



STATE TEACHERS  
RETIREMENT SYSTEM  
OF OHIO

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March 23, 2018

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

RETIREMENT BOARD CHAIR  
MARK HILL

RETIREMENT BOARD VICE CHAIR  
ROBERT STEIN

EXECUTIVE DIRECTOR  
MICHAEL J. NEHF

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 2017.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Nehf". The signature is written in a cursive style with a large, sweeping flourish at the end.

Michael J. Nehf  
Executive Director

Enclosure

**To:** Ohio Retirement Study Council (ORSC)

**Subject:** STRS Ohio Audit Committee Report – 2017

**Date:** March 21, 2018

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, 2017. This report outlines the following: audit reviews completed during 2017; STRS Ohio Audit Committee meetings and actions; special reviews completed during 2017; and the 2018 Internal Audit Plan. Audit Committee members during 2017 were Mark Hill (Chair/Active Member), Tim Myers (Vice Chair/Active Member), Craig Brooks (Appointee), Wade Steen (Appointee), and Robert Stein (Retired Member/Non-Voting Observer).

### **Audit Reviews Completed During 2017**

The attached 2018 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, June, August, and December 2017.

### **STRS Ohio Audit Committee Meetings and Actions**

*The Audit Committee met on Aug. 17, 2017, at 8:30 a.m.* Committee members present were Mr. Stein, Mr. Myers and Mr. Brooks. Board members Mr. Hill, Mr. McGreevy and Mr. Price were also in attendance. Staff present included Mr. Nehf, Mr. Snyder, Ms. Hoover, Mr. Tackett, Mr. Vance and Mr. Licata.

Mr. Tackett recognized Mr. Licata for a report on the IT Vendor & Contract Review Process. Mr. Licata said the review was based on an inquiry made by Mr. Stein. Internal Audit reviewed three contracts and determined that adequate controls appear to be in place, based on testing performed, to provide reasonable assurance and to mitigate risk for the procedures/contracts reviewed. No formal recommendations were noted.

Mr. Tackett then reviewed the Quarterly Internal Audit Summary. He informed the committee that there were no material findings and that there was full cooperation from management. Management has accepted all recommendations and is in various stages of action-planning or implementation. Mr. Tackett continued that his review of the FY2017 PBIs was complete and that he found the PBIs to be in compliance with the STRS Ohio Board Policy. The next update will be presented to the committee at the December meeting. All audit activity for 2017 will be summarized and the 2018 Internal Audit Plan will be presented at that time for approval.

Mr. Snyder began the review of the 2016-2017 Financial Statement Audit Plan. He informed the committee that Thomas Ray, of CliftonLarsonAllen, has been assigned to STRS Ohio as a new engagement partner. Kevin Rohrs (relationship partner), of CliftonLarsonAllen, was then introduced to present a summary of their plan for the 2016-17 financial statement audit and tentative schedule for issuing an audit report and management letter. Their overall risk assessment

on this engagement is moderate; and CliftonLarsonAllen identified investments, contributions, benefit payments and actuarial assumptions as critical audit areas. STRS Ohio will implement GASB 74 for the year ended June 30, 2017. The final audit report, including management letter, will be presented to the Audit Committee in December.

The meeting adjourned at approximately 9:30 a.m.

Upon roll call, the vote was as follows: Mr. Hill, yes; Mr. Stein, yes; Mr. Brooks, yes; Ms. Correthers, yes; Ms. Hayden, yes; Mr. Myers, yes; Mr. Price, yes; Ms. Walters, yes. Motion carried.

***The Audit Committee met on Dec. 14, 2017, at 8:00 a.m.*** Committee members present were Mr. Myers, Mr. Brooks and Mr. Steen. Board members Mr. Price, Mr. Stein and Ms. Walters were also in attendance. Mr. Hill joined the meeting in progress. Staff present included Mr. Nehf, Mr. Snyder, Ms. Hoover, Mr. Tackett, Mr. Vance and Mr. Licata.

The committee vice chair recognized Mr. Tackett to begin the report. Mr. Tackett informed the committee that the recommendations listed on the 2017 Internal Audit Summary have been implemented by management and staff or are in process of completion.

