**
- **SIB GPR Committee – 9/11/23**
- **NDPERS – 9/12/23**
- **NDRTA (Retired Teachers' Association) Conference – 9/13/23**
- **Sovereign Wealth Fund forum – 9/13/23**
- **Red Tape Reduction meeting – 9/15/23**
- **FargoDome Board meeting – 9/20/23**
- **Government Finance Committee (Legislature) – 9/20/23**
- **TFFR Board meeting – 9/21/23**
- **SIB meeting – 9/22/23**

V. Executive Director Education/Travel Activities

September 5-7, 2023, I attended a Public Funds Forum and spoke on a panel with other Executive Directors regarding fund governance. This organization collects and provides information and education on public pension plan administration and public sector institutional investor topics.

BOARD ACTION REQUESTED: Board acceptance.