

HOW...

ASRS Employees Deliver Service With PRIDE!

PROFESSIONALISM

We promote, strive for and expect individuals, teams, and divisions to possess professional qualities and skills to lead the organization.

- Displays a friendly, respectful and courteous demeanor even when confronted by adversity
- Has proactive and responsive approach to internal and external customer needs
- Possesses good communication and active listening skills
- Is a trusted contributor (manager, leader, SME, analyst, teammate)
- Takes personal accountability • Has subject matter expertise
- Has critical thinking skills • Has an honest, fair, non-judgmental mind-set
- Is adaptable to beneficial change • Adheres to the ASRS Code of Conduct

RESULTS

We treasure the achievements of individuals, teams, divisions and the agency that energize the organization.

- Meets goals and objectives
- Completes projects
- Produces quality work products
- Satisfies customers
- Attains individual accomplishments
- Manages risks successfully

IMPROVEMENT

We appreciate individuals, teams or divisions who drive the agency forward with new, innovative ideas and solutions.

- Promotes new ideas
- Enhances outcomes and performance
- Solves problems
- Enhances morale
- Improves relationships
- Increases efficiency, effectiveness or reduces costs

DIVERSITY

We recognize that utilizing different talents, strengths and points of view, strengthens the agency and helps propel outcomes greater than the sum of individual contributors.

- Encourages an attitude of openness and a free flow of ideas and opinions
- Treats others with dignity and respect
- Works effectively to accomplish goals with teams comprised of dissimilar individuals
- Recognizes and promotes skills in others attained on and off the job

EXCELLENCE

We celebrate individuals, teams and divisions who exceed expectations and deliver service with a PRIDE that permeates the organization.

- Surpasses member, stakeholder and associate expectations
- Demonstrates a willingness to go the extra mile to engender a positive public image
- Embraces change in a manner that inspires others
- Accepts responsibility and challenges with enthusiasm
- Takes a personal interest in promoting teamwork through effective use of communication (verbal, non-verbal, written and technological techniques)
- Creates a motivated, healthy and productive work environment that celebrates and rewards the accomplishments of others



**ARIZONA STATE
RETIREMENT SYSTEM**



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

AGENDA

NOTICE OF COMBINED PUBLIC MEETING AND POSSIBLE EXECUTIVE SESSION OF THE ARIZONA STATE RETIREMENT SYSTEM BOARD

3300 North Central Avenue, 10th Floor Board Room
Phoenix, AZ 85012

February 26, 2016
8:30 a.m.

Pursuant to A.R.S. § 38-431.02 (F), notice is hereby given to the Trustees of the Arizona State Retirement System (ASRS) Board and to the general public that the ASRS Board will hold a meeting open to the public on Friday, February 26, 2016, beginning at 8:30 a.m., in the 10th Floor Board Room of the ASRS offices at 3300 N. Central Avenue, Phoenix, Arizona 85012. Trustees of the Board may attend either in person or by telephone conference call.

The Chair may take public comment during any agenda item. If any member of the public wishes to speak to a particular agenda item, they should complete a "Request To Speak" form indicating the item and provide it to the Board Administrator.

Pursuant to A.R.S. § 38-431.03(A)(3), the ASRS Board of Trustees may vote to go into executive session, which will not be open to the public, for the purpose of obtaining legal advice on any item on the Agenda.

This meeting will be teleconferenced to the ASRS Tucson office at 4400 East Broadway Boulevard, Suite 200, Tucson, Arizona 85711.

The Agenda for the meeting is as follows:

1. Call to Order; Roll Call; Opening Remarks.....Mr. Kevin McCarthy
Board Chair
2. Approval of the Minutes of the January 29, 2016 Public Meeting and Executive Session of the ASRS Board (*estimated time 1 minute*).....Mr. Kevin McCarthy
3. Approval, Modification, or Rejection of Recommended Administrative Law Judge's Decision Regarding Ms. Cathy Davis' Appeal for a Retroactive Retirement Date (*estimated time 20 minutes*)Ms. Jothi Beljan
Assistant Attorney General
.....Mr. Rex Nowlan
Agency Counsel Section Chief, Attorney General's Office

4. Appropriate Action Regarding Mr. Donald Smith's Motion for Review and Reconsideration of a Final Decision (*estimated time 20 minutes*)Ms. Jothi Beljan
.....Mr. Rex Nowlan

5. Presentation Regarding PRIDE Award for Excellence (*estimated time 5 minutes*).....
.....Mr. Paul Matson
Director
.....Mr. Anthony Guarino
Deputy Director and Chief Operations Officer

6. Presentation, Discussion, and Appropriate Action Regarding the 2016 ASRS Legislative Initiatives and Legislative Update (*estimated time 15 minutes*) Mr. Patrick Klein
Assistant Director External Affairs
.....Mr. Nicholas Ponder
Government Relations Officer

7. Presentation, Discussion, and Appropriate Action Regarding ASRS Investment Program Updates (*estimated time 20 minutes*) Mr. Paul Matson
 - a. ASRS Fund Positioning
 - b. IMD Investment House Views
 - c. Asset Class Committee (ACC) Activities
 - d. Tactical Portfolio Positioning
 - e. Strategic Asset Allocation Policy (SAAP) Implementation
 - f. IMD Projects, Research, and Initiatives

8. Presentation, Discussion and Appropriate Action Regarding Independent Reporting, Monitoring, and Oversight of the ASRS Investment Program – Includes Total Fund Q4-15 (*estimated time 20 minutes*).....Mr. Allan Martin
Partner, NEPC

9. Presentation, Discussion, and Appropriate Action Regarding Staff Recommended Updates to the ASRS Board Governance Policy Handbook (*estimated time 10 minutes*).....
.....Mr. Paul Matson

10. Presentation, Discussion, and Appropriate Action Regarding the Director's Report as well as Current Events (*estimated time 5 minutes*) Mr. Paul Matson
.....Mr. Anthony Guarino
 - A. 2015 Investments Report
 - B. 2015 Operations Report
 - C. 2015 Budget and Staffing Reports
 - D. 2015 Cash Flow Statement
 - E. 2015 Appeals Report
 - F. 2015 Employers Reporting

- 11. Presentation and Discussion Regarding Informational Updates from Prior and Upcoming Committee Meetings *(estimated time 15 minutes)*
 - a. Operations and Audit Committee (OAC)Mr. Jeff Tyne, Chair
..... Mr. Anthony Guarino
The next OAC Meeting will be held on April 12, 2016.
 - b. External Affairs Committee (EAC)..... Dr. Richard Jacob, Chair
..... Mr. Patrick Klein
The next EAC Meeting will be held on March 11, 2016.
 - c. Investment Committee (IC) Mr. Tom Connelly, Chair
..... Mr. Gary Dokes
The next IC Meeting will be held on April 25, 2016.

- 12. Board Requests for Agenda Items *(estimated time 1 minute)*
.....Mr. Kevin McCarthy

- 13. Call to the Public.....Mr. Kevin McCarthy

Those wishing to address the ASRS Board are required to complete a Request to Speak form before the meeting indicating their desire to speak. Request to Speak forms are available at the sign-in desk and should be given to the Board Administrator. Trustees of the Board are prohibited by A.R.S. § 38-431.01(H) from discussing or taking legal action on matters raised during an open call to the public unless the matters are properly noticed for discussion and legal action. As a result of public comment, the Board may direct staff to study and/or reschedule the matter for discussion and decision at a later date.

- 14. The next regular public ASRS Board meeting is scheduled for Friday, March 25, 2016, at 8:30 a.m., at 3300 N. Central Avenue, in the 10th Floor Board room, Phoenix, Arizona.

The Board will take a 15 minute recess while the meeting moves to the 14th floor conference room, where the balance of the meeting will take place.

- 15. Presentation, Discussion and Appropriate Action Regarding the Board Governance EvaluationsMr. Kevin McCarthy
 - a. Trustees' 2015 Self-Evaluation
 - b. Board 2015 Self-Evaluation
 - c. Critical Issues of 2016

- 16. Adjournment of the ASRS Board.

A copy of the agenda background material provided to Board Trustees (with the exception of material relating to possible executive sessions) is available for public inspection at the ASRS offices located at 3300 North Central Avenue, 14th Floor, Phoenix, Arizona and 4400 East Broadway Boulevard, Suite 200, Tucson, Arizona. The agenda is subject to revision up to 24 hours prior to meeting. These materials are also available on the ASRS website

(<https://www.azasrs.gov/web/BoardCommittees.do>) approximately 48 hours prior to the meeting.

Persons(s) with disabilities may request a reasonable accommodation such as a sign language interpreter or alternate formats of this document by contacting Tracy Darmer, ADA Coordinator at (602) 240-5378 in Phoenix, at (520) 239-3100, ext. 5378 in Tucson, or 1-800-621-3778, ext. 5378 outside metro Phoenix or Tucson. Requests should be made as early as possible to allow time to arrange the accommodations.

Dated February 19, 2016

ARIZONA STATE RETIREMENT SYSTEM

Melanie A. Alexander
Board Administrator

Paul Matson
Director

Agenda Item #2

Confidential Executive
Session Minutes were
provided to the Trustees and
not included in this book.



ARIZONA STATE RETIREMENT SYSTEM

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*Paul Matson
Director*

MINUTES PUBLIC MEETING ARIZONA STATE RETIREMENT SYSTEM BOARD

Friday, January 29, 2016
8:30 a.m., MST

The Arizona State Retirement System (ASRS) Board met in the 10th Floor Board Room, 3300 N. Central Avenue, Phoenix, Arizona. Mr. Kevin McCarthy, Chair of the ASRS Board, called the meeting to order at 8:30 a.m., Arizona Time.

The meeting was teleconferenced to the ASRS office at 7660 E. Broadway, Tucson, Arizona 85710.

1. Call to Order; Roll Call; Opening Remarks

Present: Mr. Kevin McCarthy, Chair
Mr. Jeff Tyne, Vice Chair
Mr. Clark Partridge
Professor Dennis Hoffman
Mr. Lorenzo Romero
Dr. Richard Jacob
Mr. Robert Wadsworth (joined via teleconference at 8:45 a.m.)
Mr. Tom Connelly (via teleconference)
Mr. Tom Manos

A quorum was present for the purpose of conducting business.

Mr. McCarthy took a moment to welcome Mr. Lorenzo Romero, the newest Board member.

2. Approval of the Minutes of the December 4, 2015 Public Meeting and Executive Session of the ASRS Board

Motion: Mr. Jeff Tyne moved to approve the Minutes of the December 4, 2015 Public Meeting and Executive Session of the ASRS Board. Prof. Dennis Hoffman seconded the motion.

By a vote of 8 in favor, 0 opposed, 0 abstentions, and 1 excused, the motion was approved.

3. Approval, Modification, or Rejection of Recommended Administrative Law Judge's Decision Regarding Mr. Donald Smith's Appeal of a Domestic Relations Order

Ms. Jothi Beljan, Assistant Attorney General, confirmed Mr. Donald Smith was not present and provided a summary of the appeal to the Board and the ASRS' position. Mr. Smith's appeal

involves a factual dispute of the implementation of a Domestic Relations Order (DRO). The DRO stated the specific numerator which included service credit transferred from the Public Safety Personnel Retirement System (PSPRS) but only defined the denominator by stating, "is the number of full months the Participant participated in the Plan as of the date of Participant's commencement of benefits from the Plan." Per the DRO, when calculating the denominator, the ASRS did not include service credit transferred from the PSPRS based on the language in the DRO. Mr. Smith has indicated that the intent of the DRO was for the denominator and the numerator to be the same although that is not how the DRO was written. Ms. Beljan stated the ASRS is required to implement the DRO as written.

Motion: Mr. Clark Partridge moved to accept the Administrative Law Judge's Decision. Prof. Dennis Hoffman seconded the motion.

By a vote of 8 in favor, 0 opposed, 0 abstentions, and 1 excused, the motion was approved.

4. Approval, Modification, or Rejection of Recommended Administrative Law Judge's Decision Regarding Ms. Amy Smith's Appeal of an Overpayment

Ms. Amy Smith was present via teleconference.

Ms. Jothi Beljan provided a summary of the appeal for the Board and the ASRS' position. Ms. Smith was employed with Maricopa Integrated Health System (MIHS) on a part-time basis. Through the course of a self-audit by MIHS in June 2014, it was discovered MIHS incorrectly remitted contributions on behalf of Ms. Smith from August 2010 to October 2010, because she did not meet ASRS membership requirements under A.R.S. § 38-711(23)(b). MIHS requested a return of those contributions under A.R.S. § 38-738(A) which the ASRS provided. MIHS would then return the employee contributions to Ms. Smith as wages. Also in June 2014, Ms. Smith submitted an application for refund of contributions, resulting in the ASRS unknowingly making an overpayment due to the error later discovered by MIHS. The ASRS is required to collect the overpayment from Ms. Smith under A.R.S. § 38-765.

Ms. Smith was provided an opportunity to present her position. She advised the Board that when she began her employment with MIHS in August 2010, she made contributions to the ASRS as this was her second employment with an ASRS employer. In 2014, Ms. Smith made the decision to consolidate all of her retirement accounts into one IRA which is why she submitted her application for refund of contributions. Ms. Smith stated that since she rolled over her contributions into an IRA she did not have the ability to pay the ASRS the full amount requested of \$2,136.56. Instead, Ms. Smith offered to pay the ASRS \$1,707.73, the after-tax amount refunded to her by MIHS and feels the ASRS should be seeking restitution of the remaining balance from MIHS since this was their error and not hers.

Mr. Kevin McCarthy expressed the Board is sympathetic to the position in which Ms. Smith has been placed in but the Board is bound by the Arizona Revised Statutes as it pertains to the requirement to collect overpayments of contributions.

Mr. Tom Manos stated for the record that although Ms. Smith referred to MIHS as the County Hospital, Maricopa County divested itself of the hospital in 2005. Mr. Manos further stated that if MIHS was a county hospital, he would recuse himself from any votes on the matter but since that is not the case, he does not feel the need to do so.

Prior to making a motion, Mr. Jeff Tyne added this is an unfortunate set of circumstances and he also sympathizes with the situation Ms. Smith is in; however, the law clearly dictates what is required when an overpayment occurs.

Motion: Mr. Jeff Tyne moved to accept the Administrative Law Judge's Decision. Dr. Richard Jacob seconded the motion.

By a vote of 9 in favor, 0 opposed, 0 abstentions, and 0 excused, the motion was approved.

Mr. Robert Wadsworth joined the meeting at 8:45 a.m. and participated in the vote.

5. Presentation, Discussion, and Appropriate Action Regarding the ASRS Proposed Legislation for the 2016 Legislative Session

Mr. Patrick Klein, Assistant Director, External Affairs Division, and Mr. Nick Ponder, Government Relations Officer, provided a brief update to the Board regarding the 2016 Legislative agenda.

The following bills were discussed:

- **HB2104: ASRS; Retention of Credited Service** – This is a clean-up bill to HB2050 from 2014, that removed the Social Security Administration Section 218 Agreement as a requirement for participation in the ASRS. The ASRS needs to seek approval from the Internal Revenue Service (IRS), for individuals who are currently in our plan but who may not be eligible to be in our plan, in order to maintain their credited service. The ASRS received approval from the IRS and this bill contains the language required to grandfather this group into the ASRS. This bill contains an emergency clause because it needs to be effective prior to August 31, 2016, in the event the legislative session doesn't close by May 31, 2016. This bill passed through the Government and Higher Education Committee January 21, 2016.
- **HB2159: ASRS; Rulemaking Exemption** – The ASRS is requesting an exemption from rulemaking for the purposes of actuarial assumptions and calculations, investment strategy and decisions, and accounting methodology. The bill was assigned to the Government and Higher Education Committee this week and is on the February 4, 2016, meeting agenda.
- **HB2160: ASRS; Eligible Rollovers** – This bill eliminates indirect rollovers as an option for payment of service purchase. This bill passed through the Government and Higher Education Committee January 28, 2016.
- **HB2243: ASRS; LTD Program; Liability** – This bill protects the ASRS from “bad faith” claims relating to the denial of benefits, similar to ERISA plans. This bill passed through the Government and Higher Education Committee January 28, 2016.
- **SB1037: ASRS; Board Delegation; Benefit Determinations** – This bill allows the ASRS Board to assign a Committee of the Board for the purposes of determinations on appealable agency actions, granting full legal authority of the Board to the Committee of the Board to accept, reject, or modify a determination of the Administrative Law Judge, including requests for rehearing. This bill passed through the Senate Finance Committee January 27, 2016, passed through the full Senate January 28, 2016, and is ready to move to the House.
- **SB1038: ASRS; Reinstatement; Contribution Amount** – This bill clarifies the language as it relates to a member who withdrew contributions and the ex-spouse received a portion of the contributions through a Domestic Relations Order (DRO). If a

member wishes to reinstate past service credits, the member must repay the total amount in order to receive the full amount of service credit, not only the portion received by the member. This bill passed through the Senate Finance Committee January 20, 2016 and is scheduled for a full Senate vote on February 1, 2016.

- **SB1144: ASRS; Contributions; Adjustments** – This bill modifies language to A.R.S. § 38-738(A) & (B) to ensure compliance with the Internal Revenue Code. This bill passed through the Senate Finance Committee January 27, 2016, and is scheduled for a full Senate vote on February 1, 2016.

The following are bills that affect the ASRS but not initiated by the ASRS:

- **SB1151: ASRS; Continuation** – This bill relates to the statutory life of the ASRS and extends it for eight years to July 1, 2024. This bill passed the Senate Finance Committee January 27, 2016 and scheduled for a full Senate vote on February 1, 2016.
- **HB2115: Public Employees; Misappropriation; Penalty** – This bill has been assigned to the Government and Higher Education Committee and if passed, provides that an individual who misappropriates public monies would not be eligible to receive a pension benefit that would have been provided by the agency.
- **HB2157: ASRS; Political Subdivision Entities** – This bill has been assigned to the Government and Higher Education Committee and if passed, would exclude membership in the ASRS of new employees of political subdivision entities. Employees who are currently members of the ASRS and become employed with a political subdivision entity will maintain their membership in the ASRS. The ASRS has identified 15 employers that would be impacted by this bill.
- **HB2237: Retirement; Return to Work; Restrictions** – This bill has not yet been assigned to a Committee. If passed, this bill would prohibit a retiree from returning to work either directly through the employer or through a leasing company for 365 days from the date of retirement.
- **HCR2040: State Monies; Prohibited Investments; Terrorism** – This is a Constitutional amendment that would preclude any state, public retirement systems, counties, municipalities and other political subdivisions from contracting with or investing in any legal entity that is invested in or doing business with the government of a country that is designated by the U.S. Department of State on or after January 1, 2015, as a state sponsor of terrorism. The three countries currently on the list are Syria, Sudan and Iran.

Mr. Ponder closed by advising the Board he is waiting for the Public Safety Personnel Retirement System (PSPRS) language modifications. Senator Lesko has been organizing a pension review committee to make some modifications to the PSPRS plan. The bill numbers were assigned late January 28, 2016, but the language has not been posted on the website yet in order for Mr. Ponder to provide a better summary of what is being proposed. It is Mr. Ponder's belief that none of the PSPRS bills will have an effect on the ASRS.

