Investment Consultant Performance Reporting Policy

I. Overview

a. Purpose

The purpose of this Investment Consultant Performance Reporting Policy is to detail the guidelines, procedures, and processes for the performance calculation and reporting for the System's investments. Ensuring a consistent and transparent process to determine and report performance is critical for performance data to be a useful analytical tool for the Board and Investment Office Staff (IOS). Responsibility for implementation of this Policy is assigned jointly to IOS dedicated to investment operations and risk responsibilities (Staff) and to the general Investment Consultant, and additionally to the extent applicable, each asset class-specific Investment Consultant and Investment Manager.

b. Performance Reports

The Monthly Flash Report and Quarterly Total Fund Report provide the NAVs, returns, attribution, risk profiles, and risk statistics for the Public School Employees' Retirement Fund (Fund). The Monthly Flash Report information is considered to be preliminary as it shows preliminary market values and performance for all individual accounts that are typically valued monthly. The Quarterly Total Fund Report is a comprehensive report reflecting finalized market values and performance for all accounts and asset class composites (including private investments that are valued quarterly); the report also provides detailed performance review, attribution, and risk profile statistics on individual account, asset class/composite, and total Fund level. The Quarterly Total Fund Report will reflect the most-recently available valuations available when the report is closed; once closed, performance depicted in The Quarterly Total Fund Report will be considered official and final.

c. Performance System

The current Investment Consultant uses a third party performance reporting system, the Investment Metrics' Performance Analysis and Reporting Information System (PARis), which is a Windows-based desktop application supporting performance measurement, analysis, and performance reporting. The core functions of the system include performance measurement, performance attribution, portfolio monitoring, and customized client reporting. PARis reporting is on a month-end basis, and cash flows are day-weighted within the month they occur.

d. Performance Calculation Methodology

The calculation methodology is applied on individual account level as well as asset class/composite and total Fund performance calculation. PARis treats a composite as an aggregate of individual portfolios, combining assets and cash flows of the individual portfolios to arrive at a total composite portfolio assets and transactions total. After the composite portfolio is created, the time-weighted return (TWR) modified Dietz method is used to calculate the composite and total Fund's return.

TWR allows an investor to directly measure the portfolio's true performance over a given time frame. TWR is defined as the compounded growth rate of $1 over the period being measured. The time-weighted formula is essentially a geometric mean of a number of holding-period returns that are linked together or compounded over time.

Investment Consultant's Calculation:

TWR Formula

HPR = ((MV1 - MV0 + D1 - CF1)/MV0)

Where: HPR is the holding period return

MV0 = beginning market value,

MV1 = ending market value,

D1 = dividend/interest inflows,

CF1 = cash flow received at period end (deposits subtracted, withdrawals added back)

The time-weighted rate of return specified above measures the investment performance of a pool of assets, removing the impact of cash flows, and it is the more acceptable measure of investment performance. The Investment Consultant's calculation (shown below) for TWRs is based on the modified Dietz method which is an industry standard measure for the calculation of a time-weighted return. Modified Dietz is a method of evaluating a portfolio's return based on a weighted calculation of its cash flow. The modified Dietz method takes into account the timing of cash flows, and assumes that there is a constant rate of return over a specified period of time.

Modified Dietz Formula

$$R_{MDietz} = \frac{Gain}{AverageCapital} = \frac{EMV - BMV - F}{BMV + \sum_{i=1}^{n} W_i \times F_i}$$

where

EMV is the ending market value

BMV is the beginning market value

F is the net external inflow for the period (contributions to a portfolio are entered as positive flows while withdrawals are entered as negative flows)

and

$\sum_{i=1}^{n} W_i \times F_i =$ the sum of each flow F_i multiplied by its weight W_i

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The weight W_i is the proportion of the time period between the point in time when the flow F_i occurs and the end of the period. W_i can be calculated as

$$W_i = \frac{CD - D_i}{CD}$$

where

CD is the number of calendar days during the return period being calculated, which equals end date minus start date plus 1

D_i is the number of days from the start of the return period until the day on which the flow F_i occurred. This assumes that the flow happens at the end of the day. If the flow happens at the beginning of the day, use the following formula for calculating weight:

$$W_i = \frac{CD - D_i + 1}{CD}$$

II. Sourcing for Performance Reports

a. Separate Accounts – Public Markets Investments

The Custodian Bank is the primary source for market values and transactions for all Separate Accounts for which performance is calculated and reported on a monthly basis. The Investment Consultant sources data from the Custodian Bank after books close typically within 6 business days after month-end. On a quarterly basis, the Custodian Bank will reconcile balances after their book of record is closed. If restatements are necessary, a restatement letter will be sent with the change in market value. The Investment Consultant will update their records to reflect any restatement changes.

b. Liquid Public Markets Funds (Commingled Funds)

The exceptions to the current source of inputs (Custodian Bank) are made to reflect more current valuations available directly from the Investment Managers/administrators. The Investment Consultant provides supplemental reporting for Commingled Funds as described below.

i. **Absolute Return Investment Funds** Due to the delayed timing in reported valuations (NAVs) by Absolute Return Investment Managers being reflected on the Custodian Bank's books, the Investment Consultant sources the updated NAVs directly from the Absolute Return Investment Managers or their respective administrator (typically 15-20 business days after month end). If an estimated monthly NAV is not available by 20 business days after month end, the Investment Consultant will carry forward the prior month NAV adjusted for any cash flow activity during the month, reflecting a 0% return. Cash flows for

Absolute Return Investment Funds are sourced from the Custodian Bank, and the Investment Consultant will make every effort to reconcile the cash flows with Absolute Return Investment Manager/administrator records and statements where available.

ii. **High Yield Managers** Due to the delayed timing in reported valuations (NAVs) by these Investment Managers being reflected on the Custodian Bank's books, the Investment Consultant sources the updated NAVs directly from the Investment Managers or their respective administrator (typically 15-20 business days after month end). If an estimated monthly NAV is not available by 20 business days after month end, the Investment Consultant will carry forward the prior month NAV adjusted for any cash flow activity during the month, reflecting a 0% return. Cash flows are sourced from the Custodian Bank, and the Investment Consultant will make every effort to reconcile the cash flows with Investment Manager/administrator records and statements where available.

iii. **Risk Parity Managers** Due to the delayed timing in reported valuations (NAVs) by these Investment Managers being reflected on the Custodian Bank's books, the Investment Consultant sources the updated NAVs directly from the Investment Managers or their respective administrator (typically 15-20 business days after month end). If an estimated monthly NAV is not available by 20 business days after month end, the Investment Consultant will carry forward the prior month NAV adjusted for any cash flow activity during the month, reflecting a 0% return. Cash flows are sourced from the Custodian Bank, and the Investment Consultant will make every effort to reconcile the cash flows with Investment Manager/administrator records and statements where available.

