



State Teachers
Retirement System
of Ohio

Statement Of Investment Objectives & Policy

Statement of Fund Governance

May 2017

**State Teachers Retirement
System of Ohio**

Statement
Of
Investment Objectives and Policy

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Glossary of Selected Terms

Terms explained in the glossary are *italicized* when they first appear in this document.

Purpose

- 1.1 The State Teachers Retirement System of Ohio (“STRS Ohio”) was established for the benefit of the teachers of the public schools of the State of Ohio. STRS Ohio is dedicated to partnering with STRS Ohio members to provide financial performance and member service to help build financial security for current and future retirees.
- 1.2 The State Teachers Retirement Board of Ohio (the “Board”) is vested with the operation and management of the State Teachers Retirement System of Ohio (“STRS Ohio”) (ORC Section 3307.04). The Board has the full power to invest the assets (the “Fund”) of STRS Ohio (ORC Section 3307.15). The Board is required to “. . . adopt in a regular meeting, policies, objectives or criteria for the operation of the investment program . . .” (ORC Section 3307.15).
- 1.3 To fulfill the statutory requirement of ORC Section 3307.15, the Board has adopted this Statement of Investment Objectives and Policy (the “Statement”) to govern the investment of the Fund. This Statement summarizes the objectives and policies for the investment of the Fund.
- 1.4 The Board has approved these objectives and policies after careful consideration of STRS Ohio benefit provisions, and the implications of alternative objectives and policies.
- 1.5 The Statement has been prepared with five audiences in mind: incumbent, new and prospective Board members; STRS Ohio investment staff; STRS Ohio active and retired members; the Ohio General Assembly and Governor; and agents engaged by the Board to manage and administer the Fund.
- 1.6 The Board regularly, but in no event less than annually, will assess the continued suitability of this Statement, initiate change as necessary, and update this Statement accordingly.
- 1.7 The Board may authorize its administrative officers and committees to act for it in accord with its policies (ORC Sections 3307.04 and 3307.15). The Board, no less frequently than annually, adopts a resolution delegating to the Executive Director and the Deputy Executive Director, Investments, the authority to acquire, dispose, operate and manage the assets of the Fund, subject to the Board’s policies and to subsequent approval by the Board. Consequently, the Executive Director, the Deputy Executive Director, Investments, and the investment staff are responsible for preparing and maintaining numerous supporting management documents that govern the implementation of Board policies, including, but not limited to, individual investment manager mandates and guidelines, agent agreements, and limited partnership documents.
- 1.8 In carrying out the operation and management of STRS Ohio, the Board, the Executive Director, the investment staff and others that are considered fiduciaries as defined in ORC Section 3307.01(K) are subject to various fiduciary responsibilities in ORC Chapter 3307, including, those found in ORC Sections 3307.15, 3307.151, 3307.18, and 3307.181. This Statement incorporates, and is subject to, all provisions of ORC Chapter 3307.
- 1.9 The Board acknowledges its responsibilities under ORC Chapter 3307 and to the extent that this Statement is inconsistent with ORC Chapter 3307, Chapter 3307 shall control.
- 1.95 The Board approved this Statement on May 18, 2017.

2.0 Investment Objective

- 2.1 Subject to the Ohio Revised Code, the investment objectives for the total fund are:
- (a) to earn, over moving thirty-year periods, an annualized *return* that equals or exceeds the *actuarial rate of return (ARR)*, approved by the Board to value STRS Ohio liabilities. The current actuarial rate of return is 7.45%.
 - (b) to earn a rate of return that equals or exceeds the System’s long term Total Fund blended benchmark return with an acceptable level of *risk*, and;
 - (c) maintain sufficient liquidity to satisfy cash flow needs.
- 2.2 The Board believes, based on the assumptions in this Statement, that the investment policies summarized in this Statement will achieve this long-term actuarial objective, at an acceptable level of risk. The Board evaluates risk in terms of the probability of not achieving the ARR over a thirty-year time horizon.

3.0 Key Document Policy

To assist the Board and the Investment staff, the following key documents will be produced or reviewed according to the schedule in Exhibit 1.

Exhibit 1: Key Document Schedule

Key Document	Document Source	Review Schedule
Quarterly Performance Review	Board Consultant	Quarterly
Statement of Investment Objectives and Policy/Fund Governance	STRS Ohio Investment Staff /Reviewed by Board Consultant	Annually
Annual Plan (Incl. Risk Budget)	STRS Ohio Investment Staff/Reviewed by Board Consultant	Annually
Actuarial Study	Actuary/STRS Ohio Finance Dept.	Annually
Asset/Liability Study and Experience Review	STRS Ohio Investment Staff/STRS Ohio Senior Staff/BoardConsultant/Actuary/STRS Ohio Board	At least once in every quinquennial period

4.0 Asset Mix Policy, Risk Diversification and Return Expectations

- 4.1 After careful consideration of the investment objectives, *liability* structure, *funded status*, and liquidity needs of STRS Ohio, and the return, risk, and *risk-diversifying* characteristics of different *asset classes*, the Board approved the *asset mix policy* presented in Exhibit 2 (below). The exhibit also summarizes the Board's return expectations for the asset mix policy and active management.
- 4.2 Fifty-eight percent of the Fund is targeted for investment in *equities*, inclusive of domestic, international, and *private equity* investments. Equity investments have provided the highest returns over long time periods, but can produce low and even negative returns over shorter periods.
- 4.3 The risk of low or negative returns over shorter time periods makes 100% equity policies unsuitable for most pension funds, including STRS Ohio. By investing across multiple equity asset classes, and in lower return but less risky *fixed-income* and *real estate*, the Board is managing and diversifying total fund risk.
- 4.4 Forecasts of capital market and active management returns undertaken by the Board's investment consultant indicate that the Board's asset allocation summarized in Exhibit 2 has an expected ten-year annualized return of 6.84% (without net value added). Over a 30-year period, the Board's investment consultant indicates that this asset mix should generate a return above the actuarial rate of return, without net value added by management.