6. Presentation, Discussion, and Appropriate Action Regarding Proposed Modifications to the Existing ASRS Plan and Long Term Disability (LTD) Strategic Investment Policies (SIPs), Approval of Newly Created SIPs for the ASRS System and the Proposed Strategic Asset Allocation for LTD and System

Mr. Paul Matson, Director, presented this topic to the Board with Mr. Gary Dokes, Chief Investment Officer. Ms. Lupita Breland, Portfolio Analyst and Mr. Micheal Copeland, Investment Analyst, were also available to respond to any questions from the Board.

Mr. Matson reviewed the following:

- Proposed policy modifications pertaining to the Asset Allocation and Tactical Positioning and Rebalancing for the Plan and LTD to make them clearer.
- Proposal to establish new policies pertaining to the System's Asset Allocation and Tactical Positioning and Rebalancing.
- Proposed Strategic Asset Allocation for LTD and System, similar to those approved by the Board for the Plan in 2015.

Mr. Matson opened up the discussion to questions from the Board. There were no questions.

Motion: Mr. Tom Connelly moved to 1) Approve modifications to the existing Strategic Investment Policies (SIPs) 001, 002, 003, and 004 pertaining to the Asset Allocation and Tactical Positioning and Rebalancing SIPs for the Plan and LTD, as recommended by the Investment Committee (IC) at the November 30, 2015 meeting; 2) Approve two new SIPs pertaining to System's Asset Allocation and Tactical Positioning and Rebalancing, as recommended by the IC at the November 30, 2015 meeting; and 3) Approve the proposed SAA for LTD & System, as recommended by the IC at the April 13, 2015 meeting. The proposed changes reflect an allocation to asset classes similar to those of the Board approved Plan Strategic Asset Allocation (SAA) Policy on March 27, 2015.

Prof. Dennis Hoffman seconded the motion adding the following amendments to 1) as presented in Appendix I of this agenda item; 2) as presented in Appendix I of this agenda item; and 3) as presented in Appendix II of this agenda item.

Dr. Richard Jacob seconded the amendments.

By a vote of 9 in favor, 0 opposed, 0 abstentions, and 0 excused, the motion was approved.

7. Presentation, Discussion, and Appropriate Action Regarding an Annual Update on Strategic Plan Priority #2 in the ASRS 5-Year Strategic Plan: Optimize Risk Management

Mr. Anthony Guarino, Deputy Director and Chief Operations Officer, introduced this topic stating that risk management has been an agency priority since 2013 when the Strategic Plan was updated. The Board has tasked Management with implementing a risk management program that incorporates best practices, providing the Board with some assurance that staff is taking the appropriate steps to minimize risks. Overall, Mr. Guarino feels the ASRS is succeeding and staff's outlook is generally positive, which he said the report will reflect. Mr. Guarino added, the ASRS has adopted the principles of the Committee of Sponsoring Organizations of the Treadway Commission and has organized a permanent standing committee of Senior and Executive Managers who meet weekly, flagging potential risk events, assessing controls and developing remediation strategies when needed. Mr. Guarino turned the discussion over to Ms. Lisa King, Policy Analyst, to provide a summary of the report.

Ms. King reviewed the following report highlights:

- **Investment Management and Volatility:** Management Outlook is Neutral to Positive – The ASRS recognizes there are risks and vulnerabilities but they have been manageable and the agency is continuing to strengthen controls.
 - The risk assessment conducted identified 30 risks. The overall conclusion is the agency has controls in place that mitigate those risks within the agencies risk tolerance.
 - Additional controls have been implemented since the risk assessment was completed.
 - The Office of the Auditor General's (OAG) Sunset Review “found that the current practices and procedures are reasonably consistent with industry standards and generally in line with many best practices.” There were a few recommendations from the OAG the ASRS has agreed with and will implement as appropriate.
- **Data and System Security:** Management Outlook is Neutral to Positive – For the same reasons as the previous item. The agency is developing a framework that conforms to the National Institute of Standards and Technology standards for information security.
 - A life cycle has been developed to conducted assessments. Every other year the agency brings in an external consultant to perform a penetration assessment. Once the assessment is completed, an internal risk assessment is completed. In the years the external consultant is not performing assessments, the agency's Internal Audit Division is performing a security audit.
 - Results of the 2014 risk assessment found the ASRS has controls in place for all 19 zones. The agency set an aim to increase security maturity level in 12 of the 19 zones.
 - The OAG Sunset Review originally reviewed the agencies information technology practices March 2014, provided some recommendations and came back a little more than a year later to re-review. What the OAG found is the ASRS was taking action to improve all areas the OAG identified and fully addressed the OAG's concerns in the area of encryption. The ASRS has concurred with and will implement the remaining OAG recommendations.
- **Agency Effectiveness and Efficiency:** Management Outlook is Neutral to Positive – Operations rely on the strategic planning model which sets the agency's specific objectives and performance targets. The agency measures and reports on those regularly.
 - Effectiveness and efficiency are reviewed in the agency's risk assessments. Numerous controls and metrics are in place but the agency recognizes that it has some vulnerabilities.
 - CEM Benchmarking is used as an external source to measure the agency's performance against its peers. The aim is to be high performing and cost effective. While the CEM data is positive, CEM has identified some areas where improvement can be made and the ASRS is currently moving towards making those improvements.
- **Customer Service and Satisfaction:** Management Outlook is Neutral to Positive – For the same reason as the previous item.
 - The ASRS has strong controls in place to measure member satisfaction and reports on these regularly.
 - Based on a recent survey, the area in need of strengthening the controls is in measuring employer satisfaction.

- The Employer Services Division has been reorganized and the agency is in the process of developing employer customer service measures.
- **Diminished Independence and Autonomy:** Management Outlook is Neutral to Positive – The agency has determined that the operational capacity depends on adequate funding, qualified staff, and modern technology. To date, these constraints have not proven to be enough of an impediment to recommend a change at this time.
 - The OAG Sunset Review has determined that the ASRS met its statutory objective and purpose and that terminating the ASRS would significantly harm the public welfare. The OAG issued supplemental reports after the performance report, with one report citing some research supporting the allowance of public retirement systems to establish their own budgets, procurement rules and personnel rules. The ASRS does not currently have independence in all of these areas.
 - The ASRS will continue to use its risk assessments to evaluate how the agency is impacted by the current level of independence and autonomy.
- **Contribution Rate Volatility:** Management Outlook is Neutral to Positive
 - The OAG found that the ASRS has controls in place to mitigate against contribution rate volatility but additional measures can be taken.
 - The ASRS established a funding policy in 2015 to address many of the OAG's concerns.
- **Benefit Spiking:** Management Outlook is Neutral to Positive – The ASRS has done research and found very few instances of benefit spiking. The impact of this appears to be minimal; however, the agency will continue to monitor this.
 - The OAG recommended procedure enhancements to identify employer termination incentive programs and assess the associated costs of any unfunded liability to the appropriate employer. The ASRS concurs and is currently working on implementing this.

8. Presentation and Discussion Regarding the Board Self-Evaluation Material Distribution to be Reviewed at the February 26, 2016 Meeting

Mr. McCarthy addressed the Board regarding the Board self-evaluation material, noting Trustees should submit their Board performance evaluation forms to him prior to the February Board meeting, allowing enough time for staff to prepare a summary of the responses.

9. Presentation, Discussion, and Appropriate Action Regarding the Director's Report as well as Current Events

Mr. Paul Matson made two announcements:

- The Long Term Disability contract is soon to expire. An RFP has been issued with the pre-bid conference taking place on February 1, 2016.
- The ASRS Tucson Office will be moving. The tentative date is February 16, 2016.

Mr. Matson responded to Prof. Dennis Hoffman's request to provide an update on the fiscal year-to-date investment returns, indicating it is approximately -6%, from June 30, 2015 (close of business) to current.

10. Presentation and Discussion with Respect to Informational Updates from Prior and Upcoming Committee Meetings

a. Operations and Audit Committee (OAC)

Mr. Jeff Tyne announced the next OAC meeting will be held on February 9, 2016 at 10:30 a.m. in the 14th floor conference room to discuss the contracts and procurement risk assessment, recently conducted audits and the quarterly internal audit report.

b. External Affairs Committee (EAC)

Dr. Richard Jacob announced the next EAC meeting will be held on February 12, 2016 at 10:30 a.m. in the 14th floor conference room to discuss updates on legislation.

c. Investment Committee (IC)

Mr. Tom Connelly announced the next IC meeting will be held on February 22, 2016 at 2:30 p.m. in the 14th floor conference room to review investment program updates, program oversight and the fourth quarter performance report.

11. Board Requests for Agenda Items

No requests were made.

12. Call to the Public

A member of the public, Ms. Deborah Gregor, requested to address the Board regarding a personal experience she is currently encountering which she believes could affect her ASRS account. Ms. Gregor advised the Board she doesn't know how to approach the issue or what she can do legally and asked for assistance.

Ms. Jothi Beljan reminded the Board that when a public member addresses the body that the Board can speak on the subject if it has been noticed on the agenda, the Board may ask an ASRS staff member to follow up with the public member or the Board may respond to criticism. In this case, Ms. Beljan recommended that the Board assign a staff member to discuss the matter with Ms. Gregor and Ms. Beljan could also provide contact information to the Attorney General Consumer Fraud Section to the public member after the meeting. Ms. Beljan added that the ASRS has very high security on its member accounts, there is a fraud officer at the ASRS that members can contact if there is an issue, and as far as any individual getting to an individual's ASRS account, there are only three legally identified types of attachments to an account: a federal tax levy or lien, a child support order, and a Domestic Relations Order. Ms. Beljan concluded there is no other way an individual can access an ASRS member's account.

Mr. Paul Matson announced that the police officer in attendance in the meeting has offered to meet with Ms. Gregor, along with Mr. Anthony Guarino, to discuss the issue. Ms. Gregor was agreeable to the offer.

13. The next regular ASRS Board meeting is scheduled for Friday, February 26, 2016, at 8:30 a.m., at 3300 N. Central Avenue, 10th Floor Board Room, Phoenix, Arizona.

14. Presentation, Discussion, and Appropriate Action Regarding the review of the Director and Employment Contract for the Director

Motion: Mr. Clark Partridge moved to go into Executive Session for the purpose of the Director's review and employment contract. Mr. Tom Manos seconded the motion.

By a vote of 9 in favor, 0 opposed, 0 abstentions, and 0 excused, the motion was approved.

The Board convened to Executive Session at 10:27 a.m.

Mr. Clark Partridge and Mr. Lorenzo Romero left the executive session at 10:50 a.m.

The Board reconvened to Public Session at 10:57 a.m.

Motion: Mr. Tom Manos moved to approve the Employment Contract for the ASRS Director, Mr. Paul Matson, with amended language to be added to the last sentence in paragraph 3. b., to read, "All remaining base salary for the remainder of the fiscal year would be fully payable." Once amended, the contract will be provided to the Board secretary. Dr. Richard Jacob seconded the motion.

By a vote of 6 in favor, 0 opposed, 0 abstentions, and 3 excused, the motion was approved.

The record should reflect the response of Mr. Robert Wadsworth, who was attending via teleconference, was momentarily delayed and he has confirmed that his vote was in favor of the motion and is reflected in the above results.

Mr. Tom Connelly experienced technical difficulty attempting to call back into the public session and was unable to participate in the vote. Mr. Connelly requested the record to reflect that had he been able to participate in the vote, he would have voted in favor of the motion.

15. Adjournment of the ASRS Board

Motion: Dr. Richard Jacob moved to adjourn the January 29, 2016 Board Meeting at 10:58 a.m. Mr. Jeff Tyne seconded the motion.

By a vote of 6 in favor, 0 opposed, 0 abstentions, and 3 excused, the motion was approved.

ARIZONA STATE RETIREMENT SYSTEM

Melanie A. Alexander
Board Administrator

Paul Matson
Director

Agenda Item #3

Recommended
Decision

Ms. Cathy Davis
v. ASRS

1 *Id.* The written estimate mailed to Appellant on December 26, 2014, advised that
2 “[r]etirement benefits may begin NO EARLIER than the day after termination and
3 receipt of your completed retirement packet.” Exhibit G.

4 5. Appellant last worked for the school district on May 22, 2015, which was the last
5 day of the 2014-2015 school year.

6 6. On September 16, 2015, after not receiving the retirement checks she
7 anticipated for June, July, and August 2015, Appellant telephoned ASRS and then
8 submitted her online retirement application. Exhibit I. That application defaulted to a
9 retirement date of September 16, 2015. Exhibit H. Appellant chose the Straight Life
10 Annuity Retirement Option. *Id.*

11 7. On September 21, 2015, Appellant emailed Dave King, Assistant Director of the
12 Member Services Section of ASRS, and requested a retroactive retirement date of May
13 23, 2015. Appellant maintained that during her telephone contacts with ASRS “no one
14 explained to me that I needed to submit an application” to begin receiving retirement
15 benefits. Exhibit J.

16 8. On September 24, 2015, Mr. King denied Appellant’s appeal to retire retroactive
17 to May 23, 2015. Exhibit L. He cited the relevant statutes and noted that because
18 Appellant’s retirement application was submitted on September 16, 2015, that is the
19 earliest date on which she could retire. Regarding Appellant’s claim that she was
20 unaware of the need to file a retirement application, Mr. King stated:

21 In reviewing your account and your claim you were never informed
22 about the paperwork required to commence retirement, the ASRS
23 has detailed notes from the advisor you spoke with on December
24 26, 2014 regarding retirement. According to these records, you
25 were informed by the advisor about the retirement process and that
26 you would need to complete the *Application for Retirement Benefits*
27 online through your secure account to begin benefits. The notes
28 indicate the call was dropped sometime after this information was
29 discussed, but the advisor requested a benefit estimate for the
30 May 23, 2015 date you were discussing to your confirmed
address on record. This benefit estimate also specifically informed
you that "retirement benefits may begin NO EARLIER than the day
after termination and receipt of your completed retirement packet."

1 The two subsequent contacts you made to the ASRS after the
2 December 2014 contact, and prior to September 16, 2015,
3 discussed health insurance details only and did not discuss the
4 retirement process. Specifically, you[r] contacts are noted as
5 concerning becoming Medicare eligible and what supplemental
6 plans were offered by the ASRS, not retirement. As a result, we
7 cannot agree with your assertion that you were never informed
8 that you needed to submit an *Application for Retirement Benefits*
9 in order to begin receiving benefits. Due to our decision, your
10 retirement date will remain September 16, 2015 and you will be
11 eligible to receive retirement benefits as of this date, no sooner.

9. Appellant submitted a letter of appeal on October 1, 2015.

10. On October 9, 2015, Anthony Guarino, Deputy Director of ASRS, denied the
11 appeal. He noted:

12 While we understand that as a teacher the end of the school year
13 may be busy, thousands of school professionals successfully apply
14 for retirement each year by their elected retirement date without
15 failing to file a retirement application with the ASRS prior to that
16 date. Ultimately, the member determines not only when to start
17 benefits, but how to receive the monthly pension. It is up to you to
18 ensure the ASRS receives your completed application by your
19 desired retirement date. The retirement application contains a
20 number of elections that are necessary to elect at the onset of
21 retirement that cannot be assumed by the ASRS. As a result, we
22 must affirm the previous decision made on your appeal that your
23 retirement date will remain September 16, 2015, the date the
24 ASRS first received a completed, retirement application from you.

25 While I apologize for any confusion you may have experienced in
26 discussing retirement with ASRS staff prior to September 16,
27 2015, I sincerely hope you understand the reason for our
28 decision to uphold the original determination on your appeal.
29 The ASRS does not have the authority to make a determination
30 that conflicts with statute.

Exhibit M.

11. Appellant requested a hearing and A.R.S. referred the matter to the Office of
Administrative Hearings.

1 12. At hearing, Ryan Guerra, Quality Analyst for ASRS testified. He indicated that
2 he had reviewed Appellant's' contacts with ASRS and that these notes suggest she
3 was told of the need to file a retirement application before receiving retirement benefits.
4 He reviewed the numerous places ASRS informs its members of need to submit a
5 retirement application, both on its website and through written materials. Guerra said
6 that members are ineligible to retire before submitting a completed retirement
7 application. He noted that it is the member's responsible to pick a retirement date and
8 make other elections.

9 13. Appellant testified that she did not know of the requirement to submit a
10 completed retirement application in order to receive retirement benefits. She believed
11 that ASRS should change her retirement date to May 23, 2015, the day after her
12 termination of employment with the school district both because the use of disjunctive
13 word "or" in A.R.S. §38-764(A) suggests that a retirement application is not
14 determinative of the retirement date and paying her retroactive benefits would not be
15 an issue for ASRS.

16 **CONCLUSIONS OF LAW**

- 17 1. ASRS has jurisdiction over the subject matter in this appeal.
- 18 2. Pursuant to A.R.S. § 41-1092.07(G)(1), Appellant has the burden of proof in this
19 appeal. The standard of proof is preponderance of the evidence. A.A.C. R2-19-
20 119(A).
- 21 3. A.R.S. § 38-764(A) provides that a member's retirement "is deemed to
22 commence on a date elected by the member." The statute provides that the "date shall
23 not be earlier than the date following the date of termination of employment, the date
24 ASRS receives the member's completed retirement application or the date specified by
25 the member."
- 26 4. This statute must be harmonized with A.R.S. §38-757(A), which expressly
27 provides that normal retirement can occur "[a]fter application on a form prescribed by
28 the director." Thus, there can thus be little doubt that a retirement application is a
29 necessary precondition to retirement.
- 30

1 5. The need for a completed application protects the member and ensures that a
2 member retires under his or her own terms. It is unreasonable for Appellant to believe
3 that a verbal mention of a possible retirement date is binding on any party, particularly
4 where as here, there was more than one available retirement date to Appellant.
5 Appellant could have retired on her 65th birthday as reflected in the benefits calculation
6 she requested, waited until the end of the school year or deferred retirement until she
7 obtained 80 points. The choice was Appellant's alone.

8 6. A.R.S. § 38-715(D) authorizes the ASRS Director to "[m]ake retirement under
9 this article effective retroactively to on or after the day following the date employment is
10 terminated if the member was unable to apply before the retroactive date through no
11 fault of the member." No evidence suggests that Appellant was unable to submit her
12 retirement application before May 22, 2015. The fact that she was busy serving
13 students, while admirable, was not an impediment to submitting a retirement
14 application. On these facts, ASRS appropriately exercised its discretion not to permit
15 Appellant to retroactively retire effective May 23, 2015.

16 **RECOMMENDED ORDER**

17 Appellant's appeal in this matter is dismissed, and the prior determination by the
18 ASRS Director that Appellant's retirement date is September 16, 2015, is upheld and
19 affirmed.