For monthly reporting, the Investment Consultant initially sources NAVs and cash flows from the Custodian Bank – if a monthly statement from the Investment Manager/administrator is not available at the time of the preliminary monthly report, the Investment Consultant will calculate performance based on the latest available NAV and cash flows from the Custodian Bank as of month end. Typically, if no cash flows are present, this will result in a monthly return of 0%. For those accounts that the Investment Manager/administrators provides a preliminary NAV for the period, the performance calculation will be based on that preliminary NAV as it is considered the most current valuation available at the time of reporting.

Cases where a month-end transaction's trade date/settlement date land in different months will be reviewed on a case-by-case basis, the Investment Consultant and Staff will work to determine the best way to make adjustments and document them accordingly. If deemed necessary, the Investment Consulant will adjust the NAV to capture the cash flow in the current month and and offset the cash movement to the Cash Management account.

For quarterly reporting, the Investment Consultant updates the previously reported monthly NAVs with final NAVs (or in some cases, with the preliminary NAV as the most current valuation available from the Investment Manager/administrator) as provided by the Investment Manager/administrator as part of finalizing the quarterly report. In cases where accounts/funds are quarterly valued, the monthly reporting for such an account reflects a return based on the last available NAV (typically prior quarter end) and cash flows for the period. The Investment Consultant's quarterly report reflects the current quarter's NAV and performance for these funds unless otherwise specified. With these NAV adjustments, any monthly reporting on composite/asset class level is preliminary and expected to be finalized with the quarterly report.

Situations where revisions to NAVs/cash flows occur after finalizing and publishing the quarterly report will be reviewed on a case-by-case basis. The Investment Consultant and Staff will work to determine the best way to make adjustments and document them accordingly. If there is no significant materiality to the revisions, the Investment Consultant affects these changes for the period they have occurred with such adjustments being reflected with the next monthly/quarterly performance report.

In the calculation of Absolute Return/High Yield accounts and composites, the Investment Consultant follows the same methodology of performance calculation in the Performance Calculation Section. The Investment Consultant performance calculation methodology for the Absolute Return/High Yield accounts day-weights the cash flows within the month they occur as sourced from the Custodian Bank; as a result, the Investment Consultant calculated return for these accounts/composites may differ from those calculated by Staff, given differences in calculation methodology, which currently weighs cash flows at the end of the month. Any specific differences are reviewed and documented consistent with the reconciliation process followed by the Investment Consultant and the System.

c. **Illiquid LP Structures (Non- Marketable - Private Market Investments) -Quarterly Reporting Only**
Performance reporting for Private Markets (Private Real Estate, Private Debt, Private Equity, and Venture Capital) is quarterly and reflected in total Fund performance on a quarter lag. The performance is a time-weighted return (modified Dietz methodology) and it is based on a quarter lagged valuations and a quarter lagged cash flows (for example, 3Q Total Fund reporting reflects 2Q valuations and cash flows as occurred on the date in 2Q). The Investment Consultant sources the valuations and transactions from the System. The data provided is on an individual fund level. The Investment Consultant reports only on a composite level - as a result the

Investment Consultant aggregates the data (both valuations and cash flows) before updating PARis. Private Market NAVs are quarterly valued, however the performance needs to be calculated on a monthly basis in PARis in order to roll up to Total Fund. The Invesment Consultant will adjust the NAVs as follows: during each quarter, the NAV for month 1 will be the NAV for the prior quarter-end, adjusted for cash flows during month 1, reflecting a 0% return. The NAV from month 2 will be carried forward from month 1 and further adjusted for any cash flows during month 2, reflecting a 0% return. The NAV for month 3 will be provided by the System, reflecting the full quarterly return. After review and reconciliation of Private Markets performance with Staff, the Investment Consultant provides the valuations and quarterly performance to the Custodian Bank's performance reporting group.

d. **Blended Accounts.** Blended accounts are defined as those with both individual asset holdings at the Custodian Bank and underlying investments being Commingled Fund vehicles or accounts of several Commingled Funds (fund of funds structure). The Custodian Bank is the primary source for market values and transactions for which performance is calculated and reported on a monthly basis. Exceptions to the current source of inputs (primarily valuations) for a fund of funds type of blended accounts are made to reflect more current valuations available directly from the Investment Managers/administrator. For those accounts that the Investment Manager/administrator has provided a preliminary NAV for the period, the performance calculation will be based of that preliminary NAV as it is considered the most current valuation available. Cash flows for these accounts are sourced from the Custodian Bank and Investment Consultant will make every effort to reconcile them with Investment Manager/administrator records and statements where available. If an estimated monthly NAV is not available by 20 business days after month end, the Investment Consultant will carry forward the prior month NAV. Performance calculations for underlying accounts will be provided only if market values/cash flows for these underlying accounts is available either from the Custodian Bank or Investment Manager/administrator; in cases where such level of detail is not present, any performance reporting for such underlying accounts will be only supplemental in nature.

III. Additional Calculations

a. Levered (Cash)/ and Unlevered (Notional) Performance

The Investment Consultant calculates both levered and unlevered performance for several accounts. The levered return is based on market values and transactions as reported by the Custodian Bank. The unlevered or notional return is based on notional valuations (sourced from Investment Manager/brokerage statements and the System's internal reports as prepared by SIOS) and respective transactions/changes in exposures on a monthly basis. The unlevered reporting is for supplemental purposes only and it is consistently shown in the Investment Consultant monthly/quarterly reports. For example, the levered return calculation for the US Long Treasury account (one of the accounts that is currently permitted to employ leverage) is based on the net asset value and cash flows of the account. The unlevered return calculation is based on the gross asset value of the account (i.e. economic exposure achieved with the use of leverage/derivatives) adjusted for any changes in exposure during the period. In order to include the impact of employed leverage, the calculated performance for total Fund and appropriate asset class composites reflects the returns and market values of the levered accounts, based on market values and transactions sourced from the Custodian Bank.