Mr. Tackett reviewed the Executive Summary of the 2018 Internal Audit Plan, schedule risk factors and risk assessment scale.

Mr. Vance explained the annual audit of board expenses is complete, reporting of expenses are sufficient and will be reviewed periodically. Additionally, Mr. Licata provided an update on an unscheduled audit and found no 2017 audit issues to address.

Mr. Snyder introduced Kevin Rohrs from CliftonLarsonAllen.

Mr. Myers moved, seconded by Mr. Brooks 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 statute.

Upon roll call the vote was as follows: Mr. Myers, yes; Mr. Brooks, yes; Mr. Steen, yes. Motion carried.

Public session resumed and the Audit Committee meeting was adjourned at 8:55 a.m.

Upon roll call the vote was as follows: Mr. Hill, yes; Mr. Stein, yes; Ms. Correthers, yes; Mr. Myers, yes; Mr. Price, yes; Ms. Walters, yes; Ms. Wickham, yes. Motion carried.

### **Special Reviews/Projects**

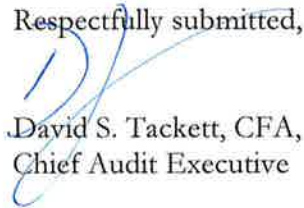
See 2017 Internal Audit Summary: "I. T. Vendor & Contract Review Process"

## **2018 Internal Audit Plan**

The 2018 Internal Audit Plan was approved by the STRS Ohio Board on December 14, 2017. A copy of the 2018 Internal Audit Plan is enclosed.

If you have any questions, or need further information, please feel free to call me at (614) 227-2821.

Respectfully submitted,



David S. Tackett, CFA, CPA, CIA  
Chief Audit Executive

## 2017 Internal Audit Summary

### Closed Audits: Recommendations

Audit Area	Risk Rating	Scope	Recommendations	Management's Response	Implemented	Implementation or Target Implementation	
International Investing	Low	External Manager Fees Monitoring of External Managers Foreign Tax Reclamations Sub-Custodian Controls	STRS Ohio review the foreign tax reclaim process, starting with the internally managed International Investments portfolios as soon as possible to independently corroborate that the custodian is fulfilling its duty to collect tax reclaims on STRS Ohio's behalf.	Agree	Partially	Phased Implementation FY2018	
I.T. Operations	Low	Data Backup	1. Maintain evidence of successful data recovery from data backups to validate testing.	Agree	Partially	FY2018	
		Scheduling Incident Management	2. Document procedures for daily job scheduling.  3. Evaluate the job scheduling process to ensure approvals are obtained and documentation is properly maintained.	Agree  Agree	Yes  Yes	6/22/2017  9/18/2017	
<i>Comment:</i> 1. FY2018, pilot testing to begin for cloud-based storage system that will bring efficiencies and other benefits designed for data storage/disaster recovery efforts.							
IT Security: Change Control	Low	Authorized Changes	For database and operating systems, segregate duties between changes and migration of changes into production.	Agree	Partially*	Phased Implementation FY2018	
		Change Validation Change Approval Process Change Monitoring Process Segregation of Duties	For applications (STARS, Maximis/XIP, PeopleSoft) limit individuals responsible for limited to test/development environment. Revoke unnecessary permissions.	Agree	Yes	9/6/2017	
<i>Comment:</i> *Software tool currently being evaluated.							
STRS Ohio Self-InsurancePlan	Low	Stop-Loss Coverage	Establish a formal, documented monitoring process for the UHC contract.	Agree	No	6/30/2018	
		Administrative Services Fee	Establish documented policies and procedures for determining whether to conduct an audit of UHC to verify compliance with the Administrative Services Agreement.	Agree	No	6/30/2018	
		Shared Savings					
		Segregation of Duties Monitoring of Health Insurance Costs	Document the policies and procedures that control all critical aspects of the Self-Funded Insurance Plan.	Agree	No	6/30/2018	