20 *In the event of certification of the Administrative Law Judge Decision by the*
21 *Director of the Office of Administrative Hearings, the effective date of the Order will be*
22 *five days from the date of that certification.*

23 Done this day, January 21, 2016.

24
25 /s/ Suzanne Marwil
26 Administrative Law Judge

27
28 Transmitted electronically to:
29 Paul Matson, Director
30

Arizona State Retirement System

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ASRS Memo to the Board



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MEMORANDUM

TO: Mr. Kevin McCarthy, Chair, Arizona State Retirement System ("ASRS") Board

FROM: Mr. Paul Matson, Director
Ms. Jothi Beljan, Assistant Attorney General

DATE: February 12, 2016

RE: **Agenda Item #3:** Approval, Modification, or Rejection of Administrative Law Judge's Decision Regarding Cathy Davis' Appeal for a Retroactive Retirement Date

Purpose

To approve, modify or reject the Administrative Law Judge's ruling to uphold the Director's determination that Cathy Davis' retirement date is September 16, 2015.

Applicable Law

Arizona Revised Statute § 38-757(A) requires a member to complete an application to initiate retirement. The statute specifically states, "After application on a form prescribed by the director, a member may retire on reaching the member's normal retirement date."

Arizona Revised Statute § 38-764(A) states that a member's retirement "is deemed to commence on a date elected by the member" and "that date shall not be earlier than the day following the date of termination of employment, the date ASRS receives the member's completed retirement application or the date specified by the member."

Facts of the Case

Cathy Davis submitted a completed retirement application to the ASRS on September 16, 2015. Therefore, the ASRS processed Ms. Davis' retirement date as September 16, 2015 and began paying retirement benefits to her effective that date.

In her Recommended Decision dated January 21, 2016, Administrative Law Judge Suzanne Marwil upheld the ASRS Director's determination and denied Ms. Davis' appeal requesting a retirement date of May 23, 2015.

ASRS Recommended Motion

The ASRS Board accepts the Administrative Law Judge's Decision.

Agenda Item #4

Note: Materials are currently not available for this item and will be provided when they become available.

Agenda Item #5



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MEMORANDUM

TO: Mr. Kevin McCarthy, Chair, Arizona State Retirement System (ASRS) Board
FROM: Mr. Paul Matson, Director
DATE: February 16, 2016
RE: **Agenda Item #5:** Presentation Regarding the PRIDE Excellence Award

The ASRS employee recognition program recognizes employees who exemplify various PRIDE characteristics (Professionalism, Results, Improvement, Diversity, Excellence) throughout the year. The fifth and final award for calendar year 2015 is the PRIDE Excellence award.

The nominees were nominated by their peers because they exemplify the following PRIDE qualities of excellence:

We celebrate individuals, teams or divisions who exceed expectations and deliver service with a PRIDE that permeates the organization:

- | | |
|---|---|
| <input type="checkbox"/> Surpass member, stakeholder and associate expectations | the accomplishments and contributions of others |
| <input type="checkbox"/> Embrace positive changes in a manner which inspires others | <input type="checkbox"/> Take a personal interest in promoting teamwork through effective use of communication methods within the ASRS to ensure the effective flow of information and knowledge (This includes verbal, non-verbal, written and technological communication techniques) |
| <input type="checkbox"/> Demonstrate a willingness to go the extra mile to engender a positive public image that solidifies the perception the ASRS is a trusted brand that members, stakeholders and associates will recognize | <input type="checkbox"/> Accept personal responsibility and challenges with enthusiasm |
| <input type="checkbox"/> Create a motivated, healthy and productive work environment that celebrates and rewards | |

The nominees for the 2015 PRIDE Excellence Award are:

- Beth Roth
- Jean Langston
- Michelle Roshto and Robert Virgil
- Hong Mayhew
- Erin Higbee
- Debbie Motta, John Maczko, Lynne Latino, Kristin Berry, Tonia Nemecek, Russ Levine, Bruce Pampel, and Joanne Coppock-Scott (AFIS conversion team)

Chosen from the nominees as winner of the 2015 ASRS PRIDE Excellence award is Beth Roth. We invite the Board to join ASRS staff in recognizing Beth as the award recipient of the 2015 ASRS PRIDE Excellence award.

Nominees for the PRIDE Excellence Award

The Excellence Award is the fifth and final 2015 bimonthly award. The following employees and teams were nominated by staff who feel they exemplify the Excellence qualities listed below:

EXCELLENCE

We celebrate individuals, teams and divisions who exceed expectations and deliver service with a PRIDE that permeates the organization:

- | | |
|---|---|
| <input type="checkbox"/> Surpass member, stakeholder and associate expectations | accomplishments and contributions of others |
| <input type="checkbox"/> Embrace positive changes in a manner which inspires others | <input type="checkbox"/> Take a personal interest in promoting teamwork through effective use of communication methods within the ASRS to ensure the effective flow of information and knowledge (This includes verbal, non-verbal, written and technological communication techniques) |
| <input type="checkbox"/> Demonstrate a willingness to go the extra mile to engender a positive public image that solidifies the perception the ASRS is a trusted brand that members, stakeholders and associates will recognize | <input type="checkbox"/> Accept personal responsibility and challenges with enthusiasm |
| <input type="checkbox"/> Create a motivated, healthy and productive work environment that celebrates and rewards the | |
-

Beth Roth

Beth Roth is the heart and soul of the Appointments and Counseling team. On a daily basis she greets all members with a smile and exudes kindness and professionalism. Beth is the perfect example what the ASRS stands for and needs to bolster the ASRS' brand. She creates fun and engaging team functions and is always looking for new ways to bolster teamwork and morale in the office. Beth will be the first to go the extra mile for a co-worker or a member.

Jean Langston

Jean embodies all of the actions that symbolize the PRIDE values, especially EXCELLENCE!

Although she works part-time, she always exceeds expectations.

She is able to achieve an extraordinary amount of work (that touches all areas of ASRS) with the highest level of quality, and an amazing level of speed and accuracy. She has:

- Developed several videos for TSD, and customized a course based on their needs
- Created over 5 new courses for the agency
- Created new IT Security / Privacy Training
- Developed online course for MAC
- Integrated new technology and updated several existing courses
- Delivered over 40 training sessions

PROMOTE TEAMWORK and COLLABORATION

- In all of the above examples, Jean collaborated with SMEs, listening and valuing their thoughts and ideas to meet or exceed their expectations.
- A assisted HR in identifying core competencies for for positions in IMD, ASD, TSD, and MSD.
- Partnered with TSD to develop a course for SCRUM product owners

- Values the skills and insights of others and partners with them to achieve more: for example using Ben's video skills for training courses, incorporating SMT advice into an upcoming course, etc.

AND Still finds time to be active part of the ASRS team in non-work areas :

- Volunteered for the Winter Festival Decoration Committee,
- Designed posters for State employee appreciation day
- Helped assemble the 10th floor basket for the ASRS Picnic.

CELEBRATE AND REWARD ACCOMPLISHMENTS

Jean is quick to give credit to all who have participated in a project/ course/event.

- Sends emails with results and accolades for achievement.
- Thanks and recognizes the SME's and their valuable contributions
- Provides Pride certificates to those who have helped (again promoting teamwork!)
- Always acknowledges team members accomplishments

ENGENDERS A POSITIVE IMAGE

- Always has a genuine smile for everyone
- Finds a positive aspect in every situation and helps to promote those thoughts
- Is professional and friendly in all communication

EMBRACES CHANGE / INSPIRES OTHERS

- Whenever a new idea is considered, Jean is the first one to try it out and look for a way to MAKE IT WORK!
- She constantly modifies training programs, incorporating new technology, helping others in our team to do so also.
- Always listens to suggestions from others and is willing to make adjustments quickly and positively
- Researches new techniques on her own
- Actively seeks feedback to make changes
- Provides solid feedback in an actionable positive manner, helping the receiver to improve.

ACCEPT RESPONSIBILITY / CHALLENGES WITH ENTHUSIASM

- Always completes projects on time or before
- Anticipates issues and plans solutions in advance
- Volunteers for any new projects and manages her time to meet commitments
- Assists team members whenever possible.

Because of her commitment to EXCELLENCE Jean's positive impact on the training team and ASRS is immeasurable

Michelle Roshto and Robert Virgil

They are being nominated for the Excellence award for the determination and dedication to make sure the internal wiki was online for business. They both worked until 2 a.m. to make sure that IQ was up the next morning after some files were corrupted during an upgrade to the software. This happened on 12/21/15. Due to their diligence, operation continued the following day. They are a great team and showed that they are dedicated to the agency. It's dedication like this that makes them a joy to work with

Hong Mayhew

Hong was promoted into the investment accountant position just a few months ago. She had just begun her tenure when her supervisor left the agency. Accounting for investments is no easy task when you have someone to "show you the ropes," it is even more difficult when you have to be self-taught. With no one to guide her, Hong enthusiastically began a journey of "independent study" related to accounting for both public and private investments. She has meticulously gone through SOPs, past work papers and a plethora of journal entries. She is not afraid to ask appropriate questions of our custodial bank, general accounting staff, investment staff and other peer pension plans. Hong does not stop asking questions until she is confident that she understands the answer. While I am sure this process has been stressful for Hong, she consistently maintains an unflappable, professional manner. Hong exemplifies accepting personal responsibility and challenges with enthusiasm.

Erin Higbee

In the absence of the General Accounting Controller, Erin Higbee, the ASRS Assistant Controller, took the initiative to continue to promote GA teamwork by organizing teambuilding activities, leading staff meetings, and encouraging folks to embrace change, which is occurring in abundance in General Accounting at the moment. Working with staff she has created a rather large list of projects for General Accounting to tackle in calendar year 2016. She continues to step up to the plate and ask where she may be of help in reducing the AD's workload. Erin embraces change with a smile and is always looking for ways to improve processes. In fact, this year she completed the GASB 68 Reports six months ahead of when they were completed last year! Erin exemplifies embracing change, demonstrating a willingness to go the extra mile, taking a personal interest in promoting teamwork and accepting personal responsibility and challenges with enthusiasm.

Debbie Motta, John Maczko, Lynne Latino, Kristin Berry, Tonia Nemecek, Russ Levine, Bruce Pampel, Joanne Coppock-Scott

I am nominating the AFIS conversion team for the PRIDE Excellence award based on their commitment to be ready for the state accounting system transition, which went live 7/1/15, and their determination to work through each challenge that has presented itself since implementation, all the while staying current with their day to day job duties. This team has demonstrated great flexibility when it comes to facing challenges which required the team to change many of their normal processes, and add new processes, in order make the conversion process work. Further, this team continues to identify new challenges and identify/address opportunities for improvement. The team put in months of "prep work" in order to be ready to cut over to the new system by 7/1/2015. In addition, over 62 training classes had to be completed by the collective group before the new system went live, and additional training classes and meetings continue to be held.

Agenda Item #6



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MEMORANDUM

TO: Mr. Kevin McCarthy, Chair, Arizona State Retirement System (ASRS) Board

FROM: Mr. Paul Matson, Director
Mr. Patrick Klein, Assistant Director, External Affairs
Mr. Nick Ponder, Government Relations Officer

DATE: February 16, 2016

RE: **Agenda Item #6:** Presentation, Discussion and Appropriate Action Regarding the 2016 ASRS Legislative Initiatives and Legislative Update

Purpose

To discuss the ASRS 2016 legislative initiatives as well as discuss legislative proposals by other organizations or persons that affect the ASRS.

Recommendation

Information item only; no action required.

Background

The ASRS staff has been working with legislative council, legislative staff, and legislators to move ASRS 2016 legislative initiatives forward.

An updated hard copy of the ASRS Bill Tracker will be provided at the meeting. The link to the most up-to-date bill tracker can be found any time at <https://www.azasrs.gov/content/legislation>.

Agenda Item #7

Arizona State Retirement System

Board of Trustees

Investment Program Updates

February 26, 2016

Presented by:

Gary R. Dokes, Chief Investment Officer, ASRS

David Underwood, Assistant Chief Investment Officer, ASRS

Karl Polen, Head of Private Markets Investing, ASRS

Al Alaimo, Fixed Income Portfolio Manager, ASRS

Eric Glass, Portfolio Manager of Private Markets, ASRS

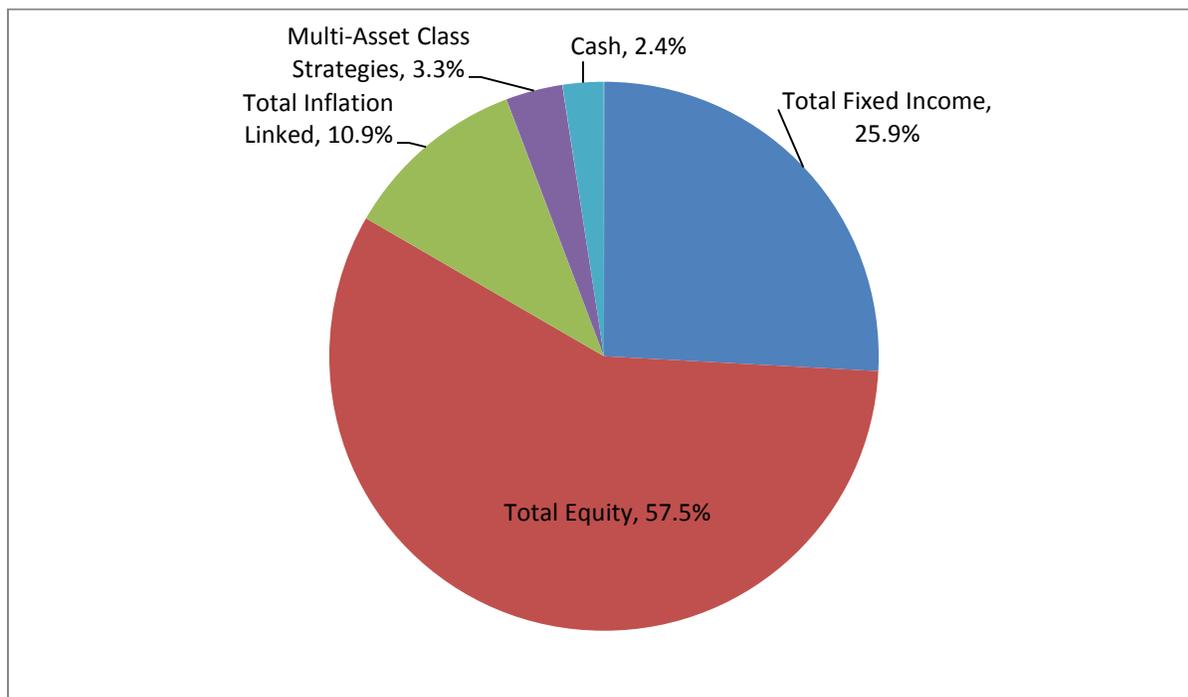


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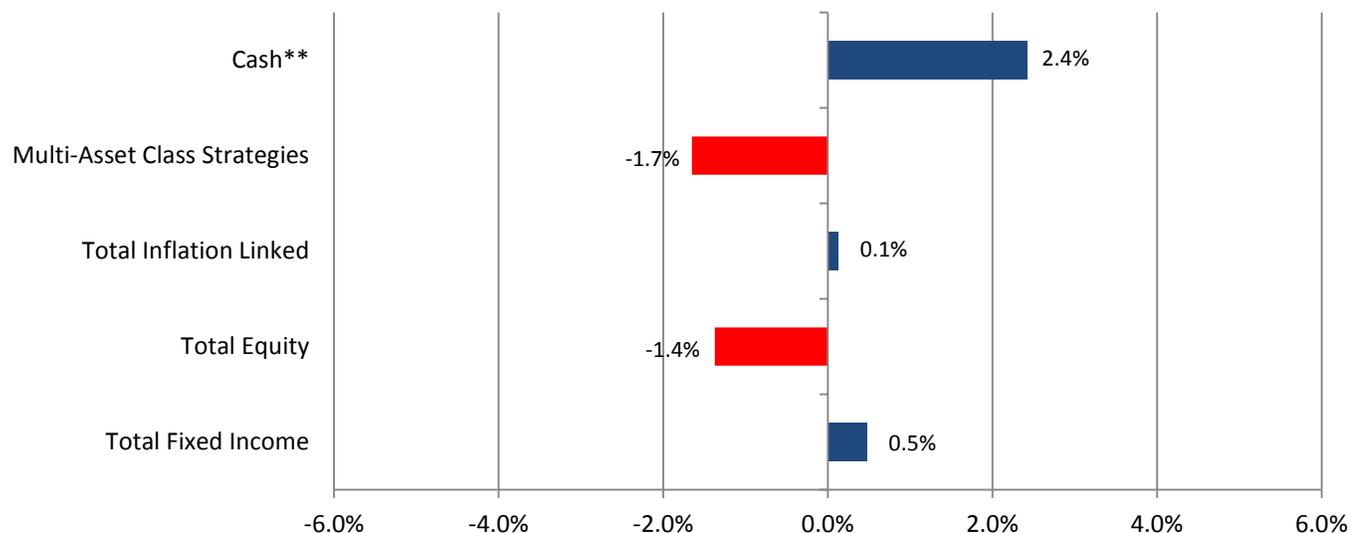
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TOTAL FUND POSITIONING 01/29/2016

ACTUAL PORTFOLIO



ACTUAL PORTFOLIO VS. INTERIM SAA POLICY *



*The Interim SAA Policy is prorated thusly: Real Estate was prorated to domestic equity, international equity and fixed income, Private Equity was prorated to domestic equity, and Private Debt was prorated to core fixed income and U.S. high yield. All Private asset classes' market values are reported on a quarter-lag and adjusted to include the current quarter's cash flows.