b. Currency Hedge Composite/ Currency Overlay Manager

The currency overlay mandate performance as shown in the Investment Consultant monthly/quarterly report reflects the value added by currency hedging and it is an actual measure of cash flow activity as required by the nature of the currency contracts held in the account. Specifically, the performance captures the changes in gains/losses as sourced from the Custodian Bank's statements over the monthly notional value (currently sourced from the currency overlay manager monthly statement). The Investment Consultant calculation for the notional return is (Realized G/L) + (Unrealized G/L)/ Month-End Floating Notional Value. The Investment Consultant reconciliation performance tolerance targets on a monthly basis for the notional currency returns is 5 bps. The Investment Consultant will calculate performance using partial period or daily returns to bring any monthly return deviations to within this tolerance range. The total Fund and asset class/composite return reflects the currency gains/losses and the calculated total Fund/asset class return in effect captures the impact of currency hedging.

c. Risk Parity (volatility-adjusted) Reporting

The purpose of the volatility-adjusted reporting for this asset class composite is to provide a more comparable monitoring versus the specific asset class policy benchmark given an explicitly defined volatility target. For additional reporting purposes, the Investment Consultant calculates and reports volatility-adjusted performance for the risk parity composite and individual risk parity accounts. The adjustment for each portfolio is as follows:

> **Volatility Adjustment = ((Manager Actual Return – Risk free Rate)*(Scaling Factor)) +Risk free Rate.**
>
> The Scaling Factor for volatility adjustment for each individual account is defined as follows:
>
> **Scaling Factor = <u>Asset Class Volatility Policy Target</u>**
> **Individual portfolio volatility target** (as defined by manager investment guidelines)

The calculated volatility-adjusted risk parity composite return is an asset-weighted return based on beginning of period portfolio market value and volatility adjusted return. The total Fund return reflects the actual (not volatility-adjusted) risk parity return capturing the performance impact of actual volatility of underlying portfolios during the measurement period.

Note: Risk Parity also has a non-volatility adjusted return which is the primary reported return. Volatilty adjusted Risk Parity reporting is for supplemental purposes only.

d. **Investment Management Fees/Fund Expenses**

The System is committed, to the extent possible, to consider all applicable investment fees and other expenses incurred in calculating and reporting performance. Therefore, Staff shall direct the Custodian Bank to post accruals for investment management fees and for performance fees to each applicable portfolio account.

While performance is reported on net of fee basis, the Investment Consultant also calculates gross of fee returns for total Fund, asset class/composite and individual accounts. The performance calculation incorporates actually paid fees as sourced from the Custodian Bank and incentive fee accruals where applicable. For these External Portfolio Managers'mandates that have an incentive fee component , the incentive fee accrual is calculated on a monthly basis. Staff reviews the incentive fees as provided by the External Portfolio Manager, then sends the incentive fee accrual to the Investment Consultant who uses the data to apply an incentive fee accrual in the calculation of net performance for these accounts. Staff informs the Investment Consultant of any changes in External Portfolio Manager accounts for which an incentive fee accrual is applied. Liquid Public Markets Funds'gross and net of fee returns are the same since the base and incentive fees are deducted directly from the fund.

e. **New/Terminated Accounts**

Performance for new/terminated accounts is reflected in the performance ofthe asset class/total Fund at the time of funding/terminations. The performance for the new/terminated account will be shown for the full month, consistent with the performance of the benchmark. Accounts funded during the month will not show performance for the intra-month period, but will show a NAV as of month-end in the reports. Accounts that are terminated will be indicated as such; for accounts being completely liquidated during the month the report will not show performance for intra-month period of termination but will show any residual NAV balance as of month-end. Any exceptions to the rule will be fully discussed and documented in the appropriate reports. Consistent with composite return calculation as described above, partial period account performance is reflected into the performance of the composite and total Fund.

f. **Policy Benchmarks**

The Total Fund Policy Benchmark is constructed using the policy asset allocation weights and indices as specified in the System's Investment Policy Statement (IPS). On a quarterly basis, asset class weights are provided by Staff for the calculation of the System's Total Fund Policy Benchmark. The Investment Consultant verifies the provided data and updates the policy benchmark accordingly at the beginning of each quarter. The weights for the Public Markets and Private Markets policy benchmarks are determined each quarter following the calculation as specified in the IPS (Policy Index).

The Public Markets Policy Benchmark is calculated monthly, while the Private Markets Policy Benchmark is calculated quarterly due to the illiquid nature of the asset classes and frequency of the underlying indices. The monthly-linked quarterly return of the Public Markets Policy Benchmark is used in the calculation of the quarterly performance of the Total Fund Policy Benchmark.

The Private Markets Policy Benchmark is updated *retroactively* for the past 20 quarters in order to reflect more accurate measure of changes in constituents of such benchmark. This methodology results in a restatement of Total Fund Policy Benchmark return from quarter to quarter; as a result, the return for a specific quarter may differ from the return for that quarter reported in an earlier report. Any material changes to the returns of the Total Fund Policy Benchmark as a result of this methodology are expected to be documented accordingly.

The source of returns for the Private Markets Policy Benchmark is the System's Specialty Consultants. The Specialty Consultant will review the calculations and send the returns to the Investment Consultant. Staff will review the calculation as well. Any differences or changes in the returns will be resolved between the Specialty Consultant, Staff and the Investment Consultant. This review of the indices is done quarterly, consistent with the reconciliation and review process.

IV. Reconciliation Process

a. Separate Accounts

The Investment Consultant reconciles the calculated rates of returns for Separate Accounts on a monthly basis with the Custodian Bank and Investment Managers.

External Portfolio Managers fill out the Investment Consultant provided template for monthly performance (gross and net) and market value and provide to the Investment Consultant as soon as monthly data is finalized.

The Investment Consultant reconciles monthly returns for the System's internally managed portfolios with those provided by Staff. Given the use of the same sources for inputs and similarity in the performance calculation methodology employed by Investment Consultant and Staff, it is the expectation that there will be no differences in returns as calculated by the Investment Consultant and Staff (i.e., monthly tolerance target is set at less than 1 basis point).