Exhibit 2: Asset Mix Policy and Return Expectations for STRS Ohio Total Fund

Asset Class	Target Allocation ¹ (%)	Rebalancing Range (%)	Expected 10-Year Policy Returns ² (%)	Expected Management Net Returns ³ (%)	Expected Total Return (%)
Equity					
Domestic	28	23-33	7.35	0.25	7.60
International	23	18-29	7.55	1.00	8.55
Alternatives	17 ⁵	7-21 ⁵	7.09		7.09
-Private Equity	7 ⁵	4-9 ⁵	8.15		8.15
-Opportunistic/Div	10 ⁵	3-12 ⁵	6.35		6.35
Fixed Income	21	13-28	3.00	0.35	3.35
-Core	16	13-21			
-Liquid Treasury	5	0-7			
Real Estate	10	6-13	6.00	1.00	7.00
Liquidity Reserve	1	0-5	2.25		2.25
Total Fund	100		6.84	0.40	7.24⁴

1. The target allocation percentage will be effective as of July 1, 2017. The eventual new target weights will be phased-in over a 24 month period, based on the “Phase-In Target Weights” table in the next section.
2. The expected 10-year policy returns are based on the investment consultant’s capital market assumptions in the 2017 asset liability study for each asset class and total fund using the eventual new target weights.
3. Individual asset class returns (except real estate and alternative investments) are gross value added. The total fund is net of all investment management costs, and real estate and alternative investments are net of external management fees.
4. The 10 year total fund return forecast is 7.24% per year which includes the expected net value added by management and is based on the eventual new target weights.
5. The Private Equity and Opportunistic Diversified target weights and rebalancing ranges are only meant to be general guidelines; the official target weight and rebalancing range is at the total alternative investment asset class level.

Phase-In Target Weights

	Current	July 1, 2017	10/1/2017	4/1/2018	10/1/2018	7/1/2019
Liquidity Reserve	1%	1%	1%	1%	1%	1%
Fixed Income – Core	18%	18%	17%	17%	16%	16%
Fixed Income – Liquid Treasury	N/A	1%	3%	4%	5%	5%
Domestic Eq.	31%	30%	30%	29%	28%	28%
International Eq.	26%	26%	25%	24%	24%	23%
Real Estate	10%	10%	10%	10%	10%	10%
Private Eq.	7%	7%	7%	7%	7%	7%
Opp/Diversified	7%	7%	7%	8%	9%	10%

- 4.5 From the 2017 Asset Liability Study, the 6.84% expected asset mix 10-year policy return was developed with reference to the observed long-term relationships among major asset classes. The Board believes this return expectation is reasonable, but recognizes that the actual ten year asset mix policy return can deviate significantly from this expectation – both positively and negatively. The volatility level associated with this asset mix is approximately 14.46%.
- 4.6 Fund assets are invested using a combination of passive and active management strategies. Passive management reduces both the risk for underperformance and the opportunities of outperformance. Active management is expected to earn net 0.40% per annum of additional returns over moving five-year periods. The Board recognizes that unsuccessful active management can reduce total fund returns.
- 4.7 Investment objectives and guidelines for individual asset classes have been approved by the Board, and are summarized in the following sections.

4.8 Liquidity reserves are kept at a minimum level, but sufficient to cover short-term cash flow needs. STRS Ohio investment staff may use a *derivative overlay* to maintain the level at 1%.

4.9 The Board reviews at least annually its expectations for asset class and active management performance, and assesses how the updated expectations affect the probability that the Fund will achieve the established investment objectives.

5.0 Rebalancing

5.1 Exposures to selected asset classes are actively managed within the rebalancing ranges specified in Exhibit 2. Rebalancing ensures that the Fund's actual asset allocation remains close to the target asset mix policy.

5.2 The Fund's actual asset allocation is monitored at least monthly relative to established asset allocation policy targets and ranges. The timing and magnitude of rebalancing are decided with due consideration to the liquidity of the investments and the associated transaction costs.

5.3 In its Annual Investment Plan prepared for the Board, STRS Ohio Investment staff explains how it is managing asset class exposures based on short- and intermediate-term capital market forecasts.

5.4 The impact of rebalancing decisions on total fund returns is included in investment performance reports to the Board.

6.0 Passive and Active Management within Risk Budgets

6.1 STRS Ohio investment staff has been delegated the responsibility for managing the Fund's exposure to passive and active investment strategies, subject to the constraint that active risk does not exceed Board-approved target *risk budgets* for the total fund and individual asset classes. Active risk will be evaluated compared to risk budgets on an *ex-ante* basis.

6.2 The Board has approved a target risk budget of .60% to 1.20%, with a working range of .20% to 1.60%, annualized active management for the total fund. In exchange for assuming this level of active risk, the Board expects active management to add net 0.40% of annualized excess return over moving five-year periods to judge its effectiveness.

6.3 The Board realizes that actual active management returns will likely be above or below the net 0.40% target over any five-year moving period, and therefore will evaluate the success of STRS Ohio active management program within this context. The Board recognizes that any amount of management return in excess of the associated investment costs improves the security of STRS Ohio plan members.