**Cash represents assetized cash which is exposed via futures to ASRS public markets asset class, and unassetized cash which represents monies needed to cover external and internal cash flows.

| Account Manager | Account Manager Style | Fixed Income | | Equity | | Inflation Linked | Multi-Asset | Total | Pct of Fund |
|-------------------------------|--|-----------------|-----------------|-----------------|------------------|------------------|-----------------|---|-------------------|
| | | Active | Enh/Passive | Active | Enh/Passive | | | | |
| State Street B&T: Boston | Tactical Cash (non-assetized) | | | | | | | 0 | 0.00% |
| | | | | | | | | Tactical Cash Policy Range: 0% - 3% | 0.00% |
| | Operating Cash (non-assetized) | | 24,925,611 | | | | | 24,925,611 | 0.08% |
| | Operating Cash (assetized) | | 763,896,313 | | | | | 763,896,313 | 2.35% |
| | Cash Total | | | | | | | \$788,943,835 | 2.43% |
| | | | | | | | | Cash Policy: 0% | 0.00% |
| Blackrock: San Francisco | Treasuries (Long Duration) | | 370,803,883 | | | | | 370,803,883 | 1.14% |
| | Treasuries (Long Duration) Total | | | | | | | \$370,803,883 | 1.14% |
| | | | | | | | | Treasuries (Long Duration) Policy Range: 0% - 10% | 0.00% |
| Blackrock: San Francisco | Passive (Intermediate Gov Credit) | | 24,633,086 | | | | | 24,633,086 | 0.08% |
| ASRS: Phoenix | Enhanced Passive F2 | | 1,896,819,051 | | | | | 1,896,819,051 | 5.84% |
| Blackrock: San Francisco | Passive (US Debt Index) | | 1,562,692,169 | | | | | 1,562,692,169 | 4.81% |
| | Core Fixed Income Total | | | | | | | \$3,484,144,305.70 | 10.72% |
| | Interest Rate Sensitive | | | | | | | \$3,854,948,188.44 | 11.86% |
| | | | | | | | | Interest Rate Sensitive: 11% | 11.00% |
| Columbia: Minneapolis | Active | 665,578,756 | | | | | | 665,578,756 | 2.05% |
| JP Morgan: Indianapolis | Active | 332,786,432 | | | | | | 332,786,432 | 1.02% |
| | High Yield Fixed Income Total | | | | | | | \$998,378,944 | 3.07% |
| | | | | | | | | High Yield Fixed Income Policy | 4.00% |
| | Opportunistic Debt | 1,162,882,158 | | | | | | \$1,162,882,158 | 3.58% |
| | | | | | | | | Opportunistic Debt Policy: | 0.00% |
| | Private Debt Total | 2,385,216,690 | | | | | | \$2,385,216,690 | 7.34% |
| | | | | | | | | Total Private Debt: 8% - 12% | 10.00% |
| | Fixed Income Total | | | | | | | \$8,401,425,980 | 25.86% |
| | | | | | | | | Total Fixed Income Policy Range: 18% - 35% | 25.00% |
| LSV: Chicago | Active (Value) | | | 653,680,803 | | | | 653,680,803 | 2.01% |
| ASRS: Phoenix | Passive E2 | | | | 4,641,248,286 | | | 4,641,248,286 | 14.28% |
| ASRS: Phoenix | Enhanced Passive E7 | | | | 572,289,835 | | | 572,289,835 | 1.76% |
| ASRS: Phoenix | Enhanced Passive E8 | | | | 553,996,789 | | | 553,996,789 | 1.71% |
| ASRS: Phoenix | Risk Factor Portfolio | | | | 531,767,287 | | | 531,767,287 | 1.64% |
| | Large Cap Equity Total | | | | | | | \$6,953,384,997 | 21.40% |
| | | | | | | | | Large Cap Policy | 20.00% |
| Wellington: Boston | Active (Core) | | | 248,849,357 | | | | 248,849,357 | 0.77% |
| ASRS: Phoenix | Passive E3 (Growth) | | | | 373,016,663 | | | 373,016,663 | 1.15% |
| ASRS: Phoenix | Passive E4 (Value) | | | | 328,341,986 | | | 328,341,986 | 1.01% |
| | Mid Cap Equity Total | | | | | | | \$950,208,006 | 2.92% |
| | | | | | | | | Mid Cap Policy | 3.00% |
| TimesSquare: New York | Active (Growth) | | | 321,873,081 | | | | 321,873,081 | 0.99% |
| DFA: Santa Monica | Active (Value) | | | 244,968,227 | | | | 244,968,227 | 0.75% |
| ASRS: Phoenix | Passive E6 | | | | 298,238,998 | | | 298,238,998 | 0.92% |
| | Small Cap Equity Total | | | | | | | \$865,080,306 | 2.66% |
| | | | | | | | | Small Cap Policy | 3.00% |
| | U.S. Equity Total | | | | | | | \$8,768,673,309 | 26.99% |
| | | | | | | | | US Equity Policy Range: 16% - 36% | 26.00% |
| Brandes: San Diego | Active (Value) | | | 530,251,498 | | | | 530,251,498 | 1.63% |
| American Century | Active (EAFE) | | | 520,570,380 | | | | 520,570,380 | 1.60% |
| Trinity Street | Active (EAFE) | | | 297,544,289 | | | | 297,544,289 | 0.92% |
| Thompson Siegel Walmsley | Active (EAFE) | | | 275,185,897 | | | | 275,185,897 | 0.85% |
| Blackrock: San Francisco | Passive (EAFE) | | | | 3,673,889,200 | | | 3,673,889,200 | 11.31% |
| | Large Cap Developed Non-US Equity Total | | | | | | | \$5,298,062,044 | 16.31% |
| | | | | | | | | Large Cap Developed Policy | 17.00% |
| AQR: Greenwich | Active (EAFE SC) | | | 91,012,536 | | | | 91,012,536 | 0.28% |
| DFA: Santa Monica | Active (EAFE SC) | | | 93,855,819 | | | | 93,855,819 | 0.29% |
| Franklin Templeton: San Mateo | Active (EAFE SC) | | | 199,467,160 | | | | 199,467,160 | 0.61% |
| Blackrock: San Francisco | Passive (EAFE SC) | | | | 232,370,864 | | | 232,370,864 | 0.72% |
| | Small Cap Developed Non-US Equity Total | | | | | | | \$616,708,765 | 1.90% |
| | | | | | | | | Small Cap Developed Policy | 2.00% |
| William Blair: Chicago | Active (EM) | | | 312,178,092 | | | | 312,178,092 | 0.96% |
| Eaton Vance: Boston | Active (EM) | | | 235,167,016 | | | | 235,167,016 | 0.72% |
| LSV: Chicago | Active (EM) | | | 97,700,764 | | | | 97,700,764 | 0.30% |
| Blackrock: San Francisco | Passive (EM) | | | | 272,157,571 | | | 272,157,571 | 0.84% |
| | Emerging Markets Equity Total | | | | | | | \$917,203,444 | 2.82% |
| | | | | | | | | Emerging Markets Policy | 5.00% |
| | Non-US Equity Total | | | | | | | \$6,831,974,253 | 21.03% |
| | | | | | | | | Non-US Equity Policy Range: 14% - 34% | 24.00% |
| | Private Equity Total | | | 2,590,087,280 | | | | \$2,590,087,280 | 7.97% |
| | | | | | | | | Private Equity Policy Range: 6% - 10% | 8.00% |
| | Opportunistic Equity | | | 492,400,373 | | | | \$492,400,373 | 1.52% |
| | | | | | | | | Opportunistic Equity Policy: | 0.00% |
| | Equity Total | | | | | | | \$18,683,135,216 | 57.50% |
| | | | | | | | | Total Equity Policy Range: 48% - 65% | 68.00% |
| Gresham: New York | Commodities Total | | | | | 201,172,941 | | 201,172,941 | 0.62% |
| | | | | | | | | \$201,172,941 | 0.62% |
| | | | | | | | | Commodities Policy Range: 0% - 4% | 2.00% |
| | Real Estate Total | | | | | 2,829,321,631 | | \$2,829,321,631 | 8.71% |
| | | | | | | | | Real Estate Policy Range: 8% - 12% | 10.00% |
| | Infrastructure Total | | | | | 316,552,365 | | \$316,552,365 | 0.97% |
| | | | | | | | | Infrastructure Policy Range: 0% - 3% | 0.00% |
| | Farmland & Timber Total | | | | | 182,760,272 | | \$182,760,272 | 0.56% |
| | | | | | | | | Farmland & Timber Policy Range: 0% - 3% | 0.00% |
| | Inflation Linked Total | | | | | | | \$3,529,807,209 | 10.86% |
| | | | | | | | | Inflation Linked Policy Range: 10% - 16% | 12.00% |
| Bridgewater | Multi-Asset Class Strategies | | | | | | 1,087,458,825 | 1,087,458,825 | 3.35% |
| | | | | | | | | \$1,087,458,825 | 3.35% |
| | | | | | | | | Multi-Asset Class Policy Range: 0% - 12% | 5.00% |
| | TOTAL Amounts | \$4,546,477,792 | \$4,643,892,023 | \$7,205,679,660 | \$11,477,455,566 | \$3,529,807,209 | \$1,087,458,825 | \$32,490,771,064 | Total Fund |
| | TOTAL Percent | 13.99% | 14.29% | 22.18% | 35.33% | 10.86% | 3.35% | | |

| Asset Class | Actual Portfolio | SAAP Target (Range) | Interim SAA* Adj Policy | Actual - Interim SAA** | | Policy Band check Actual - Adj Policy |
|---|------------------------|---------------------|-------------------------|------------------------|-----------------------|---------------------------------------|
| | | | | % diff | \$ diff | |
| Tactical Cash | 0.00% | 0% (0-3%) | 0.00% | 0.00% | | |
| Cash | 2.43% | 0.00% | 0.00% | 2.43% | 788,943,835 | |
| Interest Rate Sensitive | 11.86% | 11% | 13.34% | -1.47% | | |
| High Yield | 3.07% | 4% | 4.71% | -1.64% | | |
| Opportunistic Debt | 3.58% | 0% | 0.00% | 3.58% | \$1,162,882,158 | |
| Private Debt | 7.34% | 10% (8-12%) | 7.34% (5-9%) | 0.00% | | |
| Total Fixed Income | 25.86% | 25% (18-35%) | 25.39% (18-35%) | 0.47% | \$152,806,572 | OK |
| Large Cap | 21.40% | 20% | 20.53% | 0.87% | \$282,351,744 | |
| Mid Cap | 2.92% | 3% | 3.00% | -0.08% | -\$24,515,126 | |
| Small Cap | 2.66% | 3% | 3.00% | -0.34% | -\$109,642,826 | |
| US Equity | 26.99% | 26% (16-36%) | 26.53% (17-37%) | 0.46% | \$148,193,792 | OK |
| Developed Large Cap | 16.31% | 17% | 17.37% | -1.07% | -\$347,098,125 | |
| Developed Small Cap | 1.90% | 2% | 2.00% | -0.10% | -\$33,106,656 | |
| Emerging Markets | 2.82% | 5% | 5.00% | -2.18% | -\$707,335,110 | |
| Non-US Equity | 21.03% | 24% (14-34%) | 24.37% (14-34%) | -3.35% | -\$1,087,539,890 | OK |
| Private Equity | 7.97% | 8% (6-10%) | 7.97% | 0.00% | \$0 | OK |
| Opportunistic Equity | 1.52% | 0% | 0.00% | 1.52% | \$492,400,373 | |
| Total Equity | 57.50% | 58% (48-65%) | 58.88% (49-66%) | -1.38% | -\$446,945,725 | OK |
| Commodities | 0.62% | 2% (0-4%) | 2.03% | -1.41% | -\$457,037,590 | OK |
| Real Estate | 8.71% | 10% (8-12%) | 8.71% | 0.00% | \$0 | OK |
| Infrastructure | 0.97% | 0% (0-3%) | 0.00% | 0.97% | \$316,552,365 | OK |
| Farmland & Timber | 0.56% | 0% (0-3%) | 0.00% | 0.56% | \$182,760,272 | OK |
| Opportunistic IL | 0.00% | 0% | 0.00% | 0.00% | \$0 | |
| Total Inflation Linked | 10.86% | 12% (10-16%) | 10.73% (9-13%) | 0.13% | \$42,275,047 | OK |
| Multi-Asset Strategies*** | 3.35% | 5% (0-12%) | 5% (0-12%) | -1.65% | -\$537,079,729 | OK |
| Total | 100.00% | 100% | 100.00% | 0.00% | \$0 | |
| | | | | | | Internally Managed Portfolios: |
| | | | | | | \$8,663,951,608 |
| | | | | | | 27% |
| *Interim SAA includes a proration of unfunded Private Equity, Private Debt, and Real Estate | | | | | | |
| **Private Equity is prorated to domestic equity; Real Estate is prorated to equity, commodities, and fixed income; Private Debt is prorated to Interest Rate Sensitive and High Yield | | | | | | |
| Opportunistic definitions: | | | | | | |
| An investment in a category that is not included in the ASRS Asset Allocation policy and represents an investment opportunity that is tactical in nature. | | | | | | |
| Opportunistic investments have a 0% target (0%-10% range), regardless of asset class. | | | | | | |
| Total Opportunistic | | | | | | |
| Opportunistic Debt | \$1,162,882,158 | 3.6% | | | | |
| Opportunistic Equity | \$492,400,373 | 1.5% | | | | |
| Opportunistic IL | \$0 | 0.0% | | | | |
| | \$1,655,282,531 | 5.1% | | | | |

(Notable changes from the previous month are highlighted in RED)

FEBRUARY 2016

U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL**
 - Economic data still shows stable, sub-trend growth in 2015.
 - U.S. unemployment, is displaying sustained improvement. Income growth has not, although some localized instances of upward pressure has begun to surface.
 - Inflation remains generally subdued; **disinflation may surface as the greater risk.**
 - **Liquidity remains generally available; Federal Reserve policy is accommodative even without the asset purchases program.**
 - Overall U.S. corporate profits growth has decelerated, mostly due to the impact of lower energy prices; revenues are still in a modest uptrend; high profit margins are no longer expanding.

2. Valuations: **NEUTRAL**
 - **U.S. equity markets have been more volatile, with a downward bias since year-end 2015. The mixed macro data, downward revisions to corporate growth estimates, apprehension over the timing of upward resets to interest rates, more volatile foreign exchange markets and anxieties that negative spill-overs may emanate from the energy sector issues have weighed heavily on equities.**
 - Though marginally rich, price/earnings multiples remain near historic averages: S&P 500, **13.6x-15.4x**; S&P MID, **14.2x-16.2x**; S&P SC600, **14.3x-16.7x.**
 - Historic P/Es imply advances of **13-19%** for mid and small caps; **10-15%** for S&P 500.
 - Still rising earnings and low yields on 10-Yr Treasury notes combine for equity risk premiums that are favorably above the 4.0% long-range average for large caps, whereas those of mid- and small-caps are around 4.0%.

3. Sentiment: **NEUTRAL**
 - **Higher short-term caution as heightened and prolonged volatility has imparted a downside bias to what had formerly been an essentially trendless equity market late in 2015.**
 - **Investors appear to have a reduced demand for risk-oriented assets.**
 - **The strong U.S. Dollar no longer appears to be attracting asset flows from offshore into U.S. equities.**

Commentary:

The opinion on Fundamentals has changed to "NEUTRAL"; "NEUTRAL" opinions for Sentiment and Valuations are unchanged.

Staff moved the allocation to U.S. equities in the Total Fund toward a modest underweight versus the interim SAA policy targets at the end of November 2015. It will continue toward that goal as capital market conditions warrant and as needs and opportunities arise elsewhere in the Total Fund. This reflects an increasingly

cautious intermediate-term stance as capital market volatility continues to escalate; heightened market volatility with violent sell downs warrant lessened exposure to equities. This also reflects partly, a more clouded outlook over the intermediate term for U.S. equity returns, in general; more modest returns seem likeliest yet there are some offsets.

The equity markets have been undergoing “risk off” corrections, driven primarily by deteriorating market sentiment stemming mainly from mounting concerns that the U.S. economy is nearing recession. The secular rising U.S. equity market (i.e., “bull-market”) that has been in place since the 2008-2009 Global Financial Crisis is certainly maturing, yet it still appears premature to consider that trend as ending despite the current selloff. There simply isn’t the number of warning signs, nor the magnitudes, present as there were at this stage in the 2000 and 2007 (“bear”) market declines. To cite just a few: Federal Reserve January 2016 forecasting models estimate less than 4% probability of recession in the next 12 months, whereas they estimated greater than 40% probability of such in 2007; only 25% of U.S. manufacturing sectors are currently experiencing anything near to recession conditions; personal mortgage debt outstanding is less than 25% of total debt, versus 30%+ in 2007; wages and the number of jobs are rising but they plateaued, and then fell, in 2009.

Certainly, some conditions that are more associated with late-stage market/business cycles – flattening of both profit margin expansion and revenue growth, primarily – have surfaced and do present some head winds to the secular trend for stocks. However, much of that impairment is due to a strong USD as well as collateral effects from the imbalances within the energy sector. USD strength is a function of a reasonably solid economy and valid monetary policy. As the latter shifts slowly toward neutrality, it remains lenient and quite unlike pre-recession restrictive policy; cessation of QE purchases is not tightening monetary policy. More irrational is that nearly all financial markets, but those of equities in particular, are currently being driven in large part by fluctuating market sentiment based on the direction of oil prices, which are now down more than 50% over the past 18 months. The financial stress on companies sensitive to weak energy prices is still at an early stage; however it appears that it will have negative impacts on lenders as well as operators and suppliers. Even so, it is unlikely that duress will affect a wider swath of the economy, case market participants.

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

NON – U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL**

- Progress of Eurozone and Japanese economic conditions are plateauing; economic continues are weakening in many lesser-developed economies.
- Although relatively inexpensive, liquidity is shifting away from these developing, U.S. Dollar-sensitive economies.
- Monetary and economic policies that are focused on promoting economic growth and stemming disinflation seem to be blunted by the collateral impact of the change in drivers of the Chinese economy.

2. Valuations: **POSITIVE**

- Reasonable global valuations relative to the U.S.; price-to-book values of **1.3x - 1.4x**; P/Es of **9.5x – 13.0x** on trend earnings.
- Dividend yields are incrementally more favorable -ranging from **1.2x to 1.6x** that of the S&P500.

3. Sentiment: **NEUTRAL**

- Excepting the Emerging Markets, and short-term volatility, money flows continue toward developed non-U.S. market counterparts.
- The anxiety and accompanying volatility since late 2015 has undermined investors previously overall constructive attitude toward global equities.
- Until recently, major non-U.S. markets performance had mostly strengthened; a slower or postponed normalization of U.S. monetary policy is supportive for the markets.

Commentary:

The “POSITIVE” opinion on Valuations is unchanged, as are the “NEUTRAL” opinions on Fundamentals and Sentiment. This is reflected in the underweight exposure of the EAFE and equal-weight exposure of EAFE-Small Capitalization equities subclasses to their respective “interim” SAA policy weights. The overall non-U.S. equities asset class is however, underweight to its “interim” SAA policy weight by about 3.3% from the effect of below-SAA policy weight allocation to the Emerging Markets equities asset subclass. It is currently about 59% of policy weight as result of IMD electing to reduce exposure to risk-oriented assets in 2015.

Developed economies (DM) equities still present reasonably favorable return vs. risks tradeoffs and are likely to play a greater role in the worldwide quest for return/yield. Reflation efforts are ongoing, so liquidity flow-driven major markets are still capable of posting high, single digit advances (in USD terms). Liquidity fostered by stimulative monetary policy has historically dominated other market influences. It is abundant currently.

The current global macro backdrop supporting the current cycle differs from previous cycles in which the Federal Reserve increased short-term interest rates. Most other central banks are instead loosening monetary policies; the ECB is disposed toward even more Quantitative Easing. Economic growth, though sluggish overall, is mixed across most of the developed economies.

Historically, central banks’ initial interest rate increases have had negligible impact on DM equities markets. Not presently in the picture, lengthy rate increase/tightening programs have proved otherwise, however. The economic cycle in the Euro area is a phase behind that of the U.S.; labor cost pressures are less there. European Central Bank easing against the opposite in the U.S., coupled with a weaker EURO versus the U.S. Dollar, makes for relatively attractive risk premiums for European shares, and those of most non-U.S. developed markets. For reasons set forth above, risk premiums among the EM equity markets are justifiably high. Even so, sustained, widespread appreciation is therefore, less likely until those fundamentals improve.

