



**STATE TEACHERS
RETIREMENT SYSTEM
OF OHIO**

275 East Broad Street
Columbus, OH 43215-3771
614-227-4090
www.strsoh.org

March 17, 2023

Ms. Bethany Rhodes, Director
Ohio Retirement Study Council
30 E. Broad St.
2nd Floor
Columbus, OH 43215

Dear Bethany:

Pursuant to Substitute Senate Bill 133 and as required by Section 3307.044 of the Ohio Revised Code, enclosed is a report of the actions of the Audit Committee of the State Teachers Retirement Board for calendar year 2022.

Please don't hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'William J. Neville'.

William J. Neville
Executive Director

Enclosure

To: Ohio Retirement Study Council (ORSC)

Subject: STRS Ohio Audit Committee Reports – 2022 Activities

Date: March 17, 2023

As required by Section 3307.044 of the Ohio Revised Code, the following report outlines the activities of the STRS Ohio Audit Committee and the STRS Ohio Internal Audit Department for the year ending Dec. 31, 2022. This report outlines the following: audit reviews completed during 2022; STRS Ohio Audit Committee meetings and actions; and the 2023 Internal Audit Plan. Audit Committee members of the August 2022 meeting were Robert McFee (Chair/Active Member), Claudia Herrington (Vice Chair/Appointee), Jeffrey Rhodes (Active Member), Wade Steen (Appointee), and Rita Walters (Retired Member/Non-Voting Observer). Audit Committee members of the December 2022 meeting were Carol Correthers (Chair/Active Member), Claudia Herrington (Vice Chair/Appointee), Elizabeth Jones (Retired Member), Wade Steen (Appointee), Scott Roulston (Appointee), and Dale Price (Active Member/Non-Voting Observer).

Audit Reviews Completed During 2022

The attached 2022 Internal Audit Summary lists the audits performed, the scope of each audit, the recommendations to management; management's response and expected implementation dates. The Internal Audit Summaries were provided to all STRS Ohio Board Members in March, August, and December of 2022.

STRS Ohio Audit Committee Meetings and Actions

The Audit Committee met on August 18, 2022, at 9:18 a.m. and was called to order by the committee chair. Committee members taking part were Robert McFee, Rita Walters, Claudia Herrington and Jeffrey Rhodes. Also in attendance were board members Carol Correthers, Rudy Fichtenbaum, Arthur Lard, Scott Roulston and Dale Price. Staff present included Bill Neville, Lynn Hoover, Kathy Boettcher, Jeff Lieser, Robert Vance, Philip Licata, Kimberly VanGundy, Stacey Wideman and Rhonda Hare.

Robert Vance, chief audit executive, reviewed the Quarterly Internal Audit Summary and informed the committee that there were no material findings and Internal Audit had full cooperation from STRS Ohio management. Management has accepted all internal audit recommendations and is in various stages of action-planning or implementation. Mr. Vance informed the committee that the Internal Audit review of the fiscal year 2022 performance-based incentives (PBIs) was complete, and they found the PBIs to be in compliance with the STRS Ohio Board Policy. He provided a brief overview of the closed benefit payment process audit. Mr. Vance informed the committee that Internal Audit has added a previous audit recommendations follow-up section to the summary document. The next update will be presented to the committee at the December meeting. All audit activity for 2022 will be summarized, and the 2023 Internal Audit Plan will be presented at that time for approval.

Mr. Licata provided a summary of the scope of active IT audit testing for security and administration of Cloud-based storage and services. Additionally, he provided a brief summary of closed IT audits that resulted in two recommendations that have been implemented.

Ms. Van Gundy provided an update on completed investments audits and discussed recommendations related to documentation of policies and procedures. She indicated that the staff was highly qualified and cooperative. There were no material weaknesses noted.

Mr. Vance reminded committee members that interaction was not limited to reports and committee meetings, there are no time constraints for communications with the committee and audit staff.

Lynn Hoover, deputy executive director – Finance, introduced Christine Torres and Jen Aras of Crowe LLC to present a summary of the audit plan for the fiscal 2022 financial statement audit. Crowe LLC as the independent public accounting firm, under the oversight of the Ohio Auditor of State, conducts the annual audit of STRS Ohio’s financial statements. Crowe’s audit of the system includes testing of investments, contributions and the pension liability and will issue an independent auditor report and required communications. The independent auditor report and required communications will be presented to the Audit Committee in December.

Ms. Torres reminded committee members they could contact Crowe anytime.

Ms. Hoover introduced Douglas Finlay of ACA Group to present their results of the annual investment verification and performance examination of STRS Ohio for the fiscal year ended June 30, 2022. ACA Group is the third-party verification firm for STRS Ohio and performs rigorous testing and validates to third-party support, the STRS Ohio total fund performance calculation inputs, resulting return and reporting. Their independent tests also verify that STRS Ohio has both complied and designed its policies and procedures to calculate and present performance in compliance with the Global Investment Performance Standards (GIPS®), which are globally recognized and considered industry best practice. ACA Group plans to issue their verification and performance examination report by August 31, 2022, and the final report will be provided to the board in September.

A meeting of the Audit Committee was called to order by the Ms. Correthers, committee chair, on December 15, 2022, at 8:00 a.m. Other committee members present were Ms. Herrington, Ms. Jones and Mr. Roulston. Board members Dr. Fichtenbaum, Dr. Hunt, Mr. Lard, Mr. Price and Ms. Sellers were also in attendance. Staff present included Mr. Neville, Ms. Hoover, Ms. Boettcher, Mr. Vance, Mr. Licata, Ms. VanGundy, Ms. Wideiman and Ms. Ballard.