6.4 Passive management uses low cost *index funds* to access the return streams available from the world's capital markets. Indexed funds control costs, are useful tools for evaluating active management strategies, capture exposure to the more *efficient markets*, and facilitate rebalancing to the policy asset mix.

- 6.5 Active management is expected to earn higher returns than those available from index funds by making value-added security selection and asset mix timing decisions. Unsuccessful active management results in below index fund returns.
- 6.6 Because there are no index fund products for private real estate and alternative investments, these assets must be actively managed. Active versus passive decisions in all asset classes are based upon using the best available information.

7.0 Global Equities - Domestic

- 7.1 Domestic equity is being managed relative to a Board-approved risk budget range of .20% to 1.50%, and is expected to earn at least 0.25% of annualized excess return above the Russell 3000 Index over moving five-year periods.
- 7.2 Key elements of the strategy:
- (a) The portfolio's active management adds value primarily through security selection. Sector tilts by style, economic sectors or *market capitalization* are managed in accordance with the risk budget for domestic equities.
 - (b) The portfolio uses a variety of portfolio management approaches including quantitative and fundamental techniques to diversify the source of excess return.
 - (c) The portfolio uses a combination of internal and external management, utilizing multiple internal portfolio managers and multiple external manager firms to improve the likelihood of achieving excess returns, to diversify risk, and to control costs.
- 7.3 *Short Sales* may be used in the management of STRS Ohio domestic equity portfolios, but may not exceed 10% of the value of the asset class.

8.0 Global Equities - International

- 8.1 International equity is being managed relative to a Board-approved risk budget range of .60% to 2.50%, and is expected to earn at least 1.0% of annualized excess return above a blended benchmark of 80% MSCI World ex-U.S. Index-Net (50% hedged) and 20% MSCI Emerging Markets Index-Net over moving five-year periods.
- 8.2 Key elements of the strategy:
- (a) The portfolio's active management adds value primarily through security selection and country allocation decisions. These decisions have been shown to be the principal sources of the excess return in international equity portfolios. Managers also have the ability to add value through currency management.
 - (b) The portfolio uses a variety of portfolio management approaches including quantitative and fundamental techniques to diversify the source of excess return.
 - (c) Aggregate exposures to countries, currencies, equity styles, and market capitalization are monitored and managed relative to their benchmark exposures.

- (d) The portfolio uses a combination of internal and external management, with multiple internal portfolio managers and multiple external manager firms to improve the likelihood of achieving excess returns, to diversify risk, and to control costs.
- (e) STRS Ohio uses a 50% hedged benchmark on the developed markets portfolios in order to reduce the overall exposure to currency risk. With a 50% hedged benchmark, all developed market portfolios are generally hedged around the 50 percent benchmark level. Active currency positions are taken from time to time in some portfolios at the managers' discretion. This is generally limited to 10 percentage points under or over hedged around the benchmark for the total internal developed portfolio. 3-month currency forwards are the investment instrument generally used for hedges.

8.3 Short Sales may be used in the management of STRS Ohio international equity portfolios, but may not exceed 10% of the value of the asset class.

9.0 Fixed Income

- 9.1 Core Fixed Income Portfolio is being managed relative to a Board-approved risk budget range of 0.1% to 1.50%, and is expected to earn at least 0.35% of annualized excess returns above the Bloomberg Barclays U.S. Universal Index over moving five-year periods.
- 9.2 Core Fixed Income Portfolio is actively managed because active management is generally low cost and market opportunities exist for skilled managers to generate excess returns.
- 9.3 Key elements of the Core Fixed Income Portfolio strategy:
- (a) The portfolio will primarily be managed internally, with multiple external managers used in specialized segments of the market such as high yield and emerging market debt.
 - (b) The portfolio will emphasize issue selection, *credit* analysis, sector allocations, and *duration* management.
 - (c) Aggregate exposures to duration, credit, and sectors are monitored and managed relative to corresponding exposures in the asset class benchmark.
- 9.4 Liquid Treasury Portfolio is expected to be managed within a risk budget range of 0.0% to .25% during normal market conditions, but will have a Board-approved risk budget range of 0.0% to 1.0%. At times, it may be prudent to manage the portfolio to the upper end of the Board-approved risk budget range to accommodate the liquidity needs of the total fund. Returns are expected to track or slightly exceed the annualized returns of the Bloomberg Barclays U.S. Intermediate Treasury Index over moving five-year periods.
- 9.5 The marketability of this portfolio will remain high to maintain substantial flexibility in meeting the liquidity needs of the total fund including benefit payments, asset allocation rebalancing, and diversification.
- 9.6 Key elements of the Liquid Treasury Portfolio strategy:
- (a) The portfolio is internally managed because internal management is generally low cost and provides greater control over the timing of investment decisions in order to meet the rebalancing and cash flow needs of the total fund.
 - (b) The portfolio will emphasize liquidity, issue selection, and minimize transaction costs through achievement of efficient trade execution.
 - (c) Exposures to duration, credit, and sectors are monitored and managed relative to the portfolio benchmark and characteristics.
- 9.7 Short Sales may be used in the management of STRS Ohio fixed income portfolios, but may not exceed 10% of the value of the asset class.

10.0 Real Estate

- 10.1 Real estate investments are being managed relative to a Board-approved risk budget range of 2.00% to 7.00%, and are expected to earn at least 1.00% of annualized excess returns above a blended benchmark over moving five year periods. The Real Estate

Blended benchmark is 85% NCREIF Property Index, and 15% FTSE NAREIT Equity REITs Index.