### Closed Audits: No Recommendations

Audit Area	Risk Rating	Scope	Management's Response
Alternative Investments	N/A	Opportunistic Diversified: Due Diligence  Proper Notification and Approval Monitoring Valuations	
Associate Travel Expenses	N/A	Prior Authorization to Travel Compliance with STRS Ohio Travel Policy Approval/Payment of Travel Expenses	
Associate Payroll	N/A	State and Federal Tax Regulations Access to Payroll Database Accuracy of Associate Net Pay Immigration Guidelines/Compliance	
Board Expenses	N/A	Preapproval of Travel Accuracy of Reimbursement Compliance with Rules/Policies	

Contribution Reporting	N/A	Foundation Management Employee Contribution Management Segregation of Duties Annual Report Management G/L Postings	
Defined Contribution Plan	N/A	Processing of Retirement Plan Selection Forms NRS Contract Compliance Accuracy of Member Statements Segregation of Duties	
Derivatives	N/A	Semi-Annual Derivative Exp. Report Currency Forward Settlements Equity Swap Settlements Counterpart Risk Equity SWAP Collateral Segregation of Duties	
Educational Assistance	N/A	Compliance with Established Policies/Procedures	
I.T. Previous Audit Follow-up	N/A	Review Previous Audit Recommendations to Verify Compliance	
I.T. Vendor & Contract Review Process	N/A	Compliance with Established Policies/Procedures <i>Comment: Review performed at the request of the STRS Ohio Audit Committee.</i>	
Member Income Tax	N/A	Withholding Change Reconciliations Tax Interface Reconciliations Segregation of Duties	
Member Records Mgmt.	N/A	Compliance with Policies/Procedures Imaging - Quality Control Off-Site Storage Facility Inspections Disaster Recovery Consideration	
Member Withdrawals	N/A	Compliance with Ohio Revised Code Refund Estimates Refund Payments 1099Rs Non-Zero Accounts Segregation of Duties	
Other Staff Expenses	N/A	Compliance with Policies Accuracy of Board Reporting	
Performance/PBI Review	N/A	Associate Eligibility Compliance with PBI Policy	
Purchasing Practices	N/A	Compliance with Policies and Procedures Receipt of Goods and Services	
Purchase Service Credit: Payroll Deduction	N/A	Member Applications Processing of Payroll Deduction Segregation of Duties Payroll Deduction Refunds	
Reemployed Retirees	N/A	Compliance with Ohio Revised Code Violations/Collections Calculation Input Controls (STARS)	

## Active Audits

Audit Area	Risk Rating	Scope	Target Completion
Annual Statements	N/A	Accuracy of Member Information Accuracy and Security of Statements External Contracts Segregation of Duties	December-17
Alternative Investments - Private Equity	N/A	Due Diligence Monitoring General Partner Fees Valuations	February-18
Domestic Equities	N/A	Compliance with Investment Policy Monitoring of External Portfolio Managers Investment Management Fees Reporting/Accounting Research Costs Approved Brokers	December-17
Member Service Center	N/A	Associate Training Scheduling Performance Monitoring Key Performance Indicators	January-18
Insurance/Risk Management	N/A	Compliance with the STRS Ohio Insurance and Risk Mgmt. Manual Adequacy of Existing Insurance Policies Adequacy of Carrier's Ratings Accuracy of Premium Payments Segregation of Duties	January-18
I.T. PeopleSoft Security	N/A	Password/Access Controls Configuration Controls Application Level Security	January-18
Liquidity Reserves	N/A	Compliance with Policies Income Purchases/Sales	January-18
Personal Investment Disclosure	N/A	Compliance with Policies Accuracy/Completeness	December-17
Petty Cash	N/A	Compliance with Policies/Procedures Segregation of Duties Proper Cash Handling Physical Security Sufficiency of Audit Trail	December-17

Real Estate	N/A	Property Manager Fees Property-Level Expenses External Compliance Reviews Site Inspections Tenant Surveys Valuations Due Diligence Compliance with Policies and Procedures	February-18
Service Retirement Benefits	N/A	Department Process Documentation Benefit Calculations Management of Overpayments Segregation of Duties	December-17
Securities Lending	N/A	Policies and Procedures Compliance Reinvestment of Cash Collateral Accuracy of Income Approved Borrowers Reconciliations of Monthly Earnings Report	December-17
Survivor Benefits	N/A	Benefit Calculations Student Benefits Segregation of Duties	January-18