Mr. Vance, Chief Audit Executive, began with the 2022 Internal Audit Summary. Mr. Vance stated the summary contained no material findings and Internal Audit had full cooperation from management. Additionally, Mr. Vance reported that no inappropriate levels of residual risk were identified by the audit team before presenting statistics on the number of audit recommendations and their implementation status/timeframes. The majority of the outstanding summary recommendations are scheduled to be implemented by management by June 2023. The results of the Board Expenses, Member Benefits Payment Process and Survivor Benefits audits were also presented.

Mr. Licata, I.T. Audit Controls Manager, summarized the purpose and recommendations related to the IT Firewall and Cloud Access Security Broker audits performed in 2022. The purpose and scope of the active Cloud Computing/Infrastructure Review and the results of the closed Cloud Access Security Broker Audit (CASB) and Reemployed Retiree audits were then presented. Ms. VanGundy, Investment Audit Specialist, summarized the purpose and recommendations related to the Performance-Based Incentive (PBI) Review, Securities Lending, and Fixed Income audits performed in 2022.

Mr. Vance then reviewed the Executive Summary of the 2023 Internal Audit Plan and the Risk Assessment Process that determines which audits to conduct. Mr. Licata provided a summary of the purpose of the SWIFT Customer Security Program (CSP) Self-Assessment, the IT Security Logical and Physical Review, and the Data Privacy Review scheduled to be completed in 2023. Ms. VanGundy provided a summary of the purpose of the annual PBI review, External Investment Manager – Fees, Broker/CSA/Research, Trading and Death Match Process audits to be completed in 2023. Mr. Vance discussed the additional administrative areas of the plan that relate to Board/Audit Committee Support, Quality Assurance Reviews, and Fiduciary Audit Support, and Quality Assurance Improvement Program work. He then reviewed the process for requesting audits of areas not on the current-year plan and stated the board would be notified of significant areas of concern, outside of the quarterly or annual reporting cycle, if such concerns were to arise.

Ms. Correthers moved, seconded by Ms. Herrington to enter executive session under authority of Division (G)(5) of Section 121.22 of the Ohio Revised Code for the purpose of discussing matters required to be kept confidential by federal law or state statutes.

Upon roll call the vote was as follows: Ms. Correthers, yes; Ms. Herrington, yes; Ms. Jones, yes; Mr. Roulston, yes. The motion carried.

Executive session began at 8:31 a.m. and adjourned at 9:32 a.m. Public session resumed at 9:45 a.m. and the chair adjourned the committee meeting at that time.

Special Reviews/Projects

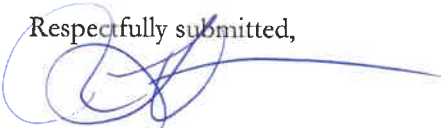
Internal Audit received no requests for supplemental reviews from the Audit Committee or management. See the 2022 Internal Audit Summary, "Other Audit Related Activity" section, for additional departmental activities.

2023 Internal Audit Plan

The 2023 Internal Audit Plan was approved by the STRS Ohio Board on December 15, 2022. A copy of the 2023 Internal Audit Plan is enclosed.

If you have any questions, or need additional information, please feel free to call me at (614) 227-4046.

Respectfully submitted,



Robert L. Vance, MBA, MSA
Chief Audit Executive



2022 Internal Audit Summary

Closed Audits: Previous Audit Recommendations Follow Up

Audit Area	Risk Rating	Scope	Recommendations	Management's Response	Implemented	Implementation or Target Implementation	
Real Estate	Low	Proper Documentation and Approval	For indirect real estate investments, ensure the completeness of vetting and fiduciary oversight documentation and store with consistent file structures in centralized, accessible locations.	Agree	Yes	March 2022	
		Written Policies and Procedures					
		Due Diligence					
		Property Management Company Audit Recommendations	Enhance written procedures and include appropriate checklists for approval documents, acquisitions, monitoring, etc.	Agree	Yes	June 2022	
		Segregation of Duties	Increase key-person risk coverage of indirect real estate investments to ensure continuity during periods of employee turnover.	Agree	No	March 2023	
Compliance Monitoring							
Key Person Risk							

Closed Audits: Recommendations

Audit Area	Risk Rating	Scope	Recommendations	Management's Response	Implemented	Implementation or Target Implementation
Benefit Payment Process	Low	Segregation of Duties	Review procedures to identify areas where additional information and process updates are needed.	Agree (Finance Dept.) Agree (Investments Dept.) Agree (ITS Dept.)	Yes Yes Yes	September 2022 September 2022 December 2022
		Documentation/Sufficiency of Policies and Procedures				
		Monthly Benefit Funding	Create a governing document to memorialize the purpose of the testing group, mandatory participants, meeting frequency, and general details of collective group activity.	Agree	Yes	September 2022
		Due Diligence				
Cloud Access Security Broker (C.A.S.B.)	Low	Service Level Agreement (SLA)	Create a documented policy for end-point security that includes requirements and restrictions for devices, and contains protective measures and controls to manage software and compliance risk.	Agree	No	May 2023
		Identity and Access Management				
		Credentialing	Perform periodic, documented reviews for the Netskope audit logs and incident logs.	Agree	Yes	March 2022
		Security				
Firewall	Low	Configuration	Update the documented policy for Network Firewalls and Secure Network Architecture to ensure staff are aware of requirements and restrictions related to firewall devices. Ensure protective measures and controls to manage firewall security and software compliance risks are in place.	Agree	No	May 2023
		Operating System Logs				
		Physical Security				
		Logical Access	Review firewall rule sets on a defined periodic basis.	Agree	No	January 2023
Change Control Process						
Investment Performance/ PBI Review	Low	Associate Eligibility	Enhance written procedures and confirm all processes are updated and include appropriate checklists.	Agree	No	June 2023
		Compliance with PBI Policy	Consider an independent, periodic review of the PBI policy.	Agree	No	December 2023
Securities Lending	Medium	Written Policies and Procedures	Annually review securities lending compliance checks to ensure thorough testing of new or updated policies and guidelines, as approved, and in their entirety.	Agree	No	June 2023
		Compliance				
		Collateral	Develop a documented approval process for the Approved Borrowers List similar to that of the Approved Issuers List.	Agree	Yes	November 2022
		Income and Expenses				
		Securities Lending Contract	Increase interim compliance testing in key areas of the securities lending program to ensure the lending agent adheres to agreed-upon guidelines throughout each monthly reporting period.	Agree	No	January 2023
		Prior Recommendations				
		Financial Reporting	Review BNY contracts to ensure all current negotiations are represented.	Agree	No	January 2023
Segregation of Duties						
Key Person Risk	Initiate documented cross-training and backup support for the Senior Officer, Investment Policies position to mitigate potential key-person risk.	Agree	No	June 2023		