10.2 Key elements of the strategy:

- (a) Eighty-five percent of Real Estate is actively managed. The portfolio is primarily managed internally, with direct property investments representing most of the portfolio. External Managers are used primarily for specialized segments of the market. Risk is diversified by investing across major property types and geographic areas.
- (b) Leverage up to and including 50%, in aggregate, is permitted for internally managed assets (excluding REITs).
- (c) Publicly traded REITs are passively managed and targeted at 15% of the real estate portfolio to enhance liquidity and diversification.
- (d) *Non-core real estate* investments are limited to 20% of the real estate portfolio. Investment strategies will be characterized as “opportunistic” within the real estate class based on the market conditions prevailing at the time of investment.

10.3 Short Sales may be used, but may not exceed 10% of the value of the asset class.

11.0 Alternative Investments (Private Equity & Opportunistic/Diversified)

- 11.1 Alternative Investments involve separate allocations to *private equity* and *opportunistic/diversified* investments.
- 11.2 Private equity investments are being managed with the objective of earning at least 1% net of fees above domestic public equity markets (Russell 3000 Index) over moving 10-year periods. Private equity investments are traded infrequently and, therefore, risk budget concepts are not applicable.
- 11.3 Key elements of the private equity strategy:
- (a) Private equity investments are 100% actively managed.
 - (b) Private equity risk is diversified by investing across different types of investments including but not limited to *venture capital, leverage buyouts, mezzanine debt or distressed debt*. Private equity investments may be made directly, through funds, fund of funds, or as co-investments.
 - (c) Private equity risk is also diversified by investing across vintage years, industry sectors, investment size, development stage, and geography.
 - (d) Private equity investments are managed by general partners with good deal flow, specialized areas of expertise, established or promising net of fees track records, and fully disclosed and verifiable management procedures.
- 11.4 Opportunistic/diversified investments are being managed with the objective of earning domestic public equity-like returns defined as 1% net of fees below domestic public equity markets (Russell 3000 Index) over moving 10-year periods, but with the added objective of downside protection during equity bear markets. Investments in this category can be liquid or illiquid and, therefore, risk budget concepts are not applicable.
- 11.5 Key elements of the opportunistic/diversified strategy:
- (a) Opportunistic/diversified investments are tactical in nature and typically actively managed.
 - (b) Downside protection during equity bear markets can be achieved and asset class risk is diversified by investing across different types of opportunistic/diversified investments.
 - (c) Opportunistic/diversified investments may be made directly, through funds, fund-of-funds or as co-investments.

12.0 Derivatives

- 12.1 *Derivatives* may be used in the management of STRS Ohio total fund, including all asset classes. Derivatives are typically, but not exclusively, *futures contracts, equity swaps, credit default swaps, option contracts* and option contracts on futures. Options on individual securities, baskets of securities and equity-linked notes, and shorting for

positioning purposes are further examples. Derivatives are both exchange traded and traded over the counter.

- 12.2 Derivative exposures must be of a hedging or positioning nature. As a percentage of Total Fund assets, the underlying exposure of all positioning derivatives will not exceed:
- (a) 5% for fixed income investments;
 - (b) 10% for domestic equity investments;
 - (c) 10% for international equity investments;
 - (d) 1% for real estate investments;
 - (e) 10% for alternative investments.

Hedging derivatives will not be included in the limits above, but must be disclosed in the semiannual derivative exposure report.

- 12.3 Any use of leverage will adhere to asset allocation restrictions and asset class active management risk range constraints.

13.0 Proxy Voting

- 13.1 Common stock proxies are valuable and should be voted in the best interest of STRS Ohio active and retired members.
- 13.2 The Board shall maintain stock proxy voting policies and has directed STRS Ohio investment staff and the proxy voting agents to use these policies as guidelines for voting common stock proxies held by the Fund.

14.0 Ohio Investments

- 14.1 The Board will give due consideration to investments that enhance the general welfare of the State of Ohio and its citizens provided that assets are invested in the best interest of STRS Ohio active and retired members. Preference will be given to Ohio investments offering competitive returns at risk levels comparable to similar investments currently available to the Board.
- 14.2 STRS Ohio investment staff shall maintain and implement an Ohio Investment Plan. The plan shall set forth procedures to assure that a special effort will be made by the STRS Ohio investment staff to examine and evaluate all legal investment opportunities in the state and, where policy criteria are satisfied, to acquire such investments.

15.0 Broker-Dealers

- 15.1 Purchases and sales of publicly traded securities shall be executed with broker-dealers from a list reviewed by the Board. In those rare situations where best execution cannot be achieved through a broker-dealer on the list, the Deputy Executive Director, Investments, may approve the use of a broker-dealer not on the list.

- 15.2 Selection shall be based on an evaluation by the STRS Ohio investment staff as to financial soundness, underwriting capabilities, research services, execution capabilities, and other factors required by the staff to fulfill its assigned investment responsibilities.
- 15.3 Specific transactions will be directed to the broker on that list most capable of providing brokerage services necessary to obtain both the best available price and the most favorable execution.
- 15.4 The Board shall give equal consideration to smaller Ohio-headquartered broker-dealers or smaller broker-dealers with at least one Ohio office and broker-dealers owned and controlled by minorities and/or women, provided the assets are transacted in the best interest of STRS Ohio members.
- 15.5 The Board has a goal to increase the use of Ohio-qualified broker-dealers for the execution of domestic equity and fixed-income securities transactions, when the services that Ohio-qualified broker-dealers provide are equal in quality, cost, scope, and execution capabilities to all broker-dealers approved to transact securities transactions on behalf of the Board.
- 15.6 Each firm listed shall file with the Board on an annual basis such evidence of financial responsibility as required by the Board. This information shall include, but not be limited to, an audited financial statement.
- 15.7 When securities are purchased during underwriting, allocations may be made to dealers not on the approved list provided the managing underwriter is so listed.
- 15.8 When entering into real estate transactions, the Board shall give equal consideration to Ohio firms providing associated professional services, minority-owned and controlled firms, and firms owned and controlled by women.