#### Other Audit Related Activity

Area	Risk Rating	Subject/Project	Description
I.T.S.	N/A	STARS Upgrade	Consult with ITS and the user community on the security functionality and needs of the system.
Multi-departmental	N/A	DLP (Data Loss Prevention)	Participate on the DLP Committee to implement, monitor and evaluate the data loss prevention as it should function at STRS Ohio.
Multi-departmental	N/A	STRS Ohio Disaster Recovery	Participate in disaster recovery testing review. Strategize on business and human resource needs.

\* Audits were listed as "Under Mgmt. Review", "In Progress", "Audit Initiated", or had not implemented recommendation(s) at the time of the last Annual Audit Summary presentation.

**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:**

Mark Hill, Chair/Active Member

Tim Myers, Vice Chair/Active Member

Craig Brooks, Appointee

Wade Steen, Appointee

Robert Stein, Retired Member/Non-Voting Observer





# 2018 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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# 2018 INTERNAL AUDIT SCHEDULE

Audit Area	Description of Audit Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>Member Data Management</b>	Third-Party Access to Member Data												
	Security of Member Data Transmission												
	Third-Party Operational Control												
<b>Building Maintenance</b>	Preventive Maintenance												
	Associate Training												
	Quality Assurance												
	Purchases of Goods and Services												
<b>Postage</b>	Compliance												
	Disbursements												
<b>Accounts Payable</b>	Vendor Approval Process												
	Vendor Payment History												
	Segregation of Duties/Access Controls												
<b>Disability Benefits</b>	Reexamination Schedules												
	Statement of Employment/Earnings												
	Terminated Benefits — Proper Notification												
	Benefit Calculations												
	Medical Invoice Payments												
<b>Business Continuity Plan</b>	General Compliance with Policies and Procedures												
	Departmental Plan Compliance												
	Documentation of Changes and Approvals												
<b>Fixed Assets</b>	Tracking, Reporting, and Monitoring												
	Depreciation												
	Disposition												
<b>Fixed Income Investments</b>	Compliance with Investment Policies												
	Approved Brokers/Commissions												
	Accuracy of Pricing												
	Due Diligence												
	Monitoring of External Managers												
	Interest Income												
<b>Annual Reporting</b>	Annual Reporting Procedures												
	Access to Annual Reporting Screens												
<b>Fixed Assets — Computer Equip.</b>	Purchasing												
	Accuracy of Computer Inventory Records												
	Disposition												
<b>International Investing</b>	External Management Fees												
	Monitoring of External Managers												
	Foreign Tax Reclamations												
	Sub-Custodian Controls												

# 2018 INTERNAL AUDIT SCHEDULE

Audit Area	Description of Audit Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>Financial Reporting</b>	Security/Segregation						■						
	Journal Entries						■						
	Disaster Recovery Protection						■						
	Audit Trail Integrity						■						
<b>Domestic Equities</b>	Compliance with the Investment Objectives and Policy						■						
	Research Costs						■						
	Monitoring of External Portfolio Managers						■						
	Reporting/Accounting						■						
	External Management Fees						■						
	Approved Brokers						■						
<b>Derivatives</b>	Derivative Exposure Report								■				
	Currency Forward Settlements								■				
	Equity Swap Settlements								■				
	Counterparty Risk								■				
	Equity Swap Collateral								■				
	Liquid Theme/Hedge								■				
	Segregation of Duties								■				
<b>Benefit Services</b>	Annuity Certain Expirations								■				
	Overpayment/Collections								■				
	Disbursement Compliance — Death Benefit								■				
<b>Board Expenses</b>	Preapproval of Travel										■		
	Accuracy of Reimbursement										■		
	Compliance with Rules/Policies										■		
<b>Performance/PBI Review</b>	Associate Eligibility										■		
	Compliance with PBI Policy										■		
<b>Attendance Reporting</b>	Accuracy of Attendance Reporting Data											■	
	Compliance with Policies											■	
	Absence Reporting											■	
	Off-Payroll Monitoring											■	
<b>Health Care</b>	Records Retention/Management —											■	
	Member Application											■	
	Issues Monitoring and Resolution											■	
	Segregation of Duties — Vendor Payments &											■	
	Reconciliation											■	