The Investment Consultant reconciliation performance tolerance targets on a monthly/quarterly basis are as follows:

i. Externally Managed Portfolios

Monthly Flash Report
Public equity accounts: 5 basis points
Fixed income accounts: 5 basis points
High Yield/Absolute return accounts: 5 basis points
Notional Currency return accounts: 5 basis points

Quarterly Total Fund Report

Public equity accounts: 15 basis points
Fixed income accounts: 15 basis points
High Yield/Absolute return accounts: 15 basis points
Notional Currency return accounts: 5 basis points

ii **Internally Managed Portfolios**

Monthly Flash Report

The System's internally managed accounts: 1 basis point

Quarterly Total Fund Report

The System's internally managed accounts: 1 basis point

Any significant discrepancies in returns are discussed with Staff. Reasons for deviations are documented accordingly. Investment Managers will provide daily NAVs when needed to reconcile differences.

The Investment Consultant reconciles market value and performance with the Custodian Bank's Performance Reporting Group on monthly and quarterly basis. The Custodian Bank will provide a spreadsheet with NAVs and returns which the Investment Consultant will reconcile with their NAVs and returns. Any differences in these amounts will be worked out between the Custodian and Investment Consultant. Any exceptions and discrepancies deemed material will be brought to the attention of Staff. Reasons for deviations are documented accordingly.

b. Liquid Public Market Funds (Commingled Funds)

The Investment Consultant reconciles the calculated rates of returns for Commingled Funds on a monthly basis with the Specialty Consultant and Staff. The Specialty Consultant will provide a spreadsheet with NAVs and returns which the Investment Consultant will reconcile with their NAVs and returns. Any differences in these amounts will be resolved between the Consultants. Any exceptions and discrepancies deemed material will be brought to the attention of Staff. Reasons for deviations are documented accordingly.

c. Illiquid LP Structures (Private Markets Investments)

The Investment Consultant reconciles the calculated rates of returns for non-marketable accounts on a quarterly basis with Staff, PSERS' Private Market Team, and the Specialty Consultants. ((For more information on the process, see section II.c Illiquid LP Structures (Non-Marketable - Private Markets Investments) -Quarterly Reporting Only)).

d. Cash Flows

Since the modified Dietz TWRs are sensitive to the timing and magnitude of cash flows, in instances where a cash flow is greater than 10% of an account market value and daily valuation for that portfolio is available, the Investment Consultant applies the TWRs daily valuation method and calculates a time-weighted return by geometrically linking the sub period returns using an interim (intra month) market value (when available). For example, if the large (defined as greater than 10% of beginning market value) cash flow occurs on the 10^{th} day of the month, the Investment Consultant calculates a TWR from the first of the month to the 10^{th} of the month using an ending market value as of the 10^{th} day of the month ("interim market value"). The Investment Consultant then uses that same interim market value as the beginning market value to calculate a TWR for the period of the 11^{th} day to the end of the month. To calculate a full monthly TWR, the Investment Consultant geometrically links the two sub-period returns above. Sources for interim market value in the TWR daily valuation calculation are Staff (specifically as it pertains to internally managed/daily valued portfolios), Custodian Bank, and/or External Portfolio Managers. The Investment Consultant proactively identifies sources and dates to perform calculations.

For any cash flow where the cash is transferred out in one month and not invested into the fund until the following month (subscription/settlement date), the cash flow date on the Investment Consultant's records will be the last day of the month (with the cash flow) to minimize the impact on performance. This adjustment is necessary because the cash is not invested in the fund until the subscription date (so the cash does not start earning a return until the subscription date).

V. Review and Verification Process

1. The Investment Consultant provides initial draft of monthly/quarterly report to Staff for initial review after completing reconciliation reviews with Custodian Bank/Investment Managers/Specialty Consultants (within 23-25 business days after month end).
2. Staff distributes the initial report with a timeframe to the Internal Portfolio Managers, Investment Office Directors, and CIO for review. Staff reviews and reconciles any differences between IOS, the Custodian Bank, the Investment Consultant and Specialty Consultants (within 3 business days of receipt of initial draft report).
3. Staff notifies the Investment Consultant of any additional account restatements, terminated and new accounts, and/or changes in performance benchmarks (26-28 business days after month end).
4. Upon final reconciliation and review of reports by Staff, the Investment Consultant finalizes monthly/quarterly report and distributes to PSERS (within 28-30 business days after month end for Monthly Report and within 35-38 business days for Quarterly Report).

For more information on detailed timeline of review and verification process, see Addendum section d.

Addendum

a. GASB 67 Reporting

Given the reporting requirements under GASB 67, the Investment Consultant will assist Investment Accounting (IA) with the calculation of an annual money-weighted return for each fiscal year-end and a long term expected total return based on the Public School Employees' Retirement Fund's (Fund)long term Asset Allocation.

1. Money-weighted return (MWR), which is also called an internal rate of return (IRR), incorporates the size and timing of cash inflows (contributions) and outflows (withdrawals) into or out of an investment portfolio. The internal rate of return (IRR) is a money-weighted return calculation that represents the constant compounded rate of growth for all money invested in the account.

   Calculation Formula:
   $MVE = MVB * (1+IRR) + CF_1 * (1+IRR)^1 ...CF_N * (1+IRR)^N$
   Where:
   MVB: Market value beginning
   MVE: Market value ending
   CF: amount of cash flow
   N: weight of the CF for the period

   The data requirements for IRR are beginning and end of the evaluation period valuations and all month-end external cash flows. IRR's are calculated for each period since inception (or interim periods as defined) and do not link across periods. Per requirements, inputs for an annual IRR are total Fund valuations at the beginning and end of fiscal year (period ending June 30) and monthly total Fund external cash flows.. For the purpose of the money-weighted return calculation, all external cash flows during a month are aggregated and the next external cash flow is treated as a single net in/outflow assumed to occur at the end of the month during the defined period. Per GASB 67 requirement, an annual history of total Fund annual IRRs will be built with each year (Starting for FY'2014) for a schedule of ten years.

2. Long term expected (nominal and real) return for the total Fund will be based on the target Asset Allocation of the Fund and Investment Consultant's 30 year forward-looking capital market assumptions. A description of the methodology in arriving at the long term expected return will also be provided.

b. Onboarding

The investment structure, asset class/composite definition was established in PARis after the review and approval of PSERS staff. While the Investment Consultant received historical data for inactive/closed accounts, the investment structure as set up and established included only active accounts and composites as of June 30, 2013. However, historical data for composites was loaded in PARis to be able to report on longer period performance.

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Sourcing Historical Data

The Investment Consultant has sourced the historical data (market values and returns) prior to June 30, 2013 for individual accounts, composites, and asset class blended policy benchmarks from the prior consultant. The historical data for Public Markets accounts and composites was provided primarily monthly in frequency, both on a net and gross of fee basis. The historical data for the total Fund and Private Markets accounts and composites was provided on a quarterly basis. Individual account and asset class benchmarks were created using the formulas and historical descriptions provided to the Investment Consultant by the prior Investment Consultant.

In the process of setting up and populating the accounts with historical data, the Investment Consultant observed several differences in longer term returns of composites and individual accounts based on the prior Investment Consultant's report vs the Investment Consultant calculated returns based on the Prior Investment Consultant's data streams. As a result, the Investment Consultant sourced the historical return data for total Fund and total Private Markets composites from the System. The return differences (between what was provided and reported) were minimal.

Since Inception Performance: PARis may also show since inception dates on non-quarter ending months (i.e. April 19xx) which yielded differences in since-inception returns given the differences in since inception dates. The Investment Consultant reported since inception date of an account and composite is based on the month of first data point.

Quarterly vs. Monthly Data Series: The historical returns for the Public Markets Blended Policy benchmark were provided on a monthly and quarterly frequency. For purposes of consistency going forward, the Investment Consultant has set up the calculation of this blended benchmark on a monthly basis to be used in both the monthly and quarterly reports as well as to roll up consistently into the calculation of the total Fund Policy benchmark.

Historical Data: The Investment Consultant was not provided with the historical returns for the following accounts: U.S. Long Treasuries Composite (levered) and PSERS Gold Fund (levered). The Investment Consultant was provided the historical data for the blended policy benchmarks for the following composites: Commodities, EM Equity, Private Market, PTRES, Public Market, US Equity, Total Equity, Total Fixed Income, Total Non-US Equity, Total Plan, Total US FI, Total Real Estate, Risk Parity, and Private Equity (Thomson ONE Median). For the remainder blended benchmarks for both individual managers and asset class/composites as currently reporting on, the Investment Consultant created these blended benchmarks based on the provided historical description.

c. Investment Consultants

Current Investment Consultant: Aon Hewitt Investment Consulting, f/k/a Hewitt EnnisKnupp Inc. (September 2013 to current)

Prior Investment Consultant: Wilshire Associates (prior to September 2013)

Specialty Consultants: Aksia LLC, Portfolio Advisors LLC, and Courtland Partners Ltd.

d. Monthly/Quarterly Reporting Detailed Timeline

Task	Description	Duration of Task (bus.day)
Data Collection	Investment Consultant downloads Custodian Bank data --- typically available online 8 calendar days after month-end (Absolute Return Funds usually updated by 24th calendar day).	1 day
	Investment Consultant collects all available Investment Manager/adminsitrator statements and update NAVs for High Yield, Absolute Return Funds, and other select fixed income accounts. Investment Consultant collects account balance and returns by Investment Manager and finalizes reconciliations. Investment Consultant collects fee accrual data.	5 days
Accounting	Investment Consultant loads Custodian Bank data into PARis and calculates all account and composite returns. Investment Consultant enters accruals into PARis as they are received; updates all custom benchmark returns in PARis, and completes additional caclulations (ex. Risk Parity Vol Adj composites).	4 days
Reconciliation	Investment Consultant completes reconciliation with Custodian Bank Performance Group: – Investment Consultant sends preliminary accounting results to Custodian Bank. – Custodian Bank generates reconciliation spreadsheet comparing Investment Consultant's data to Custodian Bank's. – Investment Consultant investigates any discrepancies. If necessary, Investment Consultant sends Custodian Bank updated data for the completion of revised reconciliation.	5 days
	Manager reconciliation process: – Investigate any discrepancies between managers and Investment Consultant/Custodian Bank/Specialty Consultant.	4 days
Initial Review by the System	**Provide initial draft for the System's review (to Krista Roessler)**	1 day
Initial Draft Distributed to the System	**Investment Consultant sends Initial Monthly Report to the System's team for a review (Within 23 to 25 business days after month end)**	

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Staff Review	Staff reviews and reconciles any differences between IOS, the Custodian Bank, the Investment Consultants	3 days
Finalization	Investment Consultant incorporates edits/changes as provided by the System	2 days
Final Monthly Report to the System	**Investment Consultant provides Final Monthly Report to the System within 26-28 business days after month end.**	
Quarterly Reporting (Additional Tasks)		
Accounting	Investment Consultant reconciles and and updates performance for HY/Absolute Return Fund accounts based on final Investment Manager/administrator statements as received throughout the prior three months Investment Consultant calculates performance for Private Markets investments based on data provided by the System Investment Consultant calculates and reconciles total Fund, Private Markets policy benchmark with Private Markets staff *(private benchmark data available and provided from IOS to Investment Consultant typically 45 calendar days or 32 business days after quarter end)* Investment Consultant provides initial draft for Staff review (to Krista Roessler)	35 days
Initial Review by Staff	**Investment Consultant provides a draft to Staff for Initial Review**	1 day
Finalization	**Investment Consultant finalizes and incorporates changes**	1 day
Final Quarterly Report to the System	**Final Quarterly Report provided to PSERS within 35-38 business days after quarter end.** **Final Quarterly Performance Presentation provided within 2-3 business days after issuing Quarterly Report.**	

Notes on Table: Please note duration of tasks shown above refers to how long it takes to complete the specific task which could also be completed in parallel (not necesseraly consecutively) to other tasks.

The Investment Consultant Performance Policy has been reviewed and accepted by the PSERS' Investment Office.

The policy shall be reviewed and signed at the end of each of fiscal year by the CIO and Senior Management.

At any time throughout the fiscal year, changes or updates to the Policy shall be submitted and reviewed by the Risk Group and approved by the CIO and Senior Management.

Pennsylvania Public School Employees' Retirement System

12/21/2016

Signature Date

James H. Grossman, Jr.
Chief Investment Officer

Type or Print Name

Title

12/21/16

Signature Date

Robert Devine

Type or Print Name

Managing Director of Fixed Income

Title

Signature Date

Joseph W. Sheva

Type or Print Name

Risk Manager

Title

Signature Date

Charles J Spiller

Type or Print Name

Deputy CIO, Non-Traditional Investments

Title

Amended 12/21/2016

12/21/16

Signature Date

THOMAS BAUER

Type or Print Name

DEPUTY CIO, TRADITIONAL INVESTMENTS

Title

12/21/16

Signature Date

JOHN B KEMP

Type or Print Name

M.D.