16.0 Securities Lending

The Board may operate a securities lending program to enhance the income of the Fund. The program must be operated by a bank trustee who follows the custodial requirements of the Treasurer of the State of Ohio and each security lent must be fully collateralized. Results of the program must be reported to the board annually.

17.0 Securities Litigation

Involvement in securities litigation is an important responsibility for institutional investors with major public market exposure. The Board shall maintain a policy to determine the appropriate action to be taken when class action litigation is initiated against a company that generates a significant loss for the Board during the class period.

18.0 Security Valuation

Valuation of investments shall be the total of:

- (a) The primary closing price on the principal registered stock exchange for all common and preferred stocks so listed.

- (b) The official closing price as reflected by either the OTCBB (Over the Counter Bulletin Board) or the Pink Sheets for common and preferred stocks not listed on a registered stock exchange.
- (c) The current value as determined by a qualified independent service for all bonds, notes, and certificates of indebtedness, including accrued income.
- (d) Amortized cost for commercial paper, certificates of deposit, repurchase agreements, and other short-term investments with a maturity of 270 or fewer days.
- (e) Each internally managed real estate property initially valued at acquisition price. Subsequent valuations completed internally or externally as outlined in the Real Estate Valuation Policy Manual. Full, self-contained appraisals completed by an independent external appraiser no less than every third year.
- (f) The most recent external manager valuations for alternative investments and externally managed real estate updated to include current capital activity.
- (g) International equity and external fixed income investments are valued by the sub-custodian using relevant closing market prices and exchange rates and including accrued income for fixed income investments.
- (h) Each internally managed alternative investment initially valued at acquisition price. Subsequent valuations completed internally as outlined in the Alternative Investments Valuation Policy Manual.

19.0 Performance Monitoring and Evaluation

- 19.1 The Board and its agents use a variety of compliance, verification, and performance measurement tools to monitor, measure, and evaluate how well STRS Ohio assets are being managed. Monitoring, reporting, and evaluation frequencies range from live real time performance to daily, weekly, monthly, quarterly, and annualized performance for periods up to 20 years.
- 19.2 The Board has developed a performance monitoring and evaluation system that answers two fundamental fiduciary questions:
- (a) Are the assets being prudently managed? More specifically, are assets being managed in accordance with established laws, policies, and procedures, and are individual investment managers in compliance with their mandates?
 - (b) Are the assets being profitably managed? More specifically, has performance affected benefit security, has capital market risk been rewarded, and has active management risk been rewarded?
- 19.3 If there is a deviation from Board policies, STRS Ohio investment staff is required to provide the Board with a report explaining how the deviation was discovered, the reasons for the deviation, the impact on Fund performance, if any, and steps taken to mitigate future occurrences.
- 19.4 Exhibit 3 is an example of one of many reports that may be used by the Board to monitor and evaluate performance of the total fund. Panel one indicates whether the total fund

return exceeded the actuarial rate of return. Panel two indicates whether the Fund was rewarded for investing in higher return but more risky equity investments. Panel three indicates whether active management added or detracted from returns.

Exhibit 3: Example Total Fund Trustee Summary Report, as of June 30, 2016.

Experienced Returns	Annualized Rates of Return				
	1 Year	3 Years	5 Years	10 Years	20 Years
Have returns affected funded ratio?					
1. Total fund return	0.92%	7.53%	7.66%	6.06%	7.16%
2. Actuarial discount rate	7.75%	7.75%	7.80%	7.90%	7.80%
3. Relative performance (1-2)	-6.83%	-0.22%	-0.14%	-1.84%	-0.65%
Has plan been rewarded for capital market risk?					
4. Total fund blended benchmark return*	0.67%	7.53%	7.69%	6.05%	7.16%
5. Minimum risk/high opportunity cost policy of 91-Day T-Bills	0.19%	0.09%	0.09%	0.91%	2.26%
6. Impact of asset mix policy (4-5)	0.48%	7.43%	7.60%	5.13%	4.90%
Has plan been rewarded for active management risk?					
7. Active management effect (1-4) **	0.25%	0.01%	-0.03%	0.02%	0.00%
8. Net active management return estimated ***	0.11%	-0.12%	-0.15%	-0.10%	-0.11%

* The Total Fund blended benchmark is a blend of the asset class benchmarks based on the total fund's target allocation for the respective asset classes. Effective January 1, 2014 the Total Fund blended benchmark is 18% Barclays U.S. Universal Index, 31% Russell 3000, 26% International Blended Benchmark, 10% Real Estate Blended Benchmark, 14% Alternative Investment actual return, and 1% BofA Merrill Lynch 3-month U.S. Treasury Bill Index.

** Mix of net and gross as per industry conventions (external managers fees for alternative and real estate investment have been deducted, but no fees deducted for internal asset, external equity or external fixed income)

*** After all investment management costs deducted

19.5 Additional reports provide the Board with a multi-level view of investment activities at different levels and over different time horizons. These include:

Performance of the total fund;

Performance of individual asset class strategies;

Performance of internally and externally managed portfolios; and,

Performance of individual external managers.