Closed Audits: No Recommendations

Audit Area	Risk Rating	Scope	Management's Response
Annual Statements	Low	Accuracy of Member Information Accuracy of Statement Information External Contracts Segregation of Duties	N/A
Board Expenses	Low	Existence/Sufficiency of Policies/Procedures Preapproval of Travel & Follow-Up Accuracy of Reimbursements Reasonableness of Authorized Expenses Prohibited Expenses Travel Expense Limitations	N/A
Fixed Income	Low	Written Policies and Procedures Compliance Due Diligence Prior Recommendations Segregation of Duties Accurate Pricing, Positions, and Performance Turnover Best Execution Cancel/Corrects and Failed Trades Key Person Risk	N/A
Member Service Center	Low	Associate Training Scheduling Adherence Performance Monitoring Key Performance Indicator Reviews	N/A
Other Staff Expenses	Low	Compliance with Policy/Procedures/Guidelines Accuracy of Board Reporting	N/A
Reemployed Retirees	Low	Compliance with Ohio Revised Code Input Controls Policies and Procedures	N/A

Active Audits

Audit Area	Risk Rating	Scope	Target Completion
Broker/CSA/Research	N/A	Compliance with Policies and Procedures Segregation of Duties Compliance with Approved Brokers Compliance with SEC Section 28 (e) Broker Utilization Fees Trade Accuracy Proper Allocation	April 2023

B.Y.O.D. (Bring Your Own Device)/Mobile Device	N/A	Compliance with Policies and Procedures Device Management and Security Provisioning and Deprovisioning Process Effectiveness	December 2022
Cloud Computing/Infrastructure	N/A	Identity and Access Management Configuration Security Program Management Issues Logging, Monitoring, and Reporting	June 2023
Death Match	N/A	Compliance with Policies and Procedures Vendor Data Management Monitoring Timeliness of Response/Updates Risk Mitigation	February 2023
Member Income Taxes	N/A	Withholding Change Recommendations Tax Interface Reconciliations Segregation of Duties	January 2022
Member Withdrawals	N/A	Compliance with Ohio Revised Code Refund Estimates Refund Payments Non-Zero Accounts Segregation of Duties	December 2022
Survivor Benefits	N/A	Benefit Calculations Death Refunds Segregation of Duties	December 2022
Trading	N/A	Compliance with Policies and Procedures Segregation of Duties Approved Brokers Best Execution Trade Accuracy Proper Allocation	March 2023

Scheduled Audits

Audit Area	Risk Rating	Scope	Target Start Date
Personal Investment Disclosure	N/A	Compliance with Policies and Procedures Accuracy and Completeness Monitoring	December 2022
Risk Management/Insurance	N/A	Compliance with the STRS Ohio Insurance and Risk Management Manual Adequacy of Existing Insurance Policies Adequacy of Carrier Ratings Accuracy of Premium Payments Segregation of Duties	December 2022