The Emerging Economies (EM), on the whole, are still contending with persistently weak demand, resultant over-capacity, high debt and follow-on disinflation. In past periods preceding the advent of FOMC rate increases, global economic growth was accelerating. It is not in the present cycle, suggesting a protracted period until those economic hindrances dissipate. However, the EM equity markets and companies that are less exposed those trends offer a somewhat more optimistic picture. They will still be vulnerable to volatility from occasional short run “risk-off” market events, but are capable of increasing value over the balance of the current cycle.

The global equity markets have been volatile in early 2016. Forces that prevailed last year haven’t dissipated: weak energy and commodities prices, turmoil in the Chinese economy and capital markets, and the effects of rising U.S. interest rates. Prospects of sluggish global economic growth in 2016 have only intensified investor apprehensions.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

Primary Markets Metrics & Indicators:

1. Fundamentals: **NEGATIVE**

- Concerns about slowing global growth driven by weakening fundamentals in China and emerging markets have spilled over into the U.S. markets in a variety of ways. Credit spreads have materially widened in both the investment grade and high yield bond markets. While initially led by commodity sectors such as energy and mining, the spread widening has repriced a number of other sectors in these markets. **Spreads have also widened as a result of diminished trading liquidity stemming from regulatory changes.** In addition, China is exerting significant deflationary pressure in the global markets while other developed economies are struggling with disinflation. In the U.S., the economy has improved enough that the Federal Reserve **has raised short-term rates for the first time in several years.** However, the pace of future rate hikes is quite uncertain as some aspects of the U.S. economy such as manufacturing have recently softened and weakness in the broader financial markets remains an area of concern.
- We believe that long-term U.S. interest rates may remain relatively low by historical standards for a number of reasons. These include slowing growth and disinflationary (or deflationary) pressures in many regions of the world including Europe and China, accommodative monetary policies in other countries and very low competing long-term interest rates in other developed markets.

2. Valuations: **ATTRACTIVE**

- Valuations as measured by credit spreads in both the investment-grade and high yield bond markets have become more attractive; however, the wider spreads may primarily reflect deteriorating credit quality. Over the coming years, we expect both an increase in the number of bond issuers that are likely to lose their investment-grade ratings and a rise in corporate defaults. Initially, this deterioration in credit quality will be led by sectors that have been adversely affected by the severe decline in global commodity prices including energy, energy services, metals and mining. However, as we may be in the later stages of credit cycle (that began with an upturn in 2009), credit ratings may decline and defaults may increase in other sectors as well. **We believe this may lead to further spread widening.** With this view, we are underweight High Yield vs. the SAA target.
- Private debt offers the most attractive opportunity in the fixed income markets with double-digit yields readily available for investors willing to accept illiquidity. We believe the market opportunity has recently improved due to a number of factors including the piecemeal sale of GE Capital, a leading provider of capital to the middle market; a reduced capacity to lend by business development companies; the enforcement of leveraged lending guidelines by banking regulators which further restricts the ability of banks to provide leveraged loans and underwrite high yield bonds; **and a materially less receptive new issuance market for high yield bonds and tradable leveraged loans.** In 2015, we expanded our commitments to take advantage of the attractive opportunities in the private debt asset class.
- The core fixed income market is likely to generate low returns due to low overall yields as Treasury rates remain at low levels. That being said, core fixed income remains a safe haven in times of market turbulence and tends to perform well when risky assets such as equities sell off. We are underweight Interest Rate Sensitive fixed income vs. the SAA target.
- Select areas of opportunistic debt such as distressed debt also offer opportunities to potentially achieve double-digit returns. That being said, in the near-term, returns for distressed debt **have been** adversely impacted by the recent sell-off in the credit markets.

3. Sentiment: **NEGATIVE**

Sentiment has declined in the credit markets due to a combination of weakening fundamentals and diminished trading liquidity. While U.S. Treasuries remain a safe haven for investors looking to reduce risk, these securities may face technical selling pressure from central banks in China and other emerging market countries that may sell U.S. dollar assets to support their currencies to counteract recent U.S. dollar appreciation.

Commentary:

IMD views of the fixed income markets are bifurcated: positive on the return opportunities in the private markets (i.e. Private Debt) and less sanguine on the public markets (i.e. Interest Rate Sensitive fixed income and High Yield bonds).

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

REAL ESTATE

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**

- Property markets are generally moving out of a recovery phase to a mature phase. Excess inventory from the last cycle is largely absorbed and greater discipline in new supply delivery places property markets generally in reasonable supply/demand balance. The only property types that we consider to still be in a recovery phase are for-sale residential, suburban office and certain niche industrial property types.
- Local conditions vary greatly with tight supply and rapidly accelerating rents in certain markets and a more normal recovery in other markets.
- Our review of property market fundamentals leads us to emphasize apartments, industrial properties, medical office buildings, senior housing, self-storage, and student housing in our current investing efforts for demographic and macro policy reasons. We have entered in to separate account partnerships to pursue these opportunities.
- The resolution of pre-global financial crisis CMBS structures continues to work its way through the system presenting opportunities in mezzanine and senior equity. We have retained managers well-positioned to pursue such opportunities.

2. Valuations: **NEUTRAL**

- Values have recovered from the global financial crisis with stable properties in coastal markets priced at record values.
- Increases in CMBS spreads are beginning to make financing less accommodating and this may trickle through to values.
- Recent increases in treasury rates do not appear to have affected commercial real estate valuations. Many observers believe that ~100bps of rate increase was already discounted into cap rates.
- In January, REITs were trading at an average dividend yield of 4.07% (215bp above 10y treasury) and a 8% discount to NAV. The dividend yield spread is above the historical average of 127 while the historical difference to NAV is a 4% premium.

3. Sentiment: **NEUTRAL**

- About 80% of real estate executives believe we will see a recessionary cycle in property some time in the next several years.
- Nevertheless, fund raising has been robust. The pace of U.S. focused real estate fund raising is around \$100 billion per year with dry powder of around \$200 billion. Additionally, there is evidence of high interest in U.S. property from foreign investors.
- Consequently, there remains strong demand for good quality property and we have yet to see any softness in pricing as a result of recessionary or other concerns.

Commentary:

ASRS has become more cautious in property underwriting and requires its managers to consider a moderate recession in the next few years in property level underwriting. We continue to focus on niche property types and markets which receive less institutional focus. In new transactions, we will generally avoid construction risk except in the strongest locations with supply constraints and robust tenant demand. The 2016 implementation plan calls for about \$300 million in new commitments to complete the separate account and net zero new investments in commingled product.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target (in program funding/build-out phase)

PRIVATE EQUITY

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**

- The U.S. economy **has moderated and inflation remains muted but the unemployment rate continues to fall. The relative strength of the U.S. economy has resulted in a strengthening dollar.**
 - ◇ Oil prices have settled in the \$30 price range which has resulted in reduced service costs and tempered production growth in the medium term. Debt markets have locked up and equity transactions will take time to sort out. We expect industry consolidation at the margin favoring low cost producers with less leverage and more production hedged.
 - ◇ Healthcare is being reshaped to implement the requirements of “Obamacare.”
 - ◇ The U.S. continues to be a global leader in technology innovation.
- Europe continues to struggle in recovering from the financial crisis with the ECB **maintaining** its stimulus efforts by buying €60B per month. Its problems are exacerbated by a unified currency without unified fiscal policy and it is expected to experience a very slow recovery.
- Emerging markets have slowed while the largest emerging markets are transitioning to focus on domestic consumption.

2. Valuations: **NEUTRAL**

- Current U.S. median purchase price multiples are **8.5x**, down from 8.9x a year ago.
- The leveraged loan and high yield debt markets **tightened up in 2015**. Single B high yield spreads have widened to **~826bps**.
- The U.S. median Debt/EBITDA ratio of **6.2x** is up a bit from 5.8x in 2014.

3. Sentiment: **NEUTRAL**

- Globally, **\$551B (1,062 funds)** closed in 2015 compared to \$589B (1,394 funds) in 2014.

- Dry powder of nearly \$1.3T globally has ticked up from \$1.2T for 2014.
- The global number of buyout deals was 3,556 in 2015 compared to 3,796 for all of 2014. The aggregate value of deals was \$411B in 2015 compared to \$348B for all of 2014.
- There were 1,620 exits representing \$405B in 2015. There were 1,734 exits representing \$460B in 2014.
- The IPO market in 2015 has softened to a level of \$30B in 2015 versus \$67B in 2014.

Commentary:

Areas of emphasis are U.S. middle market buyout with focus on managers with strong operational capability. Vertical strategies in healthcare and technology are under consideration. IMD will reduce emphasis on large buyout strategies though larger managers with specialized deal flow remain of interest and continue to monitor Europe for a favorable reentry point and look for opportunities to capitalize upon distress.

ASRS 2016 private equity pacing plan calls for \$700 million in new commitments to achieve the 8% strategic allocation target.

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

COMMODITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEGATIVE**

- The U.S. dollar remains strong on a relative basis and the Fed raised interest rates in December as expected. China’s economy has slowed down while Europe has begun to deal with its economic weakness with stimulus.
- Most commodity sectors appear well supplied, particularly for the current global growth environment.
- The decision by Saudi Arabia not to reduce production with the addition of Iranian supply has kept energy markets depressed, resulting in rig lay downs in the U.S. while the budgetary impacts globally continue to add up.
- Corn and wheat stockpiles have recently hit multi-year highs while world food prices continue to slide. Energy markets reflect the continued growth in global production as WTI and Brent prices are both near \$30. Metals are mixed as precious metals have strengthened while industrial metals still exhibit weak demand.

2. Valuations: **NEGATIVE**

- The Bloomberg Commodities Index is just above its 15 year low as global supplies outpace demand.
- On a trailing twelve-month basis, commodities are down 25% with ags being the least impacted sector with a decline of 15%. Year-to-date gold and silver have risen by 12%.

3. Sentiment: **NEGATIVE**

- The moderate growth, weak inflation, and strong dollar environment in the U.S. has reduced investor enthusiasm for commodities and resulted in outflows from commodities.
- The slowdown in the Chinese economy and its equity market has tempered enthusiasm for commodities.

- Geopolitical news has not been constructive for energy prices. Looking across the individual commodities, most remain well supplied, which is reflected in prices as inflationary fears are muted.

Commentary:

IMD has maintained a tactical underweight relative to the SAA approved in 2015 which reduced the commodities target from 4% to 2%. The confluence of the Chinese slowdown, weakness in Europe, and sufficient broad-based global supplies have kept inflationary pressures soft. North American shale has **idled rigs in a material way but supplies have not fully equilibrated yet.**

IMD will maintain a tactical underweight relative to the SAAP and monitor global supply and demand swings for inflationary pressures. Improving economic conditions and inflationary pressures would serve as a catalyst to initiate a neutral position should the conditions arise.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

OPPORTUNISTIC INVESTMENTS

IMD continues to monitor and assess co-investment flow from real estate, private equity and debt managers for select opportunistic investments with favorable capital market dynamics. Opportunistic investments are tactical in nature AND are outside ASRS SAAP benchmarks or absolute return oriented.

CURRENT PORTFOLIO POSTURE: Approx. 4.8% of ASRS TOTAL MARKET VALUE

GLOSSARY

Commentary: Provides verbiage on 1) the current asset class market environment and possible changes to this environment and 2) ASRS asset class portfolio positioning relative to ASRS SAA policy, its rationale for positioning and anticipated changes which may occur in such positioning.

Current Portfolio Posture: Indicates ASRS asset class position relative to its asset allocation policy weight. “Overweight” indicates an asset class weight is greater than its policy target, “Neutral” indicates an equal weight and “Underweight” indicates a lesser weight than its policy target.

Investment House Views: Synthesizes IMD’s current and forward-looking investment perspectives and tactical positioning in asset classes and investment strategies in which the ASRS invests.

Primary Market Metrics and Indicators: Broadly-defined metrics (Fundamentals, Valuations, and Sentiments) applied universally to ASRS asset classes and used collectively to evaluate existing market conditions. Indicators (“Positive,” “Neutral” and “Negative”) reflect IMD’s existing views of these metrics and, in addition to other factors, generally determine the basis for the existing (and possible future changes) to ASRS aggregate portfolio position relative to or within ASRS SAA policy targets.

2015 ASSET CLASS COMMITTEE AND IC MEETINGS

| 2015 | | Asset Class Committees | | | | Board Committee | | Grand Totals | |
|-----------------|-----------|-----------------------------------|-------|---------------------------------|-------|---------------------------|----------|--------------|----|
| | | Private Market Committee (PRIVMC) | | Public Market Committee (PUBMC) | | Investment Committee (IC) | | | |
| Quarter | Month | Dates | | Total | Dates | Total | Dates | Total | |
| 1 st | January | 01/23 | 01/29 | 2 | | | | | |
| | February | 02/27 | | 1 | | | 02/09 | 02/23 | 2 |
| | March | 03/19 | 03/20 | 3 | | | | | |
| 03/27 | | | | | | | | | |
| 2 nd | April | 04/21 | | 1 | | | 04/20/15 | 1 | |
| | May | 05/18 | | 1 | | | | | |
| | June | 06/04 | 06/23 | 2 | | | 06/22 | 1 | |
| 3 rd | July | 07/20 | 07/29 | 2 | | | | | |
| | August | 08/28 | | 1 | 08/14 | 1 | 08/24 | 1 | |
| | September | 09/15 | | 1 | | | | | |
| 4 th | October | 10/15 | | 1 | | | 10/26 | 1 | |
| | November | 11/18 | 11/24 | 2 | | | 11/30 | 1 | |
| | December | 12/18 | | 1 | | | | | |
| Totals | | | | 18 | | 1 | | 7 | 26 |

2016 ASSET CLASS COMMITTEE AND IC MEETINGS

| 2016 | | Asset Class Committees | | | | Board Committee | | Grand Totals |
|-----------------|-----------|-----------------------------------|-------|---------------------------------|-------|---------------------------|-------|--------------|
| | | Private Market Committee (PRIVMC) | | Public Market Committee (PUBMC) | | Investment Committee (IC) | | |
| Quarter | Month | Dates | Total | Dates | Total | Dates | Total | |
| 1 st | January | 01/19 | 1 | | | | | 3 |
| | February | 02/25 | 1 | | | 02/22 | 1 | |
| | March | | | | | | | |
| 2 nd | April | | | | | | | |
| | May | | | | | | | |
| | June | | | | | | | |
| 3 rd | July | | | | | | | |
| | August | | | | | | | |
| | September | | | | | | | |
| 4 th | October | | | | | | | |
| | November | | | | | | | |
| | December | | | | | | | |
| Totals | | | 2 | | | | 1 | 3 |

INVESTMENT MANAGEMENT DIVISION (IMD) ACTIVITIES: FUND REPOSITIONING, RESEARCH, PROJECTS & INITIATIVES

- In Q4-15, approximately \$300 million was raised from U.S Equities to replenish ASRS Cash Assetization Program to meet external cash flow needs and anticipated capital calls for private markets commitments through the end of calendar year 2015.
- IMD annually prepares pacing and implementation plans for the private equity and real estate programs in order to establish target investment levels and strategies for the ensuing calendar year. The private equity pacing and implementation plan was completed and presented to the private markets committee on November 18 and a target commitment amount of \$700 million was approved for calendar 2016. The real estate implementation plan was presented in December, 2015. The plan calls for about \$300 million in new separate commitments to round out the separate account manager team and net zero in commitments to commingled product.
- As a standard course of business, IMD meets with both incumbent and potential investment managers to discuss macro-economies and capital markets as well as providing a means to review new initiatives, relationships and new strategy offerings. Since the last IC meeting, IMD met (conference call or in-person) with 138 investment managers: Private markets (RE, PE, Debt) – 62 and Public markets (Equity and Debt) – 76.
- IMD internally manages 7 public equities and fixed income portfolios with an approximate aggregate market value of \$9 billion or 27% of Total Fund. For CY 2015 thru December 31, 2015, 2 of 7 met or exceeded their benchmarks, and 7 of 7 portfolios met or exceeded their benchmarks on an inception-to-date basis.

Executive Presentation

To: Arizona State Retirement System

truView Risk Report December 31, 2015

Produced by State Street Investment Analytics, Risk Services

Monthly Reallocation Summary*

Month Ending December 31, 2015

Portfolio Reductions

- TOTAL EQUITY
 - \$2.7M – INTECH (Large Cap)
 - \$1M – E3 (Mid Cap)
- TOTAL FIXED INCOME
 - \$270M – BGI US DEBT FD (Core)
 - \$30M – BGI LONG TERM GOVT BOND (Core)
- TOTAL CASH
 - \$311.7M – CASH-ASSETIZED
- **TOTAL REDUCTIONS****
 - **\$615.4M**

Portfolio Additions

- TOTAL EQUITY
 - \$1M – E4 (Mid Cap)
- TOTAL CASH
 - \$614.4M – CASH-UNASSETIZED
- **TOTAL ADDITIONS****
 - **\$615.4M**

*Based on State Street accounting records for public markets and therefore exclude private market drawdowns.

**Reductions and additions do not include plan distributions.

Monthly Reallocation Summary*

Month Ending January 31, 2016

Portfolio Reductions

- TOTAL CASH
 - \$127.5M – CASH–ASSETIZED

- TOTAL REDUCTIONS**
 - \$127.5M

Portfolio Additions

- TOTAL CASH
 - \$127.5M – CASH–UNASSETIZED

- TOTAL ADDITIONS**
 - \$127.5M

*Based on State Street accounting records for public markets and therefore exclude private market drawdowns.

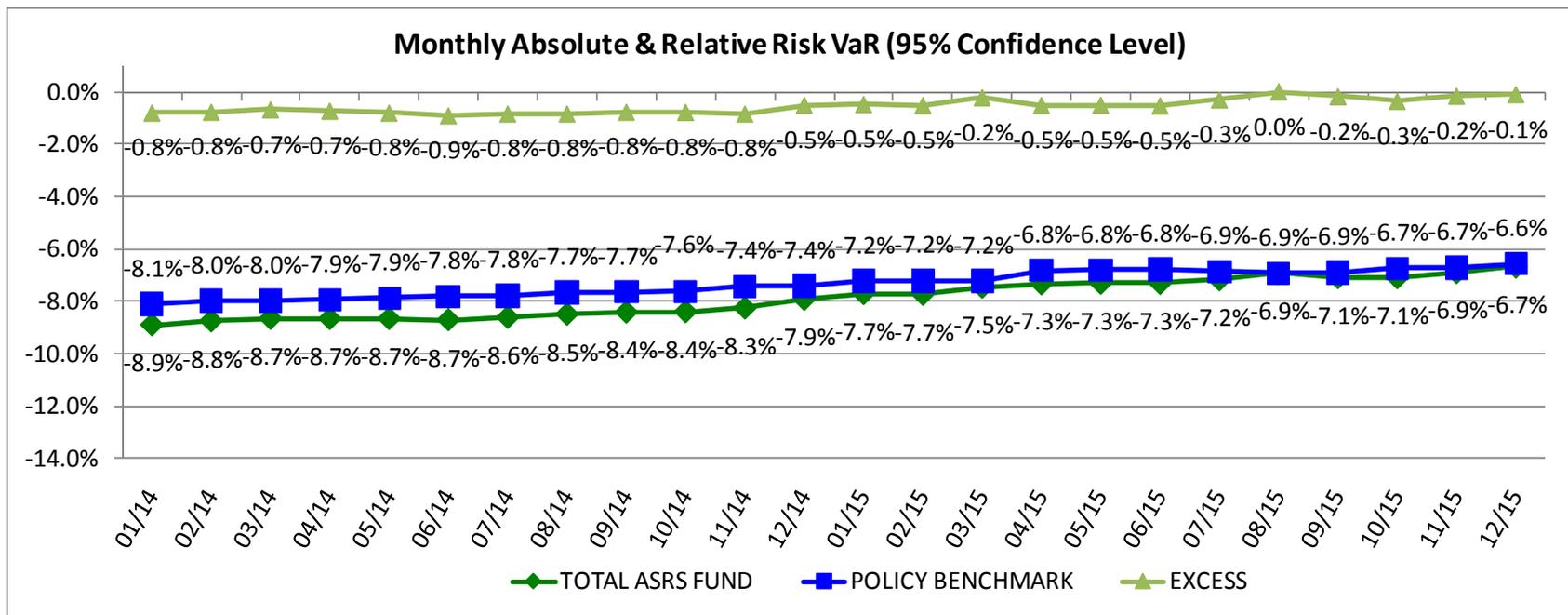
**Reductions and additions do not include plan distributions.