# RISK FACTORS

<b>RISK FACTOR</b>	<b>RISK FACTOR DESCRIPTION</b>	<b>WEIGHTING</b>
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:

<b>RISK FACTOR DESCRIPTION</b>	<b>SCORE</b>
Extremely Risky	9
Very Risky	7
Risky	5*
Slightly Risky	3
Not Risky	1

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\* 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	
<b>ADMINISTRATION</b>							
Associate Payroll	2	2	2	2	2	2	12
Associate Travel Expenses	2	1	1	1	1	2	8
Attendance Reporting	2	2	2	2	2	3	13
Benefit Payment Process	3	4	3	3	3	3	19
Board Expenses	1	1	1	2	1	1	7
Building Maintenance	2	2	2	2	2	4	14
Business Continuity Plan	3	3	3	3	4	3	19
Child Care Center	2	2	2	2	2	1	11
Educational Assistance Program	2	2	2	2	2	2	12
Fixed Assets — Computer Equip.	3	4	2	3	3	4	19
Flexible Spending Plans	2	2	2	2	3	2	13
Insurance/Risk Management	2	2	1	2	2	2	11
OEC Reporting	1	2	1	2	2	1	9
Other Staff Expenses	2	2	1	1	1	1	8
Personal Investment Disclosure	1	1	3	3	5	3	16
Postage	3	2	2	1	2	3	13
Purchasing Practices	3	2	3	2	2	3	15
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 description of risk factors.



# ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>FINANCE</b>							
Accounts Payable	2	1	2	1	2	2	10
Annual Reporting	2	3	2	2	2	2	13
Contribution Reporting	1	3	1	1	3	5	14
Financial Reporting (STRS Ohio)	3	3	2	2	4	4	18
Fixed Assets	3	2	3	4	2	2	16
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	3	2	2	3	3	15

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>INFORMATION TECHNOLOGY SERVICES</b>							
AIX/ Windows Security	5	3	5	1	5	5	24
Compliance: B.Y.O.D.	5	3	5	1	5	5	24
Database Security	5	3	5	1	5	5	24
I.T. Operations	3	3	3	1	3	3	16
I.T. Security: Change Control	3	3	3	3	3	3	18
I.T. Security: Logical/Physical Access	5	3	3	1	5	5	22
I.T. Security: HIPAA	5	3	5	1	5	5	24
I.T. Security: PeopleSoft Security	5	5	5	5	5	5	30

\* See Page 3 for description of risk factors.

# ASSIGNMENT OF RISK RATING

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>INVESTMENTS</b>							
Alternative Investments	3	3	2	2	4	4	18
Derivatives	3	4	2	3	4	3	19
Domestic Equities	3	4	2	2	4	5	20
Fixed Income	2	4	2	3	3	3	17
International Investing	5	5	2	1	4	4	21
Investment Performance	2	2	2	2	3	2	13
Liquidity Reserves	1	2	1	1	2	3	10
Proxy Voting	2	1	1	1	2	2	9
Real Estate	3	4	3	3	3	3	19
Securities Lending	2	3	2	2	4	4	17

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>MEMBER BENEFITS</b>							
Annual Statements	3	3	2	2	2	2	14
Benefit Services	3	4	2	2	2	2	15
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 Management	3	4	4	2	2	2	17
Member Records Management	2	2	2	2	2	2	12
Member Services Center	2	2	2	1	2	2	11
Purchasing Service Credit	2	3	2	2	2	2	13
Reemployed Retirees	2	3	2	2	2	2	13
Service Retirement Benefits	2	3	2	3	3	4	17
Survivor Benefits	3	2	2	3	2	3	15

\* See Page 3 for description of risk factors.

# RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>ADMINISTRATION</b>							
Associate Payroll	18	16	14	12	10	8	78
Associate Travel Expenses	18	8	7	6	5	8	52
Attendance Reporting	18	16	14	12	10	12	82
Benefit Payment Process	27	32	21	18	15	12	125
Board Expenses	9	8	7	12	5	4	45
Building Maintenance	18	16	14	12	10	16	86
Business Continuity Plan	27	24	21	18	20	12	122
Child Care Center	18	16	14	12	10	4	74
Educational Assistance Program	18	16	14	12	10	8	78
Fixed Assets-Computer Equip.	27	32	14	18	15	16	122
Flexible Spending Plans	18	16	14	12	15	8	83
Insurance/Risk Management	18	16	7	12	10	8	71
OEC Reporting	9	16	7	12	10	4	58
Other Staff Expenses	18	16	7	6	5	4	56
Personal Investment Disclosure	9	8	21	18	25	12	93
Postage	27	16	14	6	10	12	85
Purchasing Practices	27	16	21	12	10	12	98
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 description of risk factors.

# RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>FINANCE</b>							
Accounts Payable	18	8	14	6	10	8	64
Annual Reporting	18	24	14	12	10	8	86
Contribution Reporting	9	24	7	6	15	20	81
Financial Reporting (STRS Ohio)	27	24	14	12	20	16	113
Fixed Assets	27	16	21	24	10	8	106
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	24	14	12	15	12	95

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>INFORMATION TECHNOLOGY SERVICES</b>							
AIX/ Windows Security	45	24	35	6	25	20	155
Compliance: B.Y.O.D.	45	24	35	6	25	20	155
Database Security	45	24	35	6	25	20	155
I.T. Operations	27	24	21	6	15	12	105
I.T. Security: Change Control	27	24	21	18	15	12	117
I.T. Security: Logical/Physical Access	45	24	21	6	25	20	141
I.T. Security: HIPAA	45	24	35	6	25	20	155
I.T. Security: PeopleSoft Security	45	40	35	30	25	20	195

\* See Page 4 for description of risk factors.

# RISK FACTORS WEIGHTED

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>INVESTMENTS</b>							
Alternative Investments	27	24	14	12	20	16	113
Derivatives	27	32	14	18	20	12	123
Domestic Equities	27	32	14	12	20	20	125
Fixed Income	18	32	14	18	15	12	109
International Investing	45	40	14	6	20	16	141
Investment Performance	18	16	14	12	15	8	83
Liquidity Reserves	9	16	7	6	10	12	60
Proxy Voting	18	8	7	6	10	8	57
Real Estate	27	32	21	18	15	12	125
Securities Lending	18	24	14	12	20	16	104

Audit Area	Risk Factors*						Total
	A	B	C	D	E	F	
<b>MEMBER BENEFITS</b>							
Annual Statements	27	24	14	12	10	8	95
Benefit Services	27	32	14	12	10	8	103
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 Data Management	27	32	28	12	10	8	117
Member Records Management	18	16	14	12	10	8	78
Member Services Center	18	16	14	6	10	8	72
Purchasing Service Credit	18	24	14	12	10	8	86
Reemployed Retirees	18	24	14	12	10	8	86
Service Retirement Benefits	18	24	14	18	15	16	105
Survivor Benefits	27	16	14	18	10	12	97

\* See Page 4 for description of risk factors.