Quality Review Activities

Area/Standard	Description	Summary
IPPF Standard 1000: Purpose, Authority and Responsibility	Internal Audit Charter Update	International Professional Practices Framework (IPPF, or "Standards") requires a periodic review of the IA Charter. Internal Audit (IA) reviewed the current charter to reconcile to mandatory requirements of the updated Standards. The purpose, authority and responsibility were formally defined, consistent with the Definition of Internal Auditing, Code of Ethics, and the Standards. The updated IA Charter will be presented to the Audit Committee/Board for review and final approval after senior management review and discussion.
IPPF Standard 1010 - Recognizing Mandatory Guidance in the IA Charter	Internal Audit Charter Update	The updated charter contains IPPF's language related to areas where compliance with guidance is mandatory. This item will be marked "Complete" upon formal approval of the IA Charter by the Audit Committee/Board.
IPPF Standard 1300- Quality Assurance and Improvement Program (QAIP) IPPF Standard 1310 - Requirements of the Quality Assurance Program	QAIP	During the 2021 annual Audit Committee meeting, the Chief Audit Executive presented the 2022 Audit Plan, which included time allocated to perform internal QAIP activities. Applicable Standards were reviewed for comparison to IA operations. Areas where process improvement opportunities were identified resulted in the activities that populate this newly added section (Quality Review Activities) of the summary and will be presented to keep the Audit Committee informed of relevant issues and progress. The QAIP will remain a permanent part of the Internal Audit Plans going forward. The completion of the internal assessment and action plan will be presented to the Audit Committee/Board during the year. As discussed in the December 2021 annual meeting, the previous external Quality Assessment Review (QAR) was performed in 2013. The 2022 Internal Audit Plan has allotted time for the preparation for the 2023 QAR. IA has begun discussions on identifying qualified third-parties to perform the review, timing, cost, etc. The Audit Committee/Board will be notified of the time of the QAR scheduling and results when completed.
IPPF Standard 1311 - Internal Assessments	QAIP	Standards require periodic reviews be performed through self-assessment and ongoing monitoring. As of the 2022 Internal Audit Plan, IA began reevaluating monitoring activities to identify areas where additional planning is warranted. Self-assessment and ongoing monitoring will become yearly IA administrative activities that are reported to the Audit Committee/Board.
IPPF Standard 1312 - External Assessments	QAR	Standards require the external assessment take place every five years (also referenced in Standard 2070). The IA procedures update will include a "deliverables" discussion with the Audit Committee so that items of significance, and their time of delivery/performance, are documented and scheduled. This action will also aid new Audit Committee members as they seek to understand their roles and responsibilities.
IPPF Standard 2040 - Policies and Procedures	Procedures Update	Standards require the Chief Audit Executive to establish policies and procedures to guide the internal audit activity. Conversion to paperless audits improved efficiency and has resulted in reviews and elimination of some procedural steps. This process is ongoing as IA discusses future changes and the potential impact of audit management software tools. Multiple factors (including QAR/QAIP outcomes) impact which parts of the procedures manual that can be updated and the timing of the updates. Progress will be reported to the Audit Committee/Board.
IPPF Standard 2050 - Coordination and Reliance	Collaboration/Information Sharing	Standards require the CAE coordinate/share information and activities with other internal and external providers of assurance and consulting services which minimizes duplicative efforts. This process is ongoing and will involve documenting participants in the assurance framework.
IPPF Standard 2060 Reporting to Senior Management and the Board	Reporting Conformance	Standards require the reporting of conformance with mandatory guidance in key materials provided to the Audit Committee. As the IA progresses through QAIP/QAR activities, conformance statements will be appropriately integrated. As requested by Mr. Steen, during the December 2021 annual audit committee meeting, future mid-year audit committee meetings will include any updates to the Internal Audit Plan and progress information to allow for more timely notification and discussion.
IPPF Standard 2100 - Nature of Work	Contribution to Governance	Standards require the use of a systematic, disciplined approach to evaluate and contribute to the improvement of the organization's governance, risk-management, and control processes. IA currently engages the senior management team to discuss and consider key elements of enterprise risk management, external audits, and consultant advisories when documenting potential risks and risk mitigation strategies for audit planning purposes. As departmental procedures are updated, this step will be memorialized.
Note: Additional compliance activities will rotate onto the Internal Audit Summary as new projects are initiated and removed when closed. The Audit Committee/Board will be informed of closed items and the details of completion will be documented.		

Other Audit Related Activity

Area	Risk Rating	Subject/Project	Description
Multi-departmental	N/A	SimCorp (Maximis system replacement)	Consult during the various phases of technical and business process implementation.
Multi-departmental	N/A	STRS Ohio Disaster Recovery	Participate in disaster recovery testing review. Strategize on business and human resource needs.
I.T.S.	N/A	IT Framework	Consult with I.T.S. on the evaluation of an IT Framework.
Multi-departmental	N/A	Organizational Risk Assessment	Participate in multi-departmental risk identification/mitigation efforts.
Multi-departmental	N/A	Data Analytics Research/Integration	Consult with I.T.S. to develop useful analytics tools.

Risk Rating Level: (Refers to rating assigned to findings/recommendations)

High: Requires Immediate attention and remediation.

Medium (Med.): Requires near-term attention.

Low: Improvements possible but does not require attention in immediate or near-term.

Composition of Current Audit Committee:

Carol Correthers, Active Member/Chair

Claudia Herrington, Appointee/Vice Chair

Elizabeth Jones, Retired Member

Scott Roulston, Appointee

Wade Steen, Appointee

Dale Price, Active Member/Non-Voting Observer



2023 Internal Audit Plan

INTERNAL AUDIT DEPARTMENT

Mission Statement

To work in partnership with associates to conduct value-added independent appraisals of policies and procedures to contribute to the continuous improvement of STRS Ohio.

Vision Statement

To be recognized as an innovative department that, through independent appraisals and partnered solutions, strives for quality enhancements and the elimination of non-value-added processes.

To create an environment that encourages teamwork, innovation, open communication, empowerment and personal and professional growth.

Guiding Principles

To achieve our mission and vision, we will:

- Prepare a comprehensive, practical, planned program of audit coverage consistent with STRS Ohio's mission, vision and guiding principles.
- Perform audits in compliance with the International Standards for the Professional Practice of Internal Auditing.
- Verify the adequacy and effectiveness of STRS Ohio's systems of administrative, operating and financial controls.
- Understand the associates' business from their perspective.
- Produce objective, clear, concise, constructive and timely reports.
- Maintain contemporary professional proficiency through continuing education and training.
- Seek to continuously improve our team, tools and processes.
- Develop professional expertise for potential career opportunities within STRS Ohio.

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2023 INTERNAL AUDIT SCHEDULE