Title

Amended 12/21/2016

Asset Allocation Committee Charter

Overall Roles and Responsibilities

The Asset Allocation Committee provides assistance to the Chief Investment Officer in managing both the strategic and tactical asset allocation of the Fund.

Responsibilities

The specific responsibilities of the Asset Allocation Committee include:

- Recommending a strategic asset allocation plan for the Finance Committee of the Board. In completing this responsibility, the committee will:
  - Consider the actuarial expected return approved by the Board;
  - Consider the cash flow and liquidity needs of the System;
  - Consider the System's investment time horizon;
  - Consider the System's current funded status;
  - Consider the demographics of the System's plan participants and beneficiaries;
  - Consider the Board's willingness and ability to take risk;
  - Consider the Board's willingness and ability to use leverage;
  - Work with the System's investment consultants and strategic partners, seeking input and professional guidance;
  - Review and approve capital market expectations for expected return, volatility, and asset class correlations; and
  - Recommend allocation ranges for each asset class.
- Recommending new asset classes.
- Reviewing and recommending appropriate benchmarks for each asset class, coordinating with internal and external asset class specialists.
- Developing and implementing appropriate asset class rebalancing guidelines for approval by the Finance Committee.
- Reviewing the actual asset allocation vs. the strategic asset allocation monthly and more frequently if market volatility is heightened.
- Collecting and analyzing short-term asset class views from strategic partners on a regular basis.
- Developing fundamental key indicators of market valuation.
- Identifying and monitoring key technical indicators, such as moving averages.
- Combining short-term asset class views, fundamental views, and technical indicators to develop and manage tactical tilts to the investment portfolio.
- Establishing policies related to asset allocation.

Asset Allocation Committee Charter

Meetings

The Asset Allocation Committee will generally meet monthly or when necessary at the call of the committee chair. Meeting dates and times should be specified a year in advance.

Members

Ex-Officio voting members include the following:

- Chief Investment Officer
- Deputy Chief Investment Officer – Traditional
- Deputy Chief Investment Officer – Non-Traditional
- All Managing Directors

Committee Chair (voting member): Susan Oh, Senior Portfolio Manager

Recording Secretary (observer): Justin Getz, Investment Professional

Non-voting participant: Joe Sheva, Risk Manager

Other members of the investment staff may be invited to provide input regarding their specific assets classes as requested.

Note: Asset Allocation Committee votes are advisory to the Chief Investment Officer and non-binding.

Reports

The committee will receive and review the following reports:

- Agenda for each meeting prepared by the Committee Chair with input from Committee members
- Minutes from the previous meeting to be distributed prior to the next meeting (to be completed by the Recording Secretary)
- Strategic partner's capital market assumptions, as obtained (Committee Chair)
- Strategic partner's key investment views (Committee Chair)
- Monthly asset allocation reports (Recording Secretary)
- Inter-month asset allocation reports, as needed (Recording Secretary)
- Research that is pertinent to the strategic or tactical asset allocation discussions (all members)

Approval

8-1-2016

James H. Grossman, Jr.
Chief Investment Officer

Date

Commonwealth of Pennsylvania, Public School Employees' Retirement System

Asset Allocation Committee ("AAC") Meeting

Minutes of the AAC Meeting

March 30, 2018

Committee Members Present	Committee Members Absent	Others Present
Tom Bauer, Chair AAC	Bob Devine	
Jim Grossman		
John Kemp		
Charlie Spiller		
Joe Sheva (non-voting participant)		
Todd Shaffer (rotating participant)		
Anne Salem (recording secretary)		

The meeting started at 1:05 PM.

3/12/18 AAC Meeting Minutes

1. Tom asked if everyone was OK with the minutes from the 3/12/18 meeting.
2. The AAC approved the minutes of the 3/12/18 meeting at 1:05 PM.

Review of the Final 2/28/18 Asset Allocation Report

1. John reported that at March month-end there is $1.3 billion in unencumbered cash.
2. John also reported that during the month of March there were $368 million in capital calls, $275 million in distributions, $615 million in employee/employer contributions, and $548 million in annuitant/taxes. Further, he is expecting an additional $102 million in employer contributions on April 2nd.
3. John expects April to be a fairly quiet month with regard to cash and is forecasting an unencumbered cash balance of $1 billion at April month-end.
4. Tom reported Public Equity is $1.3 billion overweight.
   a. They are in the process of reducing non-US equity by $400 million.
   b. The puts are effectively a $680 million short position and last week the AIC approved his recommendation of putting on new puts ($10 million/month over the next 16 months, or an equivalent of adding a $90 million short position each month). $5 million was spent on Monday (3/26) and another $5 million was spent on Thursday (3/29). This brings the puts to a short position of about $750 million.
   c. When weighing in the reduction of non-US equities and the put program, Public Equities are close to a neutral target weight.
5. Charlie reported on Private Equity. He said that it looks like SERS is not going into 2 funds with PSERS, thus the reduction in fees we thought may happen, won't.
6. Charlie said we are expecting close to $300 million in Real Estate distributions around the end of the second quarter.
7. Charlie said that James will probably not spend his Private Credit allocation this year but that he is $450 million over target on a 3 year rolling time period.
8. Charlie said that Private Equity is trying to spend less across the board.
9. Todd said he was currently neutral on rates and breakevens when Tom asked about TIPS asset class. Todd recommended the group have a discussion in the future on the amount of leverage in TIPS and the Fund overall as financing costs continue to rise.
10. Tom reported the MLPs continue to challenge but had a decent week.
11. Tom said he had some concerns with MLPs being their own separate asset class. He thinks perhaps they belong more formally in the infrastructure category.
    a. Joe asked Charlie if historically our infrastructure managers have excluded MLPs and Charlie said "yes". Charlie further continued that when they are deal making, PSERS specifically informs potential partners they want no MLPs included.