Monthly Risk Summary

Month Ending December 31, 2015

Month-end Risk Profile

- Historical Risk (95% VaR) for all asset classes remain relatively constant from prior months. The Multi-Asset Class strategy continues to be dynamically managed and is providing risk diversification for December. Total Plan risk decreased 22bps which was primarily driven by market fluctuations and underlying active manager positionings. The Policy Benchmark decreased a corresponding 15bps.
- Excess risk over the Policy Benchmark decreased to 10bps.



ARIZONA STATE RETIREMENT SYSTEM

As of December 31, 2015

TOTAL PLAN EXPOSURE OVERVIEW

| Sector (Public US Equity Only) | \$ Value | % Value | **Blended US BM | Difference |
|--------------------------------|-------------------------|---------------|-----------------|-------------|
| CONSUMER NON-CYCLICAL | \$ 2,146,265,439 | 23.3% | 24.5% | (1.2%) |
| FINANCIAL | \$ 1,584,376,305 | 17.2% | 17.7% | (0.5%) |
| TECHNOLOGY | \$ 1,045,946,209 | 11.3% | 13.1% | (1.8%) |
| CONSUMER CYCLICAL | \$ 910,451,811 | 9.9% | 10.4% | (0.5%) |
| INDUSTRIAL | \$ 904,070,985 | 9.8% | 9.4% | 0.4% |
| COMMUNICATIONS | \$ 858,832,480 | 9.3% | 13.0% | (3.7%) |
| FUNDS | \$ 546,544,671 | 5.9% | 0.0% | 5.9% |
| ENERGY | \$ 535,805,349 | 5.8% | 6.5% | (0.7%) |
| UTILITIES | \$ 322,486,185 | 3.5% | 3.0% | 0.5% |
| BASIC MATERIALS | \$ 231,326,975 | 2.5% | 2.4% | 0.1% |
| CASH | \$ 113,444,596 | 1.2% | 0.0% | 1.2% |
| GOVERNMENT | \$ 28,112,561 | 0.3% | 0.0% | 0.3% |
| DIVERSIFIED | \$ 1,546,110 | 0.0% | 0.0% | (0.0%) |
| INDEX | \$ 71,274 | 0.0% | 0.0% | 0.0% |
| GRAND TOTAL | \$ 9,229,280,950 | 100.0% | 100.0% | 0.0% |

| Country Category (Total Plan) | \$ Value | % Value | *Blended TOTAL BM | Difference |
|-------------------------------|--------------------------|---------------|-------------------|-------------|
| NORTH AMERICA | \$ 25,639,370,395 | 77.2% | 53.5% | 23.8% |
| EUROPE DEVELOPED | \$ 4,414,517,410 | 13.3% | 23.9% | (10.6%) |
| ASIA DEVELOPED | \$ 2,195,674,250 | 6.6% | 14.9% | (8.3%) |
| ASIA EM | \$ 567,187,461 | 1.7% | 4.9% | (3.2%) |
| LATIN AMERICA | \$ 173,686,884 | 0.5% | 1.5% | (0.9%) |
| MIDDLE EAST | \$ 86,951,921 | 0.3% | 0.5% | (0.2%) |
| AFRICA | \$ 86,043,614 | 0.3% | 0.6% | (0.4%) |
| EUROPE EM | \$ 33,124,969 | 0.1% | 0.2% | (0.1%) |
| GRAND TOTAL | \$ 33,196,556,905 | 100.0% | 100.0% | 0.0% |

| Market Cap^ (Public Equities Only) | \$ Value | % Value | *Blended TOTAL BM | Difference |
|------------------------------------|--------------------------|---------------|-------------------|-------------|
| 1) 0 - 100M | \$ 2,470,630 | 0.0% | 0.0% | (0.0%) |
| 2) 100M - 500M | \$ 238,162,698 | 1.5% | 2.2% | (0.8%) |
| 3) 500M - 1B | \$ 385,067,777 | 2.4% | 4.2% | (1.8%) |
| 4) 1B - 5B | \$ 2,542,423,218 | 15.5% | 26.8% | (11.3%) |
| 5) 5B - 10B | \$ 1,881,213,618 | 11.5% | 11.6% | (0.1%) |
| 6) 10B - 50B | \$ 5,346,379,013 | 32.6% | 32.4% | 0.2% |
| 7) >50B | \$ 5,989,692,867 | 36.6% | 22.7% | 13.8% |
| GRAND TOTAL | \$ 16,385,409,820 | 100.0% | 100.0% | 0.0% |

^Excludes cash and non-traded securities

| Top 20 Issuer (Total Plan) | \$ Value | % Value | Market Cap | Sector | Industry Group |
|-------------------------------------|------------------|---------|----------------|-----------------------|-------------------------|
| 1 CASH*** | \$ 2,600,279,306 | 7.8% | | CASH | Cash |
| 2 US TREASURY N/B | \$ 1,130,522,052 | 3.4% | | GOVERNMENT | SOVEREIGN |
| 3 FANNIE MAE | \$ 650,314,173 | 2.0% | | MORTGAGE SECURITIES | FNMA COLLATERAL |
| 4 FREDDIE MAC | \$ 243,286,732 | 0.7% | | MORTGAGE SECURITIES | FGLMC COLLATERAL |
| 5 TREASURY BILL | \$ 219,201,879 | 0.7% | | GOVERNMENT | SOVEREIGN |
| 6 APPLE INC | \$ 164,787,402 | 0.5% | 7) 50B+ | TECHNOLOGY | COMPUTERS |
| 7 MICROSOFT CORP | \$ 158,844,616 | 0.5% | 7) 50B+ | TECHNOLOGY | SOFTWARE |
| 8 ISHARES MSCI USA MOMENTUM FACTO | \$ 147,752,640 | 0.4% | 4) 1B - 5B | FUNDS | EQUITY FUND |
| 9 ISHARES MSCI USA QUALITY FACTOR I | \$ 140,988,595 | 0.4% | 4) 1B - 5B | FUNDS | EQUITY FUND |
| 10 JOHNSON & JOHNSON | \$ 137,468,414 | 0.4% | 7) 50B+ | CONSUMER NON-CYCLICAL | PHARMACEUTICALS |
| 11 EXXON MOBIL CORP | \$ 135,215,344 | 0.4% | 7) 50B+ | ENERGY | OIL&GAS |
| 12 ISHARES MSCI USA SIZE FACTOR ETF | \$ 131,362,876 | 0.4% | 2) 100M - 500M | FUNDS | EQUITY FUND |
| 13 GOVERNMENT NATIONAL MORTGAGE / | \$ 129,449,262 | 0.4% | | MORTGAGE SECURITIES | GNMA COLLATERAL |
| 14 ISHARES MSCI USA VALUE FACTOR ET | \$ 126,440,560 | 0.4% | 3) 500M - 1B | FUNDS | EQUITY FUND |
| 15 ALPHABET INC | \$ 124,218,113 | 0.4% | 7) 50B+ | COMMUNICATIONS | INTERNET |
| 16 AT&T INC | \$ 113,282,239 | 0.3% | 7) 50B+ | COMMUNICATIONS | TELECOMMUNICATIONS |
| 17 PFIZER INC | \$ 111,168,304 | 0.3% | 7) 50B+ | CONSUMER NON-CYCLICAL | PHARMACEUTICALS |
| 18 JPMORGAN CHASE & CO | \$ 110,624,894 | 0.3% | 7) 50B+ | FINANCIAL | BANKS |
| 19 NESTLE SA | \$ 94,502,483 | 0.3% | 7) 50B+ | CONSUMER NON-CYCLICAL | FOOD |
| 20 PROCTER & GAMBLE CO/THE | \$ 90,152,855 | 0.3% | 7) 50B+ | CONSUMER NON-CYCLICAL | COSMETICS/PERSONAL CARE |

*Blended TOTAL BM: 23% SP500, 3% SP400, 3% SP600, 7% R2000, 18% MSCI EAFE, 5% MSCI EM, 2% MSCI Sml Cap, 16% BC US AGG, 6% BC US HY, 6% FTSE NAREIT GLOBAL, 2% DJ-UBS COMMODITY, 5% CUSTOM MULTI-ASSET CLASS, 4% S&P/LSTA LEVERED LOAN.

**Blended US BM: 80% SP500, 10% SP400, 10% SP600.

***Cash does not represent an IMD tactical view; Cash includes the ASRS Cash balance, manager-level portfolio cash & equivalents and cash collateralizing sundry portfolio-level futures contracts.

ARIZONA STATE RETIREMENT SYSTEM

As of December 31, 2015

| Sector (Public Intl Equity Only) | \$ Value | % Value | *Blended NON-US BM | Difference |
|----------------------------------|-------------------------|---------------|-----------------------|-------------|
| FINANCIAL | \$ 1,818,160,622 | 24.6% | 25.6% | (1.0%) |
| CONSUMER NON-CYCLICAL | \$ 1,671,648,927 | 22.6% | 22.0% | 0.6% |
| CONSUMER CYCLICAL | \$ 1,072,162,501 | 14.5% | 12.4% | 2.1% |
| INDUSTRIAL | \$ 843,292,272 | 11.4% | 11.3% | 0.1% |
| COMMUNICATIONS | \$ 602,898,347 | 8.2% | 9.5% | (1.3%) |
| BASIC MATERIALS | \$ 347,522,278 | 4.7% | 5.5% | (0.8%) |
| ENERGY | \$ 324,766,253 | 4.4% | 4.9% | (0.5%) |
| TECHNOLOGY | \$ 316,647,939 | 4.3% | 5.0% | (0.7%) |
| UTILITIES | \$ 237,124,888 | 3.2% | 3.4% | (0.1%) |
| CASH | \$ 105,475,411 | 1.4% | 0.0% | 1.4% |
| DIVERSIFIED | \$ 35,307,360 | 0.5% | 0.6% | (0.1%) |
| INDEX | \$ 17,263,153 | 0.2% | 0.0% | 0.2% |
| FX | \$ (20,615) | (0.0%) | 0.0% | (0.0%) |
| GRAND TOTAL | \$ 7,392,249,336 | 100.0% | 100.0% | 0.0% |

| Top 20 Industry Groups (Public Intl Only) | \$ Value | % Value | *Blended NON-US BM | Difference |
|--|----------------|---------|-----------------------|------------|
| 1 BANKS | \$ 924,975,725 | 12.5% | 13.1% | (0.6%) |
| 2 PHARMACEUTICALS | \$ 604,351,991 | 8.2% | 7.8% | 0.3% |
| 3 INSURANCE | \$ 402,497,908 | 5.4% | 5.3% | 0.2% |
| 4 TELECOMMUNICATIONS | \$ 396,767,278 | 5.4% | 5.6% | (0.2%) |
| 5 FOOD | \$ 364,123,952 | 4.9% | 4.4% | 0.5% |
| 6 RETAIL | \$ 299,221,277 | 4.0% | 2.9% | 1.1% |
| 7 OIL&GAS | \$ 291,814,215 | 3.9% | 4.4% | (0.4%) |
| 8 AUTO MANUFACTURERS | \$ 259,700,223 | 3.5% | 3.6% | (0.1%) |
| 9 CHEMICALS | \$ 206,749,295 | 2.8% | 3.2% | (0.4%) |
| 10 DIVERSIFIED FINAN SERV | \$ 180,365,008 | 2.4% | 2.6% | (0.1%) |
| 11 COMMERCIAL SERVICES | \$ 174,130,382 | 2.4% | 2.0% | 0.4% |
| 12 REAL ESTATE | \$ 168,268,644 | 2.3% | 2.4% | (0.1%) |
| 13 BEVERAGES | \$ 162,873,154 | 2.2% | 2.3% | (0.1%) |
| 14 ELECTRIC | \$ 160,641,706 | 2.2% | 2.2% | (0.1%) |
| 15 SEMICONDUCTORS | \$ 151,864,803 | 2.1% | 2.4% | (0.4%) |
| 16 TRANSPORTATION | \$ 124,031,299 | 1.7% | 1.7% | (0.0%) |
| 17 AUTO PARTS&EQUIPMENT | \$ 119,953,006 | 1.6% | 1.4% | 0.2% |
| 18 COSMETICS/PERSONAL CARE | \$ 115,829,572 | 1.6% | 1.6% | (0.0%) |
| 19 BUILDING MATERIALS | \$ 110,954,728 | 1.5% | 1.2% | 0.3% |
| 20 Cash | \$ 105,475,411 | 1.4% | 0.0% | 1.4% |

*Blended NON-US BM: 72% MSCI EAFE, 20% MSCI EM, 8% MSCI Sml Cap.

INTERNATIONAL EQUITY EXPOSURE OVERVIEW

| Country Category (Public Intl Equity Only) | \$ Value | % Value | *Blended NON-US BM | Difference |
|--|-------------------------|---------------|-----------------------|-------------|
| EUROPE DEVELOPED | \$ 4,092,136,791 | 55.4% | 50.9% | 4.5% |
| ASIA DEVELOPED | \$ 2,190,389,859 | 29.6% | 32.3% | (2.7%) |
| ASIA EM | \$ 571,324,018 | 7.7% | 11.6% | (3.8%) |
| NORTH AMERICA | \$ 175,241,357 | 2.4% | 0.1% | 2.3% |
| LATIN AMERICA | \$ 173,605,376 | 2.3% | 2.3% | 0.0% |
| MIDDLE EAST | \$ 85,616,013 | 1.2% | 1.1% | 0.1% |
| AFRICA | \$ 71,290,663 | 1.0% | 1.3% | (0.4%) |
| EUROPE EM | \$ 32,645,260 | 0.4% | 0.4% | 0.0% |
| GRAND TOTAL | \$ 7,392,249,336 | 100.0% | 100.0% | 0.0% |

| Market Cap** (Public Intl Equities Only) | \$ Value | % Value | *Blended NON-US BM | Difference |
|--|-------------------------|---------------|-----------------------|-------------|
| 1) 0 - 100M | \$ 2,179,140 | 0.0% | 0.0% | 0.0% |
| 2) 100M - 500M | \$ 72,514,408 | 1.0% | 0.4% | 0.6% |
| 3) 500M - 1B | \$ 137,937,243 | 1.9% | 1.3% | 0.6% |
| 4) 1B - 5B | \$ 948,781,017 | 13.1% | 12.7% | 0.4% |
| 5) 5B - 10B | \$ 1,049,610,011 | 14.4% | 13.3% | 1.2% |
| 6) 10B - 50B | \$ 2,885,279,870 | 39.7% | 38.8% | 0.9% |
| 7) >50B | \$ 2,170,176,843 | 29.9% | 33.5% | (3.6%) |
| GRAND TOTAL | \$ 7,266,478,533 | 100.0% | 100.0% | 0.0% |

**Excludes cash and non-traded securities

ARIZONA STATE RETIREMENT SYSTEM

TOTAL FIXED INCOME EXPOSURE OVERVIEW

As of December 31, 2015

| Sector (Public Fixed Income Only) | \$ Value | % Value | *Blended FI BM | Difference |
|-----------------------------------|-------------------------|---------------|----------------|-------------|
| GOVERNMENT | \$ 1,433,033,070 | 32.1% | 32.0% | 0.2% |
| MORTGAGE SECURITIES | \$ 1,033,745,823 | 23.2% | 22.1% | 1.1% |
| FINANCIAL | \$ 386,623,690 | 8.7% | 9.5% | (0.9%) |
| COMMUNICATIONS | \$ 325,919,041 | 7.3% | 7.6% | (0.3%) |
| CONSUMER NON-CYCLICAL | \$ 313,732,875 | 7.0% | 7.4% | (0.4%) |
| CONSUMER CYCLICAL | \$ 212,821,341 | 4.8% | 5.2% | (0.5%) |
| ENERGY | \$ 199,093,955 | 4.5% | 5.0% | (0.6%) |
| INDUSTRIAL | \$ 132,697,426 | 3.0% | 3.9% | (0.9%) |
| TECHNOLOGY | \$ 102,569,110 | 2.3% | 2.1% | 0.2% |
| UTILITIES | \$ 85,662,173 | 1.9% | 2.2% | (0.3%) |
| CASH | \$ 75,821,407 | 1.7% | 0.0% | 1.7% |
| BASIC MATERIALS | \$ 74,298,918 | 1.7% | 2.4% | (0.7%) |
| INDEX | \$ 30,296,721 | 0.7% | 0.0% | 0.7% |
| BANK LOANS | \$ 25,357,237 | 0.6% | 0.0% | 0.6% |
| ASSET BACKED SECURITIES | \$ 23,767,498 | 0.5% | 0.4% | 0.1% |
| DIVERSIFIED | \$ 2,691,948 | 0.1% | 0.2% | (0.2%) |
| GRAND TOTAL | \$ 4,458,132,235 | 100.0% | 100.0% | 0.0% |