Audit Area	Description of Audit Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quality Assurance Activities: I/A	Administrative Reviews	[Shaded]											
	Quality Improvement and Compliance Updates	[Shaded]											
Board/Audit Committee Support	Reviews Performed to the Request of the Board/ Audit Committee	[Shaded]											
Internal Audit Recommendation Follow-Up	Document and Report on Recommendation Compliance	[Shaded]											
Fiduciary Audit Support/Response	Recommendation Consultation	[Shaded]											
	Implementation Tracking & Reporting	[Shaded]											
Board Reporting Verification (Funston Recommendation)	Key Board Reporting	[Shaded]											
	Independent Verification	[Shaded]											
SWIFT – Customer Security Program (CSP) – Self Assessment	Internet Access Restrictions	[Shaded]											
	Protection of Critical Systems	[Shaded]											
	Reduce Attack Surface and Vulnerabilities	[Shaded]											
	Physical Security	[Shaded]											
	Access Management	[Shaded]											
Associate Travel Expenses	Written Policies and Procedures	[Shaded]											
	Authorization to Travel	[Shaded]											
Service Retirement Benefits	Renewal/Approval of Expenses												
	General Compliance												
Data Privacy	Documented Policies and Procedures		[Shaded]										
	Benefit Calculations		[Shaded]										
	Management of Overpayments		[Shaded]										
	Segregation of Duties		[Shaded]										
I.T. Security Access Logical/Physical	Data Management and Collection				[Shaded]	[Shaded]							
	Data Security				[Shaded]	[Shaded]							
	Third-Party Compliance and Contractual Agreements				[Shaded]	[Shaded]							
	Incident Management and Escalation				[Shaded]	[Shaded]							
External Quality Assurance Review	Password Settings						[Shaded]	[Shaded]					
	Physical Access						[Shaded]	[Shaded]					
	Privileged Access						[Shaded]	[Shaded]					
	Remote Access						[Shaded]	[Shaded]					
Accounts Payable	Compliance with Internal Auditing Standards							[Shaded]	[Shaded]				
	Appropriate Access									[Shaded]			
External Quality Assurance Review	Segregation of Duties									[Shaded]			
	Vendor Updates and Approvals									[Shaded]			
	Appropriate Review and Signoff									[Shaded]			
	Sufficient Documentation									[Shaded]			

2023 INTERNAL AUDIT SCHEDULE

Audit Area	Description of Audit Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Investment Performance/ PBI Review	Written Policies and Procedures												
	Associate Eligibility												
	Compliance with PBI Policy												
	Segregation of Duties												
	External, Independent Services												
	Independent Recalculations												
External Management: Investments	Written Policies and Procedures												
	Fee Processes												
	Verification												
Board Expenses	Preapproval of Travel												
	Accuracy of Reimbursement												
	Compliance with Rules/Policies												

RISK FACTORS

RISK FACTOR	RISK FACTOR DESCRIPTION	WEIGHTING
A	Adequacy and Effectiveness of the System of Internal Controls	9
B	Major Changes in Technology, Operations, the Organization or the Economy	8
C	Dates and Results of Previous Audits	7
D	Recent or Relevant Changes in Key Personnel	6
E	Complexity or Volatility of Activities	5
F	Asset Size or Transaction Volume	4

RISK ASSESSMENT SCALE

The risk assessment scale is a 9-point system with graduations of risk as follows:

RISK FACTOR DESCRIPTION	SCORE
Extremely Risky	9
Very Risky	7
Risky	5*
Slightly Risky	3
Not Risky	1

* If no previous audit was performed, the auditable area was assessed a 5 — Risky.

ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
ADMINISTRATION							
Associate Travel Expenses	2	1	1	1	1	2	8
Attendance Reporting	4	2	2	2	2	2	14
Benefit Payment Process	2	2	1	2	3	3	13
Board Expenses	1	1	1	1	1	1	6
Fixed Assets – Computer Equipment	3	4	2	3	3	4	19
Flexible Spending Plans	2	2	2	2	3	2	13
HRS: Associate Payroll	2	2	2	3	2	2	13
HRS: Child Care Center	2	2	2	2	2	1	11
HRS: Educational Assistance Program	2	2	2	2	2	2	12
HRS: Exit Interview Management	1	1	5	1	1	1	10
Insurance/Risk Management	2	2	1	1	2	2	10
Legal: Contract Management	3	2	3	2	4	5	19
Legal: OEC Reporting	1	2	1	2	2	1	9
Legal: Records Management	2	2	4	1	2	3	14
Other Staff Expenses	2	1	1	1	1	1	7
Personal Investment Disclosure	1	1	3	3	5	3	16
Purchasing Practices	3	2	3	2	2	3	15
Third-Party Relationships: Administration	3	3	5	3	3	4	21
STRS Ohio Self Insurance Plan	3	2	3	2	3	3	16
Unused Sick and Vacation Leave	2	1	2	2	2	1	10

* See Page 3 for risk factors.

ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
FINANCE							
Accounts Payable	2	1	2	1	2	2	10
Administrative Services: Postage	2	2	2	1	2	3	12
Administrative Services: Security & Safety	3	2	5	1	1	1	13
Annual Reporting	2	3	2	2	2	2	13
Building Services: Maintenance	3	2	3	2	2	2	14
Contribution Reporting	1	3	1	1	3	5	14
Financial Reporting (STRS Ohio)	2	2	2	2	3	4	15
Fixed Assets	3	2	3	3	2	2	15
Investment Accounting	3	5	5	1	5	5	24
Member Income Taxes	1	1	2	2	4	5	15
Member Withdrawals	2	1	2	2	2	2	11
Petty Cash/Café Operations	2	2	2	3	1	1	11
Purchasing Service Credit by Payroll Deduction	2	2	2	2	2	3	13
Tax Management	3	5	5	1	3	4	21
Third-Party Relationships: Finance	3	3	5	4	3	4	22

* See Page 3 for risk factors.

ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
INFORMATION TECHNOLOGY SERVICES							
Active Directory/Azure	5	3	5	1	3	3	20
Business Continuity Plan	3	3	3	3	5	3	20
Cloud Computing/Infrastructure	5	5	5	3	5	3	26
Compliance: B.Y.O.D.	5	3	5	1	3	3	20
Data Analytics	5	3	5	1	5	3	22
Data Management	5	3	5	1	3	3	20
Data Privacy	5	3	5	1	2	3	19
Data Warehouse	5	3	5	1	5	3	22
Database Security	3	3	3	1	4	3	17
Data Loss Prevention (DLP)	3	3	3	1	3	3	16
Email Security	3	3	3	3	5	3	20
External Partners/Assessments	3	3	3	1	4	5	19
Firewall Security	5	3	3	1	5	3	20
I.T. Cloud/CASB	3	3	3	1	3	3	16
I.T. Operations	3	3	3	1	3	3	16
I.T. Security: Change Control	4	3	3	3	3	3	19
I.T. Security: Cyber Vulnerabilities	4	4	5	1	5	3	22
I.T. Security: SimCorp Dimension	5	5	5	5	5	5	30
I.T. Security: Logical/Physical Access	3	3	3	1	5	3	18
I.T. Security: MRI	3	3	3	1	3	3	16
I.T. Security: Workday	3	3	3	3	4	3	19
I.T. Vendor Contract Management	3	3	3	1	5	3	18
Incident Response Plan	5	3	5	1	2	3	19
Intrusion Protection System (IPS)	5	3	5	1	5	3	22
Manage Requests	3	3	3	1	3	3	16
Network Security	5	5	5	3	5	3	26
Project Management (ITS Projects)	4	3	3	3	3	3	19
Social Engineering	5	3	3	1	5	3	20
SWIFT – Customer Security Program (CSP)	5	5	5	5	5	5	30
Web Security	3	3	3	1	5	3	18
Wireless Security	4	3	3	3	3	3	19

* See Page 3 for risk factors.

ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
INVESTMENTS							
Alternative Investments	3	3	2	4	5	4	21
Brokers/CSA/Research	4	3	5	2	3	4	21
Compliance	4	5	5	1	4	4	23
Consultants	5	3	5	1	4	3	21
Custodians/Record Keepers	5	5	5	1	4	3	23
Derivatives	4	4	3	2	5	3	21
Domestic Equities	2	3	3	3	2	4	17
External Management	5	3	5	3	3	3	22
Fixed Income	1	3	1	1	3	4	13
International Investing	3	3	2	3	3	4	18
Investment Performance (PBI Review)	2	2	2	3	3	2	14
Liquidity Reserves	2	2	1	3	2	3	13
Investments Operations	5	5	5	5	3	4	27
Proxy Voting	2	2	1	3	2	3	13
Real Estate	3	3	3	3	3	3	18
Securities Lending	2	3	2	3	3	4	17
Trading	5	3	5	1	3	4	21

* See Page 3 for risk factors.

ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
MEMBER BENEFITS							
Annual Statements	2	3	2	2	2	2	13
Death Match	3	3	3	2	3	3	17
Defined Contribution Plan	2	2	2	2	2	3	13
Disability Benefits	3	2	2	4	2	3	16
Health Care	3	2	2	2	3	4	16
Member Data Processing	3	3	2	2	2	2	14
Member Data Management	3	3	3	1	3	3	16
Member Records Management	2	3	2	2	2	2	13
Member Services Center	2	2	2	1	2	2	11
Purchasing Service Credit	2	3	2	2	2	2	13
Recipient Benefit Processing	2	2	3	2	3	3	15
Reemployed Retirees	2	3	2	2	2	2	13
Service Retirement Benefits	2	3	2	3	3	3	16
Survivor Benefits	3	2	2	3	2	3	15
Third-Party Relationships: Member Benefits	3	3	5	4	3	4	22

* See Page 3 for risk factors.

RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
ADMINISTRATION							
Associate Travel Expenses	18	8	7	6	5	8	52
Attendance Reporting	36	16	14	12	10	8	96
Benefit Payment Process	18	16	7	12	15	12	80
Board Expenses	9	8	7	6	5	4	39
Fixed Assets – Computer Equipment	27	32	14	18	15	16	122
Flexible Spending Plans	18	16	14	12	15	8	83
HRS: Associate Payroll	18	16	14	18	10	8	84
HRS: Child Care Center	18	16	14	12	10	4	74
HRS: Educational Assistance Program	18	16	14	12	10	8	78
HRS: Exit Interview Management	9	8	35	6	5	4	67
Insurance/Risk Management	18	16	7	6	10	8	65
Legal: Contract Management	27	16	21	12	20	20	116
Legal: OEC Reporting	9	16	7	12	10	4	58
Legal: Records Management	18	16	28	6	10	12	90
Other Staff Expenses	18	8	7	6	5	4	48
Personal Investment Disclosure	9	8	21	18	25	12	93
Purchasing Practices	27	16	21	12	10	12	98
Third-Party Relationships: Administration	27	24	35	18	15	16	135
STRS Ohio Self Insurance Plan	27	16	21	12	15	12	103
Unused Sick and Vacation Leave	18	8	14	12	10	4	66

* See Page 4 for the Risk Assessment Scale.

RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
FINANCE							
Accounts Payable	18	8	14	6	10	8	64
Administrative Services: Postage	18	16	14	6	10	12	76
Administrative Services: Security & Safety	27	16	35	6	5	4	93
Annual Reporting	18	24	14	12	10	8	86
Building Services: Maintenance	27	16	21	12	10	8	94
Contribution Reporting	9	24	7	6	15	20	81
Financial Reporting (STRS Ohio)	18	16	14	12	15	16	91
Fixed Assets	27	16	21	18	10	8	100
Investment Accounting	27	40	35	6	25	20	153
Member Income Taxes	9	8	14	12	20	20	83
Member Withdrawals	18	8	14	12	10	8	70
Petty Cash/Café Operations	18	16	14	18	5	4	75
Purchasing Service Credit by Payroll Deduction	18	16	14	12	10	12	82
Tax Management	27	40	35	6	15	16	139
Third-Party Relationships: Finance	27	24	35	24	15	16	141

* See Page 4 for the Risk Assessment Scale.

RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
INFORMATION TECHNOLOGY SERVICES							
Active Directory/Azure	45	24	35	6	15	12	137
Business Continuity Plan	27	24	21	18	25	12	127
Cloud Computing/Infrastructure	45	40	35	18	25	12	175
Compliance: B.Y.O.D.	45	24	35	6	15	12	137
Data Analytics	45	24	35	6	25	12	147
Data Management	45	24	35	6	15	12	137
Data Privacy	45	24	35	6	10	12	132
Data Warehouse	45	24	35	6	25	12	147
Database Security	27	24	21	6	20	12	110
Data Loss Prevention (DLP)	27	24	21	6	15	12	105
Email Security	27	24	21	18	25	12	127
External Partners/Assessments	27	24	21	6	20	20	118
Firewall Security	45	24	21	6	25	12	133
I.T. Cloud/CASB	27	24	21	6	15	12	105
I.T. Operations	27	24	21	6	15	12	105
I.T. Security: Change Control	36	24	21	18	15	12	126
I.T. Security: Cyber Vulnerabilities	36	32	35	6	25	12	146
I.T. Security: SimCorp Dimension	45	40	35	30	25	20	195
I.T. Security: Logical/Physical Access	27	24	21	6	25	12	115
I.T. Security: MRI	27	24	21	6	15	12	105
I.T. Security: Workday	27	24	21	18	20	12	122
I.T. Vendor Contract Management	27	24	21	6	25	12	115
Incident Response Plan	45	24	35	6	10	12	132
Intrusion Protection System (IPS)	45	24	35	6	25	12	147
Manage Requests	27	24	21	6	15	12	105
Network Security	45	40	35	18	25	12	175
Project Management (ITS Projects)	36	24	21	18	15	12	126
Social Engineering	45	24	21	6	25	12	133
SWIFT – Customer Security Program (CSP)	45	40	35	30	25	20	195
Web Security	27	24	21	6	25	12	115
Wireless Security	36	24	21	18	15	12	126

* See Page 4 for the Risk Assessment Scale.

RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
INVESTMENTS							
Alternative Investments	27	24	14	24	25	16	130
Brokers/CSA/Research	36	24	35	12	15	16	138
Compliance	36	40	35	6	20	16	153
Consultants	45	24	35	6	20	12	142
Custodians/Record Keepers	45	40	35	6	20	12	158
Derivatives	36	32	21	12	25	12	138
Domestic Equities	18	24	21	18	10	16	107
External Management	45	24	35	18	15	12	149
Fixed Income	9	24	7	6	15	16	77
International Investing	27	24	14	18	15	16	114
Investment Performance (PBI Review)	18	16	14	18	15	8	89
Liquidity Reserves	18	16	7	18	10	12	81
Investments Operations	45	40	35	30	15	16	181
Proxy Voting	18	16	7	18	10	12	81
Real Estate	27	24	21	18	15	12	117
Securities Lending	18	24	14	18	15	16	105
Trading	45	24	35	6	15	16	141

* See Page 4 for the Risk Assessment Scale.

RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
MEMBER BENEFITS							
Annual Statements	18	24	14	12	10	8	86
Death Match	27	24	21	12	15	12	111
Defined Contribution Plan	18	16	14	12	10	12	82
Disability Benefits	27	16	14	24	10	12	103
Health Care	27	16	14	12	15	16	100
Member Benefits Processing	27	24	14	12	10	8	95
Member Data Management	27	24	21	6	15	12	105
Member Records Management	18	24	14	12	10	8	86
Member Services Center	18	16	14	6	10	8	72
Purchasing Service Credit	18	24	14	12	10	8	86
Recipient Benefit Processing	18	16	21	12	15	12	94
Reemployed Retirees	18	24	14	12	10	8	86
Service Retirement Benefits	18	24	14	18	15	12	101
Survivor Benefits	27	16	14	18	10	12	97
Third-Party Relationships: Member Benefits	27	24	35	24	15	16	141

* See Page 4 for the Risk Assessment Scale.

2023 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
I.T. Cloud/CASB	HIGH	ITS	105	2021		F, I, C, O, PS
I.T. Security: Cyber Vulnerabilities	HIGH	ITS	146	2019		F, I, C, O, PS
International Investing	HIGH	I	114	2020		F, I, C, O
Domestic Equities	HIGH	I	107	2019		F, I, C, O
Real Estate	HIGH	I	117	2020		F, I, C, O
Derivatives	HIGH	I	138	2019		F, I, C, O
Alternative Investments	HIGH	I	130	2021		F, I, C, O
Fixed Income	HIGH	I	77	2021		F, I, C, O
Liquidity Reserves	HIGH	I	81	2020		F, I, C, O
Board Expenses	HIGH	A	39	2022	2023	I, C, O, PS
I.T. Security: Simcorp Dimension	HIGH	ITS	195	N/A		F, I, C, O, PS
Network Security	HIGH	ITS	175	N/A		F, I, C, O, PS
Cloud Computing/ Infrastructure	HIGH	ITS	175	2022		F, I, C, O, PS
SWIFT – Customer Security Program (CSP)	HIGH	ITS	195	N/A	2023	F, I, C, O, PS
Legal: Contract Management	HIGH	A	116	N/A		F, I, C, O, PS
Investment Accounting	HIGH	F	153	N/A		F, I, C, O, PS
Investment Operations	HIGH	I	181	N/A		F, I, C, O
Compliance	HIGH	I	153	N/A		F, I, C, O
Compliance: B.Y.O.D.	MED.	ITS	137	2022		F, I, C, O, PS
Database Security	MED.	ITS	110	2020		F, I, C, O, PS
I.T. Vendor Contract Management	MED.	ITS	115	2020		F, I, C, O, PS
I.T. Operations	MED.	ITS	105	2021		F, I, C, O, PS
I.T. Security: Change Control	MED.	ITS	126	2020		F, I, C, O, PS

Risk Codes:

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- O:** Operational = Risk related to operational efficiencies/inefficiencies
- PS:** Public Sensitivity = No material financial impact but high public sensitivity