12. Tom stated the composition of the two main MLP benchmarks – Alerian and S&P MLP -- is changing. There are fewer names than before, as many midstream companies are no longer MLPs but C corps and many MLPs have been combined into their GPs. Tom wondered if we should try to find a benchmark that is more encompassing, i.e., includes GPs, MLPs, C corps, and Canadians.
13. John mentioned MLPs bring in good money on Security Lending; $8,000 - $10,000/day.
14. Tom thinks it is interesting that MLP managers are being bought up but not the underlying securities.
    a. Joe said that Ray talked with Blackstone, Harvest's acquirer, about why acquire Harvest and not its holdings. There was no answer.
15. Joe suggested performing an ongoing P&L update on the MLPs TAA overweight, realizing it will be painful. Tom thought this was a good idea and said that he will have Chris put something together. This will be done relative to total fund return.
16. Joe – from a risk perspective, are the private market NAV numbers really good numbers? Should they be tweaked? He asked because they are reported on a lag.
    a. Tom asked John how difficult it would be for Brad to incorporate an adjustment into the report. John said he would talk to Brad.
    b. Charlie used Global Private Markets as an example. The value shown on February 28th is actually the September 30, 2017 NAV, 5 months ago. In theory, if equities increased by 10% over that time, he would adjust Global Private Markets upward by 80% of that, or 8%.
    c. Charlie thinks adjustments such as this would only work only for Private Markets and not the other Non-Traditional assets.
17. There were no other comments on the Asset Allocation spreadsheet. Each member is comfortable with the current weights.

If You Were King

1. Tom moved on to #4 on the agenda – If You Were King – and asked each person to write down their answer to this: If you were to choose one asset class to increase by 5%, what would it be?
    a. Todd chose Private Real Estate.
    b. Charlie picked Private Markets because he thinks they will outperform going forward.
    c. John picked Emerging Markets because further diversification is a good thing and he is not excited where the US is these days.
    d. Tom chose Cash.
    e. Jim chose Infrastructure.
    f. Joe picked Private Credit.
2. Tom stated the purpose of this exercise was to see if there was a consensus, which there wasn't. Joe responded that this suggests the real consensus is a flight to safety.
3. Tom said the goal of the fund is to be balanced to survive whatever the future brings.
    a. But should we have opinions and bet on them? If we have an idea what environment we are going into, do we tilt away from balanced? Todd questioned if we were already tilted.
    b. Bridgewater suggested we are more balanced than our peers but then a recent report from BlackRock Risk Solutions suggests that maybe we aren't in stress scenarios like 2007-2008.
    c. John suggested a useful tool would be to assign a time frame to this question. This year vs 5 years would give radically different views.
4. Charlie said we can't tilt to Private Markets because of liquidity limits but in a recession the allocation to Private Markets will go up because of the denominator (total fund NAV) going down.
5. Joe wondered at what point you go more to cash and Jim said it depends on what type of market you think you are in.
6. Charlie wondered where you'd want to be in a downturn. Jim replied with Private Credit. Charlie suggested that as cash comes in, instead of giving it to public markets give it to James to reduce the Private Credit underweight.
7. Tom believes there should be a shift to Asia.
8. Todd provided a breakout of financing rates used for PSERS $7.7 billion of total return swaps as well as the rise in 3 month LIBOR relative to other short rates. He said dealers will quote against any index a PM chooses as the basis market in the front–end is actively traded.

SAA Planning

1. Tom said the above discussion leads in to #5 on the agenda – SAA Planning. The new allocation is due in August and we should start thinking about it and planning for it now.
2. Joe wondered how to message leverage. Its cost and how it is used to exploit a downturn.
3. Todd presented to the committee his AAC Follow-Ups handout and talked about Long Treasuries.
    a. The Long Treasuries exposure was increased by $200 million at the end of February and it was up $6.5 million in March.
    b. Todd is replicating the 48 bonds in the policy benchmark with 2 bonds (the cheapest to deliver for 2 futures contracts), so there will be tracking error. Exposure underperformed its benchmark by 19bps, or $2.7 million, in February with 9bps from tracking error and 10bps from leverage. The impact from leverage depends on what financing rate is actually used.
    c. Annual futures transaction costs are greater than $200,000 annually.
    d. Bottom line: Todd's preference would be to put this exposure on via total return swaps which would eliminate tracking error adjusted for leverage but introduce other risks. While his preference was to execute total return swaps he believes it is in the Fund's best interest to continue with futures. Futures provide day 1 liquidity for the Fund during a crisis whereas bilateral OTC derivatives cannot be counted on during times of stress. Executing via total return swaps would add significant counterparty risk and wrong way exposure.
    e. Todd provided an update on the CPI swap terminations done in February. The termination timing worked out well both from a duration and a breakeven perspective.
    f. Todd provided the document with BRS volatility assumptions that Bob referenced when framing out the Fund's largest active risks in the previous meeting.
4. Tom asked the committee if they had any ideas on how to begin planning the SAA.
5. He said one way to do it is to look to our strategic partners. Aon – get their expected returns for each asset class and the correlation matrix and then we plug into a spreadsheet to see what mix gets us to the actuarial required return. Bridgewater – plug this mix into Bridgewater's RBT tool and see what sort of environmental biases we have. BRS – plug this mix into BRS and use their ex ante risk assumptions. So we get 3 views about the mix.
6. A second way to do it is to have a matrix where we have asset classes going down the page and 3 geographic regions going across the page (Asia, Americas, Europe). The idea would be to more explicitly have balance geographically.
7. Tom said the markets are potentially getting to an inflection point, such that whatever we decide in August is something we should be comfortable with for the subsequent year.
8. Tom said there are some Asia managers we are looking at: one from Japan, another from India, and Bridgewater China.
9. Tom thinks Emerging Markets should no longer be just one line item and therefore thinks adding regions to the SAA might be very helpful.
10. Charlie suggested devoting the next AAC meeting to this topic of SAA planning.
11. Tom agreed and further stated they need to think about how to approach August with the board.

The Asset Allocation Committee meeting was adjourned at 2:45 PM.

Allocation Implementation Committee Charter

Overall Roles and Responsibilities

The Allocation Implementation Committee serves as the governing committee for the implementation of the strategic and tactical asset allocation, including manager selection and sizing.

Responsibilities

The specific responsibilities of the Allocation Implementation Committee include:

- Reviewing the performance of the Fund and each asset class quarterly
- In-depth review of the performance and structure of each asset class at least once a year
- Recommending, reviewing, and approving tactical asset allocation trades within asset classes
- Reviewing and approving recommendations for the hiring/funding of individual managers
- Reviewing and approving all co-investments
- Recommending termination of managers to the CIO
- Reviewing and recommending benchmark changes for each asset class to the Asset Allocation Committee, coordinating with internal and external asset class specialists.
- Establishing policies related to allocation implementation.

Meetings

The Allocation Implementation Committee will generally meet once a month or when necessary at the call of the committee co-chairs. Meeting dates and times should be specified a year in advance.