Glossary

<p><i>Actuarial Rate of Return (ARR):</i> The interest rate used to calculate the present value of a defined benefit plan's future obligations and to determine the size of contribution to the plan.</p>
<p><i>Asset Class:</i> A collection of securities that have conceptually similar claims on income streams and have returns that are highly correlated with each other. Most frequently referenced publicly traded asset classes include domestic equities, fixed income, and cash.</p>
<p><i>Asset Mix Policy:</i> A pension fund's long-term planned exposure to major asset classes, usually expressed in percentages. For example, many US pension funds have an asset mix policy of 60% equities and 40% fixed-income. Empirical studies have confirmed that asset mix policy is the primary determinate of portfolio performance.</p>
<p><i>Benchmark:</i> A standard by which investment performance can be measured and evaluated. For example, the performance of domestic equity managers is often measured and evaluated relative to the benchmark performance of the Russell 3000 Index.</p>
<p><i>Credit:</i> The measure of an organization's ability to re-pay borrowed money. Used most often in managing fixed income portfolios. Organizations with the highest credit rating - those most likely to re-pay money they have borrowed - are assigned a AAA credit rating.</p>
<p><i>Derivatives:</i> A financial obligation that derives its value from the value of one or more other assets, such as a bond or basket of stocks. These other assets are referred to as the "underlying assets or underlying exposures".</p>
<p><i>Derivative Overlay:</i> Combining collateral with derivative instruments to produce returns comparable to the capital markets.</p>
<p><i>Direct Property Investments:</i> Real estate investment strategies in which the investor is the direct owner of the real estate by holding the deed to the real estate property, which could be land and/or buildings.</p>
<p><i>Distressed Debt:</i> An investment strategy that involves purchasing discounted bonds of a financially distressed firm. Distressed debt investors frequently convert their holdings into equity and become actively involved with the management of the distressed firm.</p>
<p><i>Duration:</i> A financial measure used by investors to estimate the price sensitivity of a fixed-income security to a change in interest rates. For example, if interest rates increase by one percentage point, a bond with a 5-year duration will decline in price by 5 percent.</p>

<p><i>Efficient Markets:</i> A market in which security prices rapidly reflect all information about securities and, by implication, active managers find it more difficult to pick stocks that consistently beat the performance of an index fund.</p>
<p><i>Equities:</i> Investments that represent ownership in a company and therefore a proportional share of company profits. For example, owning common shares of General Motors Corporation is an equity investment.</p>
<p><i>Fixed-Income:</i> Debt obligations of corporations and governments that specify how money previously borrowed is to be repaid. Typically, money is repaid by a series of semi-annual interest payments of fixed amounts, and final repayment of principal.</p>
<p><i>Funded Status:</i> A comparison of plan assets with the plan liability (e.g. the actuarial accrued liability (AAL)). When fund assets are greater than the AAL, the plan is overfunded. If fund assets are less than the AAL, the plan is underfunded and the state has a net liability position with respect to its pension plan.</p>
<p><i>Futures Contract:</i> A standardized agreement to purchase or sell a defined amount of a particular security or commodity at a fixed price on a set future date.</p>
<p><i>Hedged Currency:</i> A term applied to a portfolio of non-domestic stocks or bonds that is unaffected by changes in the relative value of the domestic and foreign currencies. Forward currency contracts are typically used to hedge a portfolio against currency risk.</p>
<p><i>Index Fund:</i> A portfolio management strategy that seeks to match the composition and performance of a selected market index, such as the Russell 1000.</p>
<p><i>Leveraged Buyouts (LBO):</i> The acquisition of a firm or business unit, typically in a mature industry, with a considerable amount of debt. The debt is then repaid according to a strict schedule that absorbs most of the firm's cash flow.</p>
<p><i>Liability:</i> A claim on assets by individuals or companies. In a pension context, liabilities represent the claim on fund assets by active and retired members of the pension plan.</p>
<p><i>Market Capitalization:</i> The value of a corporation as determined by multiplying the price of its shares by the number of shares outstanding. Investors often use market capitalization as an indicator of portfolio risk or volatility. In general, smaller capitalized companies are more volatile or risky than larger capitalized companies.</p>
<p><i>Mezzanine Debt:</i> Either a financing undertaken shortly before an initial public offering, or an investment that employs subordinated debt that has fewer privileges than bank debt but more than equity and often has attached warrants.</p>
<p><i>Non-core Real Estate:</i> A real estate investment style best described as opportunistic, which has higher risk but higher expected returns. Non-core real estate may be very illiquid, not currently income-producing, distressed purchases, or highly leveraged. Examples of non-core real estate are international real estate funds, opportunistic real estate funds, and real estate projects at the development stage of investment.</p>

<p><i>Opportunistic/Diversified:</i> Investments that are primarily modeled on hedge funds, commodities, and infrastructure, but can include “opportunistic” investments from other asset classes, such as commercial mortgage-backed securities, non-agency mortgages, and distressed or mezzanine debt, and may include low volatility equity, defensive equity, emerging market equities, master limited partnerships, listed private equity, closed-end funds, diversified alpha/beta strategies, volatility strategies, local currency emerging market debt, bank loans, agricultural investing, managed futures, natural resources, green and energy investing, micro-finance institutions, etc.</p>
<p><i>Option Contract:</i> A standardized agreement that conveys the right, but not the obligation, to buy or sell a specific security or commodity at a stipulated price and within a stated time period.</p>
<p><i>Private Equity:</i> Investments in usually higher-risk companies whose securities are not publicly traded. Investments are very illiquid. Successful alternative equity investments can earn returns that are significantly higher than those available from publicly traded securities.</p>
<p><i>Real Estate:</i> Direct or indirect investments in land and/or buildings.</p>
<p><i>Real Estate Investment Trusts (REIT):</i> A real estate portfolio managed by an investment company for the benefit of the trust unit holders. Most REIT units are publicly traded.</p>
<p><i>Return:</i> The gain or loss in value of an investment over a given period of time expressed as a percentage of the original amount invested. For example, an initial investment of \$100 that grows to \$105 over one year has earned a 5% return.</p>
<p><i>Risk:</i> In its most general usage, risk refers to the possibility of loss or injury. Within the world of fund management, risk usually refers to either (a) the possibility of the loss of client assets, relative to an expected outcome, or (b) injury to a fiduciary’s reputation because of imprudent decision-making. Various statistical tools and techniques are used to manage the probability of losing client assets, relative to an expected outcome. The probability of injury to fiduciary reputations is managed by establishing, documenting, implementing, and enforcing policies and procedures that demonstrate prudent decision-making, even if the decisions resulted in the loss of client assets.</p>
<p><i>Risk Budget:</i> A constraint imposed on an investment manager to limit the extent to which an actively managed portfolio can lose value relative to a passively managed portfolio due to the active manager’s decisions, at a given confidence level. For example, a 4% annualized risk budget indicates to an active manager that portfolio losses attributable to his/her active management decisions should not exceed 4% in more than three years out of twenty. A more frequent pattern of losses in excess of 4% suggests the manager may be taking more risk than permitted in his/her mandate. A risk budget constraint is also known as a “value-at-risk” constraint.</p>

Risk-diversifying: Reducing risk without reducing expected returns by combining assets with returns that move in opposite directions over a given time period thereby reducing the total portfolio risk. A decline in the price of one asset is offset by the increase in the price of another asset in the portfolio. In laypersons terms, this is often described as putting your eggs into more than one basket.

Short Sales: Short sale positions generally involve borrowing and then subsequently selling a security. Short sellers expect to buy the “shorted” security back in the future at a lower price, return the borrowed security, and profit from the difference between the sale and the purchase price. Short sales are transactions which result in positive performance if the security sold “short” declines in price.

Unhedged Currency: A term applied to a portfolio of non-domestic stocks or bonds that is affected by the changes in the value of domestic and foreign currencies.

Venture Capital: Independently managed, dedicated pools of capital that focus on equity or equity-linked investments in privately held, high growth companies.

Vintage Year: The group of funds or funds-of-funds whose first investment occurred in the same year.

**State Teachers Retirement
System of Ohio**

Statement
of
Fund Governance

Contents

1. Purpose
2. Governance Principles
3. Investment Decisions Retained by the Board
4. Investment Decisions Delegated to Investment Staff
5. Board Oversight

Glossary of Selected Terms

Terms highlighted in *italics* are explained in the glossary.

Purpose

- 1.0 This Statement of Fund Governance (the “Statement”) summarizes the governance structure established by the Board of the State Teachers Retirement Board of Ohio (the “Board”) to ensure the prudent, effective, and efficient management of the assets of the State Teachers Retirement System of Ohio (“STRS Ohio”).
- 1.1 The fund governance structure was approved by the Board after careful consideration of alternative approaches to governing a very large and growing pension fund within an increasingly complex financial and investment environment.
- 1.2 The Statement has been prepared with five audiences in mind: incumbent, new and prospective Board members; STRS Ohio investment staff; STRS Ohio active and retired members; the Ohio General Assembly and Governor; and agents engaged by the Board to manage, administer or advise on STRS Ohio’s assets (“Fund”).
- 1.3 The Statement summarizes more detailed policy documents and procedure documents prepared and maintained by STRS Ohio investment staff, and numerous other documents that govern the day-to-day management of STRS Ohio assets.
- 1.4 The Board regularly assesses the continued suitability of the STRS Ohio fund governance structure, initiates change as necessary, and updates this Statement accordingly.
- 1.5 The Board may authorize its administrative officers and committees to act for it in accord with its policies (Ohio Revised Code [“ORC”] Sections 3307.04 and 3307.15). The Board, no less frequently than annually, adopts a resolution delegating to the Executive Director and the Deputy Executive Director, Investments, the authority to acquire, dispose, operate, and manage the assets of the Fund, subject to the Board’s policies and to subsequent approval by the Board.
- 1.6 In carrying out the operation and management of STRS Ohio, the Board, the Executive Director, the investment staff and others that are considered fiduciaries as defined in ORC Section 3307.01(K) are subject to various fiduciary responsibilities in ORC Chapter 3307, including, those found in ORC Sections 3307.15, 3307.151, 3307.18, and 3307.181. This Statement incorporates, and is subject to, all provisions of ORC Chapter 3307.
- 1.7 The Board acknowledges its responsibilities under ORC Chapter 3307 and to the extent that this Statement is inconsistent with ORC Chapter 3307, Chapter 3307 shall control.
- 1.8 The Board approved this Statement on May 18, 2017.

2.0 Governance Principles

- 2.1 Three principles guided the Board’s development of the STRS Ohio fund governance structure:
 - (a) As STRS Ohio *governing fiduciary*, the Board is ultimately accountable for all investment decisions. Section 3307.15 of the Ohio Revised Code (the “Code”) vests the investment function in the Board and requires the Board to “...adopt in regular meetings, policies, objectives and criteria for the operation of the investment program...” *Section 3307.15 of the Code* sets forth the fiduciary responsibility of the Board in discharging its duties with respect to the fund.

- (b) To ensure STRS Ohio assets are prudently, profitably, and efficiently managed on a day-to-day basis, the Board needs to delegate the management and implementation of Board investment policies to qualified *managing and operating fiduciaries*. Sections 3307.04 and 3307.15 of the Code empower the Board to authorize its committees and administrative officers to act for it in accord with Board policies. The fiduciary responsibility the Board delegates in discharging their duties with respect to the fund is specified in Section 3307.15.
- (c) To ensure effective oversight of delegates, the Board requires informative and timely performance reports that reveal if managing and operating fiduciaries have complied with established policies, and indicate how assets under their care have performed relative to Board approved investment objectives.

3.0 Investment Decisions Retained by the Board

3.1 The Board approves the following investment policies:

- (a) Statement of Investment Objectives and Policy, which includes the following:
 - (i) Total fund *risk* and *return* objectives;
 - (ii) Total fund target asset mix policy;
 - (iii) Total fund asset mix policy rebalancing ranges;
 - (iv) Active management risk and return objectives at the total fund and asset class levels; and;
 - (v) Performance measurement criteria and evaluation standards;
- (b) Proxy voting;
- (c) Ohio investments;
- (d) Securities lending;
- (e) Broker-dealer selection criteria and procedures;
- (f) Ohio-qualified investment managers and brokers; and
- (g) Securities litigation.

3.2 Before approving or amending policy decisions, the Board seeks advice, guidance, and recommendations from STRS Ohio investment staff, Board-retained investment consultants, and other experts or sources as considered prudent by the Board.

4.0 Investment Decisions Delegated to Investment Staff

4.1 The Board, through the Executive Director, has delegated to qualified STRS Ohio investment staff the following investment management and implementation decisions:

- (a) Buying, selling, managing, and monitoring individual securities, real assets, and/or other investment transactions to achieve the total fund and asset class investment objectives approved by the Board;

- (b) Retaining, managing, and terminating external investment managers within each asset class as required to achieve the total fund and asset class investment objectives approved by the Board;
 - (c) Ensure total fund, asset class, and individual manager portfolios comply with established parameters and risk levels; and,
 - (d) Preparing, negotiating, and executing external investment manager mandates, guidelines and fee agreements.
- 4.2 In making these decisions, STRS Ohio investment staff seeks the advice, guidance, and recommendations of Board-retained investment consultants, external investment managers and other experts and sources as considered prudent by STRS Ohio staff.

5.0 Board Oversight

- 5.1 The Board requires investment staff to prepare and deliver an Annual Investment Plan that explains how STRS Ohio assets will be managed in order to achieve the Board-established investment objectives. This provides the Board a focused opportunity to:
- (a) Question and comment on staff's investment management plans;
 - (b) Request additional information and support about staff's investment intentions; and
 - (c) Express its confidence in the Annual Investment Plan.
- 5.2 The Board meets at least quarterly to assess how assets are being managed relative to the Annual Investment Plan, to monitor and evaluate investment performance relative to objectives and to address other investment issues as are warranted.
- 5.3 The Board approves the criteria and standards for monitoring and evaluating the impact different investment decisions have on total fund, asset class, and manager level performance. Performance is monitored and evaluated with respect to risk and return objectives established by the Board.
- (a) Investment risks are monitored and evaluated quarterly by comparing total fund and asset class risk characteristics relative to suitable *benchmarks*.
 - (b) Investment returns are monitored monthly and evaluated quarterly by comparing total fund and asset class returns relative to suitable benchmarks.
- 5.4 Before approving or amending the criteria for monitoring and evaluating investment decisions, the Board seeks advice, guidance, and recommendations from STRS Ohio investment staff, Board-retained investment consultants, and other experts and sources as considered prudent by the Board.

Glossary

Benchmark: A standard by which investment performance can be measured and evaluated. For example, the performance of US equity managers is often measured and evaluated relative to the benchmark performance of the Russell 3000 Index.

Governing, managing and operating fiduciaries. Terminology increasingly used in the pension field to distinguish between the governance, management and operations functions in a pension fund. The governance function is mission choice, funding and investment policy decisions, organizational design decisions, the monitoring of organizational effectiveness, and communication of results to stakeholders. This is the domain of governing fiduciaries. Management acts as advisors to the governing fiduciaries, devises strategies for achieving the fund mission and implementing the policies in a cost-effective manner, and organizes and monitors fund operations. This is the domain of managing fiduciaries. Finally, fund operations in the form of portfolio management, risk monitoring, and information system management and reporting are delegated to operating fiduciaries either inside or outside the pension fund organization. See Ambachtsheer, K. P. and D. Don Ezra, *Pension Fund Excellence*, Wiley, 1998, chapter 3.

Section 3307.15 of the Code: The members of the state teachers' retirement board shall be the trustees of the funds created by section 3307.14 of the Revised Code. The board shall have full power to invest the funds. The board and other fiduciaries shall discharge their duties with respect to the funds solely in the interest of the participants and beneficiaries; for the exclusive purpose of providing benefits to participants and their beneficiaries and defraying reasonable expenses of administering the system; with care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and by diversifying the investments of the system so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.

Return: The gain or loss in value of an investment over a given period of time, expressed as a percentage of the original amount invested. For example, an initial investment of \$100 that grows to \$105 over one year has earned a 5% return.

Risk: In its most general usage, risk refers to the possibility of loss or injury. Within the world of fund management, risk usually refers to either (a) the possibility of the loss of client assets, relative to an expected outcome, or (b) injury to a fiduciary's reputation because of imprudent decision-making. Various statistical tools and techniques are used to manage the probability of losing client assets, relative to an expected outcome. The probability of injury to fiduciary reputations is managed by establishing, documenting, implementing and enforcing policies and procedures that demonstrate prudent decision-making, even if the decisions resulted in the loss of client assets.