# 2018 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
I.T. Security: PeopleSoft Security	HIGH	ITS	195	2017		F, I, C, O, PS
International Investing	HIGH	I	141	2016	2018	F, I, C, O
Alternative Investments	HIGH	I	113	2017		F, I, C, O
Domestic Equities	HIGH	I	125	2016	2018	F, I, C, O
Real Estate	HIGH	I	125	2017		F, I, C, O
Derivatives	HIGH	I	123	2015	2018	F, I, C, O
Fixed Income	HIGH	I	109	2015	2018	F, I, C, O
Liquidity Reserves	HIGH	I	60	2017		F, I, C, O
Board Expenses	HIGH	A	45	2017	2018	I, C, O, PS
AIX/ Windows Security	MED.	ITS	155	2017		F, I, C, O, PS
Compliance: B.Y.O.D.	MED.	ITS	155	2017		F, I, C, O, PS
Database Security	MED.	ITS	155	2014	2018	F, I, C, O, PS
I.T. Security: HIPAA	MED.	ITS	155	2015		F, I, C, O, PS
I.T. Operations	MED.	ITS	105	2017		F, I, C, O, PS
I.T. Security: Change Control	MED.	ITS	117	2016		F, I, C, O, PS
I.T. Security: Logical/ Physical Access	MED.	ITS	141	2016		F, I, C, O, PS
Business Continuity Plan	MED.	A	122	2014	2018	F, I, C, O
Member Data Management	MED.	MB	117	2013	2018	C, PS
Financial Reporting (STRS Ohio)	MED.	F	113	2014	2018	I, C, O
Service Retirement Benefits	MED.	MB	105	2017		I, C, O
Annual Statements	MED.	MB	95	2017		I, C, O
Health Care	MED.	MB	100	2014	2018	I, C, O
Contribution Reporting	MED.	F	81	2016		I, C, O
Annual Reporting	MED.	F	86	2013	2018	I, C, O

**Risk Codes:**

- F: Financial = Risk related to financial impact
- I: Integrity = Risk related to accuracy of data or asset managed/presented
- C: Compliance = Risk related to non-compliance with laws/regulations/internal policies
- O: Operational = Risk related to operational efficiencies/inefficiencies
- PS: Public Sensitivity = No material financial impact but high public sensitivity

# 2018 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
Defined Contribution Plan	MED.	MB	82	2016		I, C, O
Risk Management/ Insurance	MED.	A	71	2017		F, I, C, O
Accounts Payable	MED.	F	64	2015	2018	I, C, O
Benefit Payment Process	LOW	A	125	2015		I, C, O
Member Income Taxes	LOW	F	83	2017		I, C, O
Fixed Assets — Computer Equip.	LOW	A	122	2015	2018	I, C, O
Reemployed Retirees	LOW	MB	86	2016		I, C, O
STRS Ohio Self Insurance Plan	LOW	A	103	2016		I, C, O
Securities Lending	LOW	I	104	2017		I, C, O
Fixed Assets	LOW	F	106	2015	2018	I, C, O
Personal Investment Disclosure	LOW	A	93	2017		I, C
Disability Benefits	LOW	MB	103	2014	2018	I, C, O
Member Services Center	LOW	MB	103	2017		C, O
Purchasing Service Credit by Payroll Deduction	LOW	F	95	2016		I, C, O
Purchasing Practices	LOW	A	98	2016		I, C, O, PS
Survivor Benefits	LOW	MB	97	2017		I, C, O
Member Records Management	LOW	MB	86	2016		C, O
Building Maintenance	LOW	A	86	2015	2018	I, C, O
Postage	LOW	A	85	2015	2018	I, C, O
Flexible Spending Programs	LOW	A	83	2016		I, C, O
Investment Performance	LOW	I	83	2017	2018	I, C, O
Attendance Reporting	LOW	A	82	2015	2018	I, C, O

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# 2018 INTERNAL AUDIT WORK PLAN

Audit Area	Priority	Dept.	Risk Score	Last Audit	Estimated Audit Date	Risk Codes
Associate Payroll	LOW	A	78	2016		I, C, O
Benefit Services (Post Retirement)	LOW	MB	78	2014	2018	I, C, O
Member Withdrawals	LOW	F	70	2017		I, C, O
Educational Assistance Program	LOW	A	78	2016		I, C, O
Petty Cash/Café Operations	LOW	F	75	2017		I, C, O, PS
Child Care Center	LOW	A	74	2015		I, C, O
Purchasing Service Credit	LOW	MB	72	2016		I, C, O
Unused Sick and Vacation Leave	LOW	A	66	2016		I, C, O
Associate Travel Expenses	LOW	A	52	2017		I, C, O, PS
Other Staff Expenses	LOW	A	56	2017		I, C, O, PS
OEC Reporting	LOW	A	58	2015		I, C, O, PS
Proxy Voting	LOW	I	57	2015	2018	I, C, PS

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