2023 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
I.T. Security: Logical/ Physical Access	MED.	ITS	115	2020	2023	F, I, C, O, PS
I.T. Security: Workday	HIGH	ITS	122	N/A		F, I, C, O, PS
Business Continuity Plan	MED.	A	127	2021		F, I, C, O
Member Data Management	MED.	MB	105	2017		C, PS
Financial Reporting (STRS Ohio)	MED.	F	91	2018		I, C, O
Service Retirement Benefits	MED.	MB	101	2017	2023	I, C, O
Annual Statements	MED.	MB	86	2021		I, C, O
Health Care	MED.	MB	100	2018		I, C, O
Contribution Reporting	MED.	F	81	2020		I, C, O
Annual Reporting	MED.	F	86	2020		I, C, O
Defined Contribution Plan	MED.	MB	82	2020		I, C, O
Risk Management/Insurance	MED.	A	65	2022		F, I, C, O
Accounts Payable	MED.	F	64	2018	2023	I, C, O
Data Analytics	MED.	ITS	147	N/A		F, I, C, O, PS
Data Management	MED.	ITS	137	N/A		F, I, C, O, PS
Data Privacy	MED.	ITS	132	N/A	2023	F, I, C, O, PS
Data Warehouse	MED.	ITS	147	N/A		F, I, C, O, PS
Data Loss Prevention (DLP)	MED.	ITS	105	N/A		F, I, C, O, PS
Email Security	MED.	ITS	127	N/A		F, I, C, O, PS
External Partners/ Assessments	MED.	ITS	118	N/A		F, I, C, O, PS
Firewall Security	MED.	ITS	133	2022		F, I, C, O, PS
Incident Response Plan	MED.	ITS	132	N/A		F, I, C, O, PS
Intrusion Protection System (IPS)	MED.	ITS	147	N/A		F, I, C, O, PS

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2023 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
Manage Requests	MED.	ITS	105	N/A		F, I, C, O, PS
Project Management (IT Project)	MED.	ITS	126	N/A		F, I, C, O, PS
Social Engineering	MED.	ITS	133	N/A		F, I, C, O, PS
Web Security	MED.	ITS	115	N/A		F, I, C, O, PS
Wireless Security	MED.	ITS	126	N/A		F, I, C, O, PS
Third Party Relationships: Member Benefits	MED.	MB	141	N/A		F, I, C, O, PS
Third Party Relationships: Finance	MED.	F	141	N/A		F, I, C, O, PS
Third Party Relationships: Administration	MED.	A	135	N/A		F, I, C, O, PS
Active Directory/Azure	MED.	ITS	137	N/A		F, I, C, O, PS
Legal: Records Management	MED.	A	90	N/A		F, I, C, O, PS
Tax Management	MED.	F	139	N/A		F, I, C, O, PS
Trading	MED.	I	141	2022		F, I, C, O
External Management	MED.	I	149	N/A	2023	F, I, C, O
Custodians/Record Keepers	MED.	I	158	N/A		F, I, C, O
Consultants	MED.	I	142	N/A		F, I, C, O
Brokers/CSA/Research	MED.	I	138	2022		F, I, C, O
I.T. Security: MRI	LOW	ITS	105	2020		F, I, C, O, PS
Benefit Payment Process	LOW	A	80	2021		I, C, O
Member Income Taxes	LOW	F	83	2022		I, C, O
Fixed Assets – Computer Equipment	LOW	A	122	2018		I, C, O
Reemployed Retirees	LOW	MB	86	2021		I, C, O
STRS Ohio Self Insurance Plan	LOW	A	103	2020		I, C, O

Risk Codes:

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2023 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
Securities Lending	LOW	I	105	2021		I, C, O
Fixed Assets	LOW	F	100	2018		I, C, O
Personal Investment Disclosure	LOW	A	93	2022		I, C
Disability Benefits	LOW	MB	103	2018		I, C, O
Member Services Center	LOW	MB	72	2021		C, O
Purchasing Service Credit by Payroll Deduction	LOW	F	82	2019		I, C, O
Purchasing Practices	LOW	A	98	2019		I, C, O, PS
Survivor Benefits	LOW	MB	97	2022		I, C, O
Member Records Management	LOW	MB	86	2020		C, O
Building Services: Maintenance	LOW	A	94	2018		I, C, O
Administrative Services: Postage	LOW	A	76	2018		I, C, O
Flexible Spending Programs	LOW	A	83	2019		I, C, O
Attendance Reporting	LOW	A	96	2018		I, C, O
HRS: Associate Payroll	LOW	A	84	2020		I, C, O
Member Benefits Processing	LOW	MB	95	2018		I, C, O
Investment Performance (PBI Review)	LOW	I	89	2022	2023	I, C, O
Member Withdrawals	LOW	F	70	2022		I, C, O
HRS: Educational Assistance	LOW	A	78	2019		I, C, O
Petty Cash/Café Operations	LOW	F	75	2017		I, C, O, PS
HRS: Child Care Center	LOW	A	74	2021		I, C, O

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2023 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
Purchasing Service Credit	LOW	MB	86	2020		I, C, O
Unused Sick and Vacation Leave	LOW	A	66	2019		I, C, O
Associate Travel Expenses	LOW	A	52	2017	2023	I, C, O, PS
Other Staff Expenses	LOW	A	48	2021		I, C, O, PS
Legal: OEC Reporting	LOW	A	58	2020		I, C, O, PS
Proxy Voting	LOW	I	81	2019		I, C, PS
HRS: Exit Interview Management	LOW	A	67	N/A		F, I, C, O, PS
Administrative Services: Security & Safety	LOW	F	93	N/A		C, O, PS
Recipient Benefits Processing	LOW	MB	94	N/A		F, I, C, O, PS
Death Match	LOW	MB	111	2022		F, I, C, O, PS

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