Members

Ex-Officio voting members include the following:

- Chief Investment Officer
- Deputy Chief Investment Officer – Traditional
- Deputy Chief Investment Officer – Non-Traditional
- All Managing Directors

Committee Co-Chairs: Tom Bauer, Deputy CIO – Traditional
Charlie Spiller, Deputy CIO – Non-Traditional

Non-voting participant: Joe Sheva, Risk Manager

Recording Secretary: Administrative Assistants (rotating)

All members of the investment staff are invited to each general meeting; however, only those with specific asset classes to cover are required to attend.

Allocation Implementation Committee Charter

All votes are binding on the committee as they relate to manager hiring and termination votes as well as co-investments. Unanimous votes are required for all hiring and co-investments. Majority votes are required for terminations. All manager actions (hiring and terminations) are advisory to the Finance Committee of the Board and require Board approval prior to implementation. All co-investment votes are binding and require no Board approval.

Reports

The committee will receive and review the following reports, as applicable:

- Agenda for each meeting prepared by the Committee Co-Chairs
- Minutes from the previous meeting to be distributed prior to the next meeting (to be completed by the Committee Co-Chairs)
- Asset Class Performance/Portfolio Review Reports
- Quarterly performance reports produced by the General Investment Consultant
- Portfolio recommendations for tactical asset allocation trades within asset classes
- Portfolio Manager and Investment Consultant recommendations for hiring
- Portfolio Manager recommendations for each co-investment
- Portfolio Manager and Investment Consultant recommendations for terminations

Approval

8/1/2016

James H. Grossman, Jr. — Date
Chief Investment Officer

April 20, 2018, 10:00 am – 12:00 pm, Board Room

1. Approval of minutes of March 21, 2018 meeting

2. Forward calendar of potential investment recommendations for future AIC Meetings

   none

3. Forward calendar of potential investment recommendations for May, August, October & December 2018 Investment Committee Meetings

   May 2018:

Name of Investment	**Classification**	**Amount in M's**	**Name of PM**
TSSP Opportunities Partners IV, L.P.	HY/Private Credit	$150	James Del Gaudio
Effissimo Capital Management, Pte, Ltd.	International Public Equity	$200	Ray Schleinkofer/Jeff Burton
Kelso Investment Associates X, L.P.	Private Equity	$75	Darren Foreman
Trilantic Capital Partners VI (North America), L.P.	Private Equity	$75	Darren Foreman
Crestview Partners IV, L.P.	Private Equity	?	Mike Tyler
AG Realty Value Fund X, L.P.	Value-added Real Estate	$150	Bill Stalter
LEM Multifamily Fund V, L.P.	Value-added Real Estate	100	Melanie Cubias/Bill Stalter

August 2018:

Name of Investment	Classification	Amount in M's	Name of PM
Bain Capital Asia Fund IV, L.P.	Private Equity	$150	Michael Tyler
Global Transportation Income Fund	Absolute Return	$200	Bob Little
Caspian Keystone Focused Fund, Ltd./Inefficient Markets Strategy	Absolute Return	TBD	Bob Little
PIMCO Commercial Real Estate Debt Fund	HY/Private Credit	$150	James Del Gaudio
NGP Natural Resources XII, L.P.	Commodities	$225	Ray Schleinkofer/Michael Tyler
Steadview Capital Partners, L.P.	Emerging Market Equity	$200	Ray Schleinkofer/Jeff Burton

October/December 2018:

Name of Investment	Classification	Amount in M's	Name of PM
Blackstone Real Estate Partners IX, L.P.	Opportunistic RE	$300	Bill Stalter
Senior Housing Partnership Fund VI, L.P.	Value-Added RE	$100	Bill Stalter
Exeter Core Industrial Club Fund III, L.P.	Core RE	$100	Melissa Quackenbush
TCI Real Estate Partners III	HY/Private Credit	$125	James Del Gaudio
Bridgewater China All Weather	Risk Parity	$250	Ray Schleinkofer/Susan Oh
Triton Value Fund	Non-US Public Equity	$200	Ray Schleinkofer/Jeff Burton
Cederberg Capital	Emerging Markets Equity	$200	Ray Schleinkofer/Jeff Burton
RCH	MLP	$200	Ray Schleinkofer/Chris Baker

4. Asset Class Review: US Equity, MLP, NonUS Equity & External Public Equity Managers: Messrs. Baker, Burton & Schleinkofer

5. Next AIC meeting: May 14, 2018, 1:00 pm to 3:00 pm

Commonwealth of Pennsylvania, Public School Employees' Retirement System

Allocation Implementation Committee ("AIC")

Meeting Minutes

March 23, 2018

1:34 PM

Committee Members Present:
Charlie Spiller
Tom Bauer
John Kemp
Jim Grossman (in at 1:38)
Joe Sheva (non-voting participant)

Other Staff Present:

Chris Baker	Susan Oh
Michael Benson	Christopher Parks (in at 1:39pm)
Jeff Burton	Melissa Quackenbush
Angela Chen	Ray Schleinkofer (out at 3:27pm)
Melanie Cubias	Larry Shank
Carolyn Harley	Steve Skoff
Luke Jacobs	Jarid Snyder
Patrick Knapp	Kelly Sprenkle
Tony Meadows	Andrew Turner
Rachel Miller	

Charlie Spiller, Chair, called the Allocation Implementation Committee Meeting to order at 1:34 PM in the 4th floor Board Room at PSERS' headquarters.

The AIC minutes from the February 16, 2018 meeting were approved.

Charlie Spiller along with the Portfolio Managers, reviewed the Forward Calendar and gave brief overviews for 17 potential investment recommendations for the May, August, October, and December 2018 Investment Committee Meetings. Patrick Knapp stated that the Crestview Partners IV, L.P. Private Equity account for the amount of 125 million is added to the agenda for the Board's May 2018 meeting. There was some discussion.

Susan Oh presented the group with a slide presentation of the Asset Class Review of Risk Parity and Currency Hedging. As part of this review, Larry Shank discussed the PSERS Risk Parity Mandate Performance and the PSERS Foreign Currency (FX) Hedging Program. There was some discussion.

Charlie gave a preview of the next AIC meeting. The next meeting is scheduled for April 20, 2018 at 10:00 am. The meeting adjourned at 3:29 PM.

Respectfully Submitted,
Kelly L. Sprenkle