| Top 20 Industry Groups (Public Fixed Income Only) | \$ Value | % Value | *Blended FI BM | Difference |
|---|------------------|---------|----------------|------------|
| 1 SOVEREIGN | \$ 1,341,403,575 | 30.1% | 29.9% | 0.2% |
| 2 FNMA COLLATERAL | \$ 593,049,836 | 13.3% | 9.3% | 4.0% |
| 3 FGLMC COLLATERAL | \$ 213,495,523 | 4.8% | 5.7% | (0.9%) |
| 4 BANKS | \$ 202,119,206 | 4.5% | 5.2% | (0.7%) |
| 5 TELECOMMUNICATIONS | \$ 163,083,584 | 3.7% | 3.9% | (0.3%) |
| 6 MEDIA | \$ 134,275,400 | 3.0% | 3.2% | (0.2%) |
| 7 OIL&GAS | \$ 120,745,242 | 2.7% | 3.1% | (0.4%) |
| 8 DIVERSIFIED FINAN SERV | \$ 102,910,325 | 2.3% | 2.3% | (0.0%) |
| 9 GNMA2 COLLATERAL | \$ 101,265,326 | 2.3% | 4.8% | (2.5%) |
| 10 COMMERCIAL MBS | \$ 94,209,975 | 2.1% | 1.3% | 0.8% |
| 11 HEALTHCARE-SERVICES | \$ 89,296,013 | 2.0% | 1.9% | 0.1% |
| 12 ELECTRIC | \$ 83,224,769 | 1.9% | 2.0% | (0.2%) |
| 13 PHARMACEUTICALS | \$ 81,245,347 | 1.8% | 1.5% | 0.3% |
| 14 Cash | \$ 75,821,407 | 1.7% | 0.0% | 1.7% |
| 15 PIPELINES | \$ 74,963,278 | 1.7% | 1.4% | 0.3% |
| 16 RETAIL | \$ 72,609,712 | 1.6% | 1.8% | (0.1%) |
| 17 SOFTWARE | \$ 60,781,139 | 1.4% | 1.0% | 0.3% |
| 18 CHEMICALS | \$ 53,629,696 | 1.2% | 0.9% | 0.3% |
| 19 MUNICIPAL | \$ 48,214,655 | 1.1% | 0.6% | 0.4% |
| 20 REITS | \$ 44,200,121 | 1.0% | 1.0% | 0.0% |

| Credit Rating Group** (Public Fixed Income Only) | \$ Value | % Value | *Blended FI BM | Difference |
|--|-------------------------|---------------|----------------|-------------|
| 01) AAA | \$ 2,518,634,994 | 56.5% | 52.9% | 3.6% |
| 02) AA | \$ 180,216,838 | 4.0% | 3.3% | 0.8% |
| 03) A | \$ 336,516,579 | 7.5% | 7.1% | 0.4% |
| 04) BBB | \$ 496,820,171 | 11.1% | 10.5% | 0.7% |
| 05) BB | \$ 425,049,694 | 9.5% | 13.7% | (4.2%) |
| 06) B | \$ 403,867,581 | 9.1% | 9.5% | (0.4%) |
| 07) CCC | \$ 88,070,963 | 2.0% | 2.9% | (0.9%) |
| 08) CC | \$ 157,521 | 0.0% | 0.0% | (0.0%) |
| 09) C | \$ - | 0.0% | 0.0% | (0.0%) |
| 10) D | \$ 5,901,400 | 0.1% | 0.1% | 0.1% |
| 11) Not Rated | \$ 2,896,493 | 0.1% | 0.1% | 0.0% |
| GRAND TOTAL | \$ 4,458,132,235 | 100.0% | 100.0% | 0.0% |

| Maturity Bucket (Public Fixed Income Only) | \$ Value | % Value | *Blended FI BM | Difference |
|--|-------------------------|---------------|----------------|-------------|
| 0-1Y | \$ 150,357,795 | 3.4% | 0.5% | 2.9% |
| 1Y-3Y | \$ 683,235,187 | 15.4% | 19.2% | (3.8%) |
| 3Y-5Y | \$ 700,516,021 | 15.8% | 17.6% | (1.8%) |
| 5Y-10Y | \$ 1,432,619,233 | 32.3% | 29.5% | 2.8% |
| 10Y-15Y | \$ 168,311,331 | 3.8% | 4.7% | (0.9%) |
| 15Y+ | \$ 1,298,697,346 | 29.3% | 28.5% | 0.8% |
| GRAND TOTAL | \$ 4,433,736,913 | 100.0% | 100.0% | 0.0% |

*Blended TOTAL BM: 73% BC US AGG, 27% BC US HY.

ARIZONA STATE RETIREMENT SYSTEM
As of December 31, 2015

TOTAL PLAN RISK OVERVIEW

| Strategy | \$ Value | % Value | Historical VaR 95% | HVaR Contri 95% | HVaR Contri % to Total | Parametric VaR 95% | PVaR Contri 95% | PVaR Contri % to Total | Exp Tail Loss 95% | Exp Tail Loss Contri 95% | Exp Tail Loss Contri % to Total | Max Loss | Std Dev | Downside Risk (8%) | Downside Risk Contri (8%) | Downside Risk Contri (8%) to Total |
|---------------------------------|--------------------------|-------------|--------------------|-----------------|------------------------|--------------------|-----------------|------------------------|-------------------|--------------------------|---------------------------------|----------------|-------------|--------------------|---------------------------|------------------------------------|
| MONTHLY RISK | | | | | | | | | | | | | | | | |
| CASH - UNASSETIZED | \$ 57,133,295 | 0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | (0.6%) | (0.1%) | 0.0% |
| CASH - ASSETIZED | \$ 904,489,268 | 3% | (2.7%) | (2.8%) | 1.1% | (2.6%) | (2.4%) | 1.0% | (4.6%) | (4.3%) | 1.0% | (9.8%) | 1.7% | (1.6%) | (1.3%) | 1.0% |
| TOTAL FIXED INCOME | \$ 4,458,132,235 | 13% | (1.9%) | (0.1%) | 0.3% | (1.7%) | (0.2%) | 0.4% | (2.6%) | (0.0%) | 0.0% | (4.3%) | 1.1% | (1.2%) | (0.1%) | 0.6% |
| US EQUITY | \$ 9,229,280,950 | 28% | (8.2%) | (8.5%) | 35.3% | (8.1%) | (7.9%) | 33.0% | (14.3%) | (14.3%) | 34.6% | (29.6%) | 5.7% | (4.1%) | (4.1%) | 33.1% |
| INTERNATIONAL EQUITY | \$ 7,392,249,336 | 22% | (10.0%) | (8.9%) | 29.7% | (9.4%) | (9.0%) | 30.1% | (15.0%) | (14.3%) | 27.7% | (35.3%) | 6.3% | (4.6%) | (4.5%) | 29.4% |
| REAL ESTATE | \$ 2,745,590,835 | 8% | (10.8%) | (11.0%) | 13.7% | (11.0%) | (10.3%) | 12.7% | (19.1%) | (17.9%) | 12.9% | (39.0%) | 7.1% | (5.4%) | (5.2%) | 12.5% |
| FARMLAND & TIMBER | \$ 182,760,279 | 1% | (11.3%) | (11.5%) | 1.0% | (11.5%) | (10.7%) | 0.9% | (19.9%) | (18.7%) | 0.9% | (40.8%) | 7.4% | (5.6%) | (5.4%) | 0.9% |
| PRIVATE EQUITY | \$ 2,596,437,991 | 8% | (10.8%) | (10.7%) | 12.6% | (10.6%) | (10.0%) | 11.7% | (18.2%) | (18.0%) | 12.3% | (36.5%) | 6.9% | (5.3%) | (5.2%) | 11.8% |
| PRIVATE DEBT | \$ 2,367,085,177 | 7% | (2.5%) | (0.3%) | 0.3% | (4.1%) | (2.6%) | 2.8% | (7.9%) | (5.3%) | 3.3% | (17.4%) | 2.8% | (2.3%) | (1.5%) | 3.1% |
| OPPORTUNISTIC EQUITY | \$ 492,306,646 | 1% | (10.8%) | (10.7%) | 2.4% | (10.6%) | (10.0%) | 2.2% | (18.2%) | (18.0%) | 2.3% | (36.4%) | 6.9% | (5.3%) | (5.2%) | 2.2% |
| OPPORTUNISTIC DEBT | \$ 1,146,064,775 | 3% | (7.3%) | (4.1%) | 2.1% | (9.2%) | (7.1%) | 3.7% | (14.6%) | (11.9%) | 3.6% | (28.6%) | 5.7% | (4.3%) | (3.5%) | 3.6% |
| GLOBAL INFLATION LINKED | \$ 216,348,677 | 1% | (7.3%) | (4.7%) | 0.5% | (7.3%) | (5.0%) | 0.5% | (10.9%) | (8.3%) | 0.5% | (24.0%) | 4.3% | (3.7%) | (2.7%) | 0.5% |
| INFRASTRUCTURE | \$ 312,507,259 | 1% | (9.5%) | (9.3%) | 1.3% | (9.1%) | (8.9%) | 1.3% | (15.3%) | (15.1%) | 1.2% | (35.1%) | 5.8% | (4.6%) | (4.7%) | 1.3% |
| MULTI-ASSET CLASS | \$ 1,096,170,182 | 3% | (3.0%) | 0.2% | (0.1%) | (3.1%) | 0.4% | (0.2%) | (4.6%) | 0.9% | (0.3%) | (7.5%) | 1.9% | (1.7%) | 0.2% | (0.2%) |
| GRAND TOTAL | \$ 33,196,556,905 | 100% | (6.7%) | (6.7%) | 100.0% | (6.7%) | (6.7%) | 100.0% | (11.5%) | (11.5%) | 100.0% | (25.9%) | 4.5% | (3.4%) | (3.4%) | 100.0% |
| INTERIM POLICY BENCHMARK | | | (6.6%) | | | (6.5%) | | | (11.0%) | | | (25.3%) | 4.5% | (3.3%) | | |

| ANNUALIZED RISK | | | | | | | | | | | | | | | | |
|---------------------------------|--------------------------|-------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|----------------|---------------|------------|--------------|----------------|----------------|---------------|
| CASH - UNASSETIZED | \$ 57,133,295 | 0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | N/A | 0.0% | (2.2%) | (0.2%) | 0.0% |
| CASH - ASSETIZED | \$ 904,489,268 | 3% | (9.4%) | (9.6%) | 1.1% | (9.2%) | (8.5%) | 1.0% | (16.0%) | (14.9%) | 1.0% | N/A | 6.0% | (5.4%) | (4.5%) | 1.0% |
| TOTAL FIXED INCOME | \$ 4,458,132,235 | 13% | (6.5%) | (0.5%) | 0.3% | (6.0%) | (0.6%) | 0.4% | (9.0%) | (0.1%) | 0.0% | N/A | 3.6% | (4.1%) | (0.5%) | 0.6% |
| US EQUITY | \$ 9,229,280,950 | 28% | (28.4%) | (29.3%) | 35.3% | (28.2%) | (27.4%) | 33.0% | (49.6%) | (49.4%) | 34.6% | N/A | 19.6% | (14.3%) | (14.1%) | 33.1% |
| INTERNATIONAL EQUITY | \$ 7,392,249,336 | 22% | (34.5%) | (30.8%) | 29.7% | (32.6%) | (31.3%) | 30.1% | (52.0%) | (49.4%) | 27.7% | N/A | 21.7% | (15.8%) | (15.6%) | 29.4% |
| REAL ESTATE | \$ 2,745,590,835 | 8% | (37.4%) | (38.2%) | 13.7% | (38.0%) | (35.5%) | 12.7% | (66.1%) | (61.8%) | 12.9% | N/A | 24.6% | (18.7%) | (17.9%) | 12.5% |
| FARMLAND & TIMBER | \$ 182,760,279 | 1% | (39.1%) | (39.9%) | 1.0% | (39.7%) | (37.1%) | 0.9% | (69.0%) | (64.6%) | 0.9% | N/A | 25.8% | (19.5%) | (18.7%) | 0.9% |
| PRIVATE EQUITY | \$ 2,596,437,991 | 8% | (37.6%) | (37.2%) | 12.6% | (36.9%) | (34.6%) | 11.7% | (63.1%) | (62.4%) | 12.3% | N/A | 24.0% | (18.3%) | (17.9%) | 11.8% |
| PRIVATE DEBT | \$ 2,367,085,177 | 7% | (8.8%) | (0.9%) | 0.3% | (14.3%) | (9.1%) | 2.8% | (27.3%) | (18.4%) | 3.3% | N/A | 9.6% | (7.9%) | (5.2%) | 3.1% |
| OPPORTUNISTIC EQUITY | \$ 492,306,646 | 1% | (37.5%) | (37.2%) | 2.4% | (36.8%) | (34.6%) | 2.2% | (63.0%) | (62.3%) | 2.3% | N/A | 24.0% | (18.3%) | (17.9%) | 2.2% |
| OPPORTUNISTIC DEBT | \$ 1,146,064,775 | 3% | (25.4%) | (14.2%) | 2.1% | (32.0%) | (24.6%) | 3.7% | (50.7%) | (41.1%) | 3.6% | N/A | 19.8% | (14.8%) | (12.2%) | 3.6% |
| GLOBAL INFLATION LINKED | \$ 216,348,677 | 1% | (25.4%) | (16.3%) | 0.5% | (25.4%) | (17.3%) | 0.5% | (37.9%) | (28.7%) | 0.5% | N/A | 15.0% | (12.9%) | (9.2%) | 0.5% |
| INFRASTRUCTURE | \$ 312,507,259 | 1% | (32.8%) | (32.1%) | 1.3% | (31.4%) | (30.9%) | 1.3% | (52.9%) | (52.4%) | 1.2% | N/A | 20.0% | (16.0%) | (16.2%) | 1.3% |
| MULTI-ASSET CLASS | \$ 1,096,170,182 | 3% | (10.4%) | 0.7% | (0.1%) | (10.7%) | 1.4% | (0.2%) | (15.9%) | 3.2% | (0.3%) | N/A | 6.7% | (6.0%) | 0.6% | (0.2%) |
| GRAND TOTAL | \$ 33,196,556,905 | 100% | (23.1%) | (23.1%) | 100.0% | (23.1%) | (23.1%) | 100.0% | (39.7%) | (39.7%) | 100.0% | N/A | 15.5% | (11.8%) | (11.8%) | 100.0% |
| INTERIM POLICY BENCHMARK | | | (22.8%) | | | (22.6%) | | | (38.2%) | | | N/A | 15.5% | (11.4%) | | |

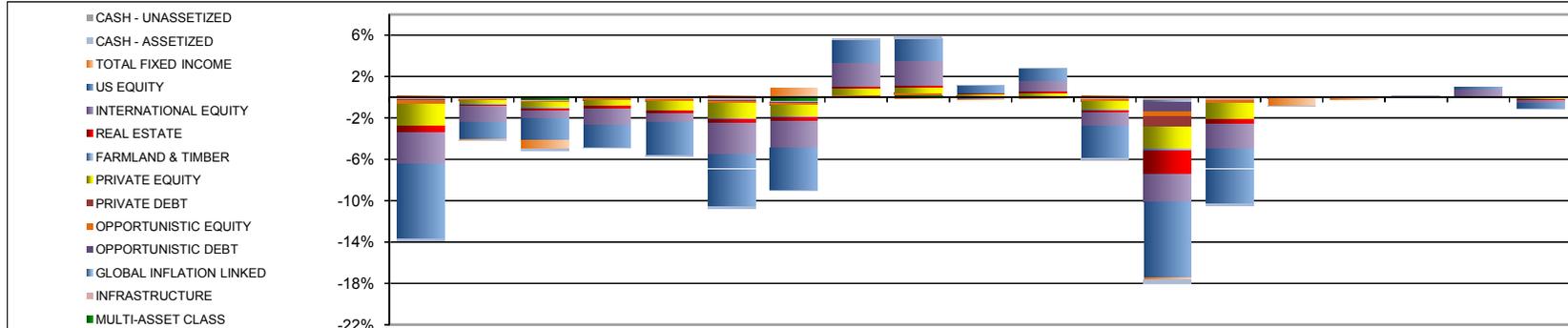
| Strategy | \$ Value | % Value | Beta SP500 | Corr SP500 | Beta MSCI EAFE | Corr MSCI EAFE | Duration | Convexity | Notional Exposure | Gross Exposure | Gross Leverage |
|-------------------------|--------------------------|-------------|-------------|-------------|----------------|----------------|-------------|--------------|--------------------------|--------------------------|----------------|
| CASH - UNASSETIZED | \$ 57,133,295 | 0% | 0.00 | | 0.00 | | | | \$ 57,133,295 | \$ 57,133,295 | 100.0% |
| CASH - ASSETIZED | \$ 904,489,268 | 3% | 0.15 | 0.91 | 0.12 | 0.84 | | | \$ 1,813,424,736 | \$ 904,489,268 | 100.0% |
| TOTAL FIXED INCOME | \$ 4,458,132,235 | 13% | (0.00) | (0.01) | 0.02 | 0.09 | 5.16 | 0.124 | \$ 4,316,524,255 | \$ 4,458,132,235 | 100.0% |
| US EQUITY | \$ 9,229,280,950 | 28% | 1.03 | 0.99 | 0.79 | 0.90 | 0.02 | 0.000 | \$ 9,422,526,075 | \$ 9,237,379,192 | 100.1% |
| INTERNATIONAL EQUITY | \$ 7,392,249,336 | 22% | 1.06 | 0.90 | 0.99 | 0.99 | | | \$ 7,392,294,880 | \$ 7,411,939,722 | 100.3% |
| REAL ESTATE | \$ 2,745,590,835 | 8% | 1.16 | 0.87 | 1.00 | 0.88 | | | \$ 2,745,590,835 | \$ 2,745,590,835 | 100.0% |
| FARMLAND & TIMBER | \$ 182,760,279 | 1% | 1.21 | 0.87 | 1.04 | 0.88 | | | \$ 182,760,279 | \$ 182,760,279 | 100.0% |
| PRIVATE EQUITY | \$ 2,596,437,991 | 8% | 1.23 | 0.95 | 0.94 | 0.85 | | | \$ 2,596,437,991 | \$ 2,602,914,457 | 100.2% |
| PRIVATE DEBT | \$ 2,367,085,177 | 7% | 0.32 | 0.61 | 0.26 | 0.60 | 0.67 | 0.009 | \$ 2,360,051,193 | \$ 2,367,199,636 | 100.0% |
| OPPORTUNISTIC EQUITY | \$ 492,306,646 | 1% | 1.23 | 0.95 | 0.94 | 0.85 | | | \$ 492,306,646 | \$ 492,306,646 | 100.0% |
| OPPORTUNISTIC DEBT | \$ 1,146,064,775 | 3% | 0.73 | 0.68 | 0.64 | 0.70 | | | \$ 1,146,064,775 | \$ 1,146,064,775 | 100.0% |
| GLOBAL INFLATION LINKED | \$ 216,348,677 | 1% | 0.26 | 0.63 | 0.24 | 0.67 | 0.28 | 0.001 | \$ 423,654,526 | \$ 216,348,677 | 100.0% |
| INFRASTRUCTURE | \$ 312,507,259 | 1% | 1.05 | 0.97 | 0.90 | 0.98 | | | \$ 312,507,259 | \$ 312,507,259 | 100.0% |
| MULTI-ASSET CLASS | \$ 1,096,170,182 | 3% | (0.00) | (0.12) | (0.00) | (0.16) | | | \$ 14,510,712,280 | \$ 1,096,170,182 | 100.0% |
| GRAND TOTAL | \$ 33,196,556,905 | 100% | 0.56 | 0.97 | 0.47 | 0.95 | 4.58 | 0.110 | \$ 47,771,989,025 | \$ 33,230,936,458 | 100.1% |

ARIZONA STATE RETIREMENT SYSTEM
As of December 31, 2015

TOTAL PLAN STRESS TESTS

| Strategy | \$ Value | % Value | Historical Scenarios | | | | | | | | | | | | | Predictive Scenarios | | | | | | |
|---------------------------------|--------------------------|---------------|----------------------|------------------|-----------------------------|----------------------------|------------------------|-------------------------------------|------------------------------|---------------------------------|---|---------------------------------|-------------------------------|---------------------|---------------|----------------------|---------------------------|------------------|---------------|-----------------|----------------|--|
| | | | Black Monday - 5 Day | Gulf War - 5 Day | Bond Crash: Feb 94 - May 94 | Asian Crisis 97-98 - 5 day | Russian Crisis - 5 Day | Nasdaq Correction: July 98 - Aug 98 | Russian Debt Crisis Aug- Oct | IR Steepening: Sept 98 - Nov 98 | Emerging Markets Rally: Jan 99 - May 99 | Fed Tightening: April - June 99 | Nasdaq Rally: Nov 99 - Jan 00 | 9/11 Attack - 5 Day | 09-10-2008 | S&P 500 -20% | IR Parallel Shift +100bps | Spread Up 100bps | Inflation +1% | Gold Shock -20% | Oil Shock -20% | |
| Stress Test Stand Alone | | | | | | | | | | | | | | | | | | | | | | |
| CASH - UNASSETIZED | \$ 57,133,295 | 0.2% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| CASH - ASSETIZED | \$ 904,489,268 | 2.7% | (10.1) | (2.6) | (6.6) | (2.8) | (4.4) | (9.5) | (2.3) | 3.4 | 7.6 | 2.0 | 3.1 | (3.8) | (13.8) | (7.8) | (2.5) | 0.0 | 0.4 | (0.1) | (0.7) | |
| TOTAL FIXED INCOME | \$ 4,458,132,235 | 13.4% | 1.0 | (0.4) | (6.0) | 0.7 | 0.5 | 0.9 | 6.8 | 0.0 | (0.8) | (0.7) | (1.2) | 1.3 | (1.4) | 0.0 | (5.3) | (1.4) | 0.7 | (0.0) | 0.4 | |
| US EQUITY | \$ 9,229,280,950 | 27.8% | (26.0) | (5.7) | (7.4) | (7.9) | (11.5) | (18.2) | (14.8) | 8.2 | 7.5 | 2.7 | 4.0 | (11.1) | (26.3) | (19.2) | 0.0 | 0.0 | (0.0) | 0.6 | (2.0) | |
| INTERNATIONAL EQUITY | \$ 7,392,249,336 | 22.3% | (13.2) | (7.1) | (3.7) | (7.2) | (3.5) | (13.3) | (11.6) | 10.0 | 10.8 | (0.8) | 4.9 | (5.8) | (12.1) | (10.5) | 0.0 | 0.0 | 0.0 | 3.2 | (1.4) | |
| REAL ESTATE | \$ 2,745,590,835 | 8.3% | (7.7) | (1.7) | (2.2) | (2.3) | (3.4) | (5.5) | (4.4) | 2.5 | 2.2 | 0.8 | 1.2 | (3.3) | (27.8) | (5.7) | 0.0 | 0.0 | 0.0 | 0.0 | (0.6) | |
| FARMLAND & TIMBER | \$ 182,760,279 | 0.6% | (8.1) | (1.8) | (2.3) | (2.4) | (3.6) | (5.7) | (4.6) | 2.6 | 2.3 | 0.8 | 1.2 | (3.5) | (29.0) | (5.9) | 0.0 | 0.0 | 0.0 | 0.0 | (0.6) | |
| PRIVATE EQUITY | \$ 2,596,437,991 | 7.8% | (26.0) | (5.7) | (7.4) | (7.9) | (11.5) | (18.3) | (14.7) | 8.2 | 7.5 | 2.7 | 3.9 | (11.1) | (27.1) | (19.1) | 0.0 | 0.0 | 0.0 | 0.0 | (2.0) | |
| PRIVATE DEBT | \$ 2,367,085,177 | 7.1% | (0.3) | (0.1) | (0.1) | (0.1) | (0.1) | (0.2) | (0.1) | 0.1 | 0.1 | 0.0 | 0.0 | (0.1) | (14.8) | (0.2) | (0.0) | (0.2) | 0.0 | 0.0 | (0.1) | |
| OPPORTUNISTIC EQUITY | \$ 492,306,646 | 1.5% | (26.0) | (5.7) | (7.4) | (7.9) | (11.5) | (18.3) | (14.8) | 8.2 | 7.5 | 2.7 | 4.0 | (11.1) | (27.1) | (19.1) | 0.0 | 0.0 | 0.0 | 0.0 | (2.0) | |
| OPPORTUNISTIC DEBT | \$ 1,146,064,775 | 3.5% | (3.2) | (0.7) | (0.9) | (1.0) | (1.4) | (2.2) | (1.8) | 1.0 | 0.9 | 0.3 | 0.5 | (1.4) | (27.3) | (2.3) | 0.0 | 0.0 | 0.0 | 0.0 | (0.5) | |
| GLOBAL INFLATION LINKED | \$ 216,348,677 | 0.7% | (0.0) | 0.0 | 0.0 | (0.0) | (0.0) | (0.0) | 0.1 | (0.0) | 0.0 | 0.0 | 0.0 | (0.0) | (15.9) | 0.0 | (0.0) | 0.0 | 0.0 | (4.9) | (5.0) | |
| INFRASTRUCTURE | \$ 312,507,259 | 0.9% | (20.6) | (4.5) | (5.9) | (6.2) | (9.1) | (14.5) | (11.7) | 6.5 | 5.9 | 2.1 | 3.1 | (8.8) | (28.3) | (15.1) | 0.0 | 0.0 | 0.0 | 0.0 | (1.9) | |
| MULTI-ASSET CLASS | \$ 1,096,170,182 | 3.3% | (0.7) | (3.7) | (9.3) | (1.9) | (3.3) | (4.6) | (10.7) | (1.5) | 5.4 | 0.9 | 0.8 | (2.7) | (27.3) | (3.8) | (4.9) | 0.3 | 0.8 | 2.2 | 1.0 | |
| GRAND TOTAL | \$ 33,196,556,905 | 100.0% | (13.8) | (4.2) | (5.1) | (4.9) | (5.7) | (10.7) | (8.1) | 5.6 | 5.8 | 0.9 | 2.7 | (5.8) | (18.0) | (10.5) | (0.9) | (0.2) | 0.1 | 0.9 | (1.1) | |
| INTERIM POLICY BENCHMARK | | | (14.0) | (4.5) | (5.6) | (5.4) | (5.4) | (11.2) | (7.5) | 6.7 | 6.5 | 0.7 | 3.0 | (5.8) | (20.4) | (10.7) | (1.2) | (0.4) | 0.2 | 0.9 | (1.2) | |

| Stress Test Contribution | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--------------------------|---------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|------------|------------|------------|------------|--------------|---------------|---------------|--------------|--------------|------------|------------|--------------|--|
| CASH - UNASSETIZED | \$ 57,133,295 | 0.2% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| CASH - ASSETIZED | \$ 904,489,268 | 2.7% | (0.3) | (0.1) | (0.2) | (0.1) | (0.1) | (0.3) | (0.1) | 0.1 | 0.2 | 0.1 | 0.1 | (0.1) | (0.4) | (0.2) | (0.1) | 0.0 | 0.0 | (0.0) | (0.0) | |
| TOTAL FIXED INCOME | \$ 4,458,132,235 | 13.4% | 0.1 | (0.1) | (0.8) | 0.1 | 0.1 | 0.1 | 0.9 | 0.0 | (0.1) | (0.1) | (0.2) | 0.2 | (0.2) | 0.0 | (0.7) | (0.2) | 0.1 | (0.0) | 0.1 | |
| US EQUITY | \$ 9,229,280,950 | 27.8% | (7.2) | (1.6) | (2.0) | (2.2) | (3.2) | (5.1) | (4.1) | 2.3 | 2.1 | 0.7 | 1.1 | (3.1) | (7.3) | (5.3) | 0.0 | 0.0 | (0.0) | 0.2 | (0.5) | |
| INTERNATIONAL EQUITY | \$ 7,392,249,336 | 22.3% | (2.9) | (1.6) | (0.8) | (1.6) | (0.8) | (3.0) | (2.6) | 2.2 | 2.4 | (0.2) | 1.1 | (1.3) | (2.7) | (2.3) | 0.0 | 0.0 | 0.0 | 0.7 | (0.3) | |
| REAL ESTATE | \$ 2,745,590,835 | 8.3% | (0.6) | (0.1) | (0.2) | (0.2) | (0.3) | (0.5) | (0.4) | 0.2 | 0.2 | 0.1 | 0.1 | (0.3) | (2.3) | (0.5) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | |
| FARMLAND & TIMBER | \$ 182,760,279 | 0.6% | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | (0.2) | (0.0) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | |
| PRIVATE EQUITY | \$ 2,596,437,991 | 7.8% | (2.0) | (0.4) | (0.6) | (0.6) | (0.9) | (1.4) | (1.2) | 0.6 | 0.6 | 0.2 | 0.3 | (0.9) | (2.1) | (1.5) | 0.0 | 0.0 | 0.0 | 0.0 | (0.2) | |
| PRIVATE DEBT | \$ 2,367,085,177 | 7.1% | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | (1.1) | (0.0) | (0.0) | (0.0) | 0.0 | 0.0 | (0.0) | |
| OPPORTUNISTIC EQUITY | \$ 492,306,646 | 1.5% | (0.4) | (0.1) | (0.1) | (0.1) | (0.2) | (0.3) | (0.2) | 0.1 | 0.1 | 0.0 | 0.1 | (0.2) | (0.4) | (0.3) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | |
| OPPORTUNISTIC DEBT | \$ 1,146,064,775 | 3.5% | (0.1) | (0.0) | (0.0) | (0.0) | (0.0) | (0.1) | (0.1) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | (0.9) | (0.1) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | |
| GLOBAL INFLATION LINKED | \$ 216,348,677 | 0.7% | (0.0) | 0.0 | 0.0 | (0.0) | (0.0) | (0.0) | 0.0 | (0.0) | 0.0 | 0.0 | 0.0 | (0.0) | (0.1) | 0.0 | (0.0) | 0.0 | 0.0 | (0.0) | (0.0) | |
| INFRASTRUCTURE | \$ 312,507,259 | 0.9% | (0.2) | (0.0) | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | 0.1 | 0.1 | 0.0 | 0.0 | (0.1) | (0.3) | (0.1) | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | |
| MULTI-ASSET CLASS | \$ 1,096,170,182 | 3.3% | (0.0) | (0.1) | (0.3) | (0.1) | (0.1) | (0.2) | (0.4) | (0.0) | 0.2 | 0.0 | 0.0 | (0.1) | (0.1) | (0.1) | (0.2) | 0.0 | 0.0 | 0.1 | 0.0 | |
| GRAND TOTAL | \$ 33,196,556,905 | 100.0% | (13.8) | (4.2) | (5.1) | (4.9) | (5.7) | (10.7) | (8.1) | 5.6 | 5.8 | 0.9 | 2.7 | (5.8) | (18.0) | (10.5) | (0.9) | (0.2) | 0.1 | 0.9 | (1.1) | |
| INTERIM POLICY BENCHMARK | | | (14.0) | (4.5) | (5.6) | (5.4) | (5.4) | (11.2) | (7.5) | 6.7 | 6.5 | 0.7 | 3.0 | (5.8) | (20.4) | (10.7) | (1.2) | (0.4) | 0.2 | 0.9 | (1.2) | |



| GLOSSARY | DEFINITION | INTERPRETATION |
|--------------------------------------|---|--|
| Historical VaR 95% | A risk metric that is derived from a full revaluation historical simulation of the risk factors impacting a portfolio, <u>making no assumption of the tail distribution</u> , and reporting the largest loss likely to be suffered over a holding period (1Month for ASRS) 5 times out of 100, or 1 month out of 20 | Value at Risk is a number, measured in price units or as percentage of portfolio value, which tells you that in a defined large percentage of cases (usually 95% or 99%) your portfolio is likely to not lose more than that amount of money. Or said the other way around, in a defined small percentage of cases (5% or 1%) your loss is expected to be greater than that number. |
| HVaR Contri 95% | This is the decomposition of the VaR, making it an additive measure, showing positive values where risk is decreased and correlations are negative. | |
| HVaR Contri % to Total | This is the VaR contribution displayed in percent. | |
| Parametric VaR 95% | A risk metric that is derived from a full revaluation historical simulation of the risk factors impacting a portfolio, <u>making a Normal distribution assumption of the tail distribution</u> , and reporting the largest loss likely to be suffered over a holding period (1Month for ASRS) 5 times out of 100, or 1 month out of 20. | Value at Risk is a number, measured in price units or as percentage of portfolio value, which tells you that in a defined large percentage of cases (usually 95% or 99%) your portfolio is likely to not lose more than that amount of money. Or said the other way around, in a defined small percentage of cases (5% or 1%) your loss is expected to be greater than that number. |
| PVaR Contri 95% | This is the decomposition of the VaR, making it an additive measure, showing positive values where risk is decreased and correlations are negative. | |
| PVaR Contri % to Total | This is the VaR contribution displayed in percent. | |
| Exp Tail Loss 95% | Also known as Conditional VaR or ETL, it is derived by taking a weighted average between the VaR and losses exceeding the VaR. If VaR is reported at 95.0%, then ETL will average the losses between 95.1% to 99.9%. It is a risk measure that assesses the risk beyond VaR and into the tail end of the distribution of loss. | A measure that produces better incentives for traders than VaR is expected shortfall. This is also sometimes referred to as Conditional VaR, or tail loss. <u>Where VaR asks the question 'how bad can things get?', expected shortfall asks 'if things do get bad, what is our expected loss?'</u> |
| Exp Tail Loss Contri 95% | This is the decomposition of the ETL making it an additive measure, showing positive values where risk is decreased and correlations are negative. | |
| Exp Tail Loss Contri % to Total | This is the ETL contribution displayed in percent. | |
| Max Loss | The maximum projected loss. | |
| Downside Risk (8.7%) | A risk metric that distinguishes between "good" and "bad" returns by assigning risk only to those returns below a return specified by an investor. Downside risk is considered a more effective risk measure than standard deviation (volatility) for two important reasons: 1) it is investor specific, and 2) it identifies return distributions that have higher probabilities for negative ("left tail") market events. Downside risk is also referred to as downside deviation or target semi-deviation. | A 5 % downside risk with an 8.7% MAR means that the conditional average underperformance (below 8.7% annual) is 5%, adjusted for a positive skew (greater than the MAR). Effectively, downside risk amplifies a big loss (by squaring the distance of that loss to the target) and smoothes out the risk measure by taking into account the gains setting them up to be equal to the target MAR. |
| Downside Risk Contri (8.7%) | This is the decomposition of the downside risk, making it an additive measure, showing positive values where risk is decreased and correlations are negative. | |
| Downside Risk Contri (8.7%) to Total | This is the downside risk contribution displayed in percent. | |

Agenda Item #8



NEPC, LLC

To: Mr. Kevin McCarthy, Chair, Arizona State Retirement System (ASRS) Board

From: Mr. Allan Martin, Partner, Consultant, NEPC
Mr. Dan LeBeau, Consultant, NEPC

Date: February 19, 2016

Subject: Agenda Item #8: Presentation, Discussion and Appropriate Action Regarding Independent Reporting, Monitoring and Oversight of the ASRS Investment Program – Includes Total Fund Q4-15

Purpose

To present and discuss information regarding the independent reporting, monitoring and oversight of the ASRS Investment Program.

Recommendation

Informational only; no action required.

Background

NEPC is responsible for providing an independent reporting; monitoring and oversight function from the Investment Program information which is presented by the CIO and IMD.

As a result, NEPC has developed reports for both the Investment Committee and Board designed to 1) provide the appropriate level of investment information for the purposes of independent oversight (ASRS SAAP compliance, Asset Class Committee minutes review, investment selection due diligence packet compliance, etc.); 2) provide ASRS investment program performance relative to its goals/objectives (presented quarterly); and 3) communicate NEPC's perspectives on the market environment, investment outlook or other initiatives or topics they believe are important to convey to the Board.

As of December 31, 2015 the Total Fund's market value was approximately \$33.6 billion.

For the one-year period ending December 31, 2015, the Total Fund returned 1.3% (net of fees), outperforming the Interim SAA Policy by 1.7%. For the three-year period, the Total Fund produced a return of 8.3% per annum, outperforming the Interim SAA Policy by 1.6%. Over the past ten years, the Total Fund has returned 6.1% per annum, and since inception, the portfolio's performance is 9.7%.

NEPC will provide a review of Total Fund performance and an independent assessment of the ASRS investment program.

Attachments:

- NEPC's Independent Reporting, Monitoring and Oversight reports

Arizona State Retirement System

Independent ASRS Investment Program Oversight for the Period Ending December 31, 2015

February 26, 2016

Allan Martin, Partner, NEPC
Dan LeBeau, Consultant, NEPC



- ASRS Investment Objectives/Performance
- Independent Oversight/Compliance
 - SAA Policy Compliance
 - Total Fund and Asset Class Analysis
 - Asset Class Committee Monitoring
- Market Environment Update and Outlook
- Appendix: SAA Policy History

ASRS Investment Objectives/Performance

Note: All of the data shown on the following pages is as of December 31, 2015 and reflects the deduction of investment manager fees, unless otherwise noted.



Macro

- Objective #1: Achieve a twenty-year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.
- Objective #2: Achieve one- and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS Strategic Asset Allocation Policy (SAAP) Benchmark.
- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.
- Objective #4: Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.

Micro

Source: ASRS Strategic Plan, March 2013

- Objective #1: Achieve a twenty-year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.

| | <u>20 Year Annualized Return</u> |
|---------------|--|
| Total Fund | 7.5% |
| Constant 8% | <u>8.0%</u> |
| Excess Return | (0.5)% |

**Goal Met:
No**

Total Fund Performance

- Objective #2: Achieve one- and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS Strategic Asset Allocation Policy (SAAP) Benchmark.

| | Quarter | 1 Year | 3 Years | 5 Years | 10 Years | Since Inception (6/30/75) |
|---------------------------------------|---------|--------|---------|---------|----------|---------------------------|
| Total Fund | 2.7% | 1.3% | 8.3% | 7.8% | 6.1% | 9.7% |
| Interim SAA Policy¹ | 1.6% | -0.4% | 6.7% | 6.9% | 5.6% | 9.4% |
| Excess Return | 1.1% | 1.7% | 1.6% | 0.9% | 0.5% | 0.3% |

1 Year Goal Met: Yes
3 Year Goal Met: Yes

¹Composition of SAA Policy can be found in the appendix.

Arizona State Retirement System
Total Fund Attribution Analysis

| Total Plan | 1 Year | 3 Years | 5 Years |
|---------------------------------------|---------------|----------------|----------------|
| Allocation Effect ¹ | 0.46% | 0.87% | 0.44% |
| Manager Selection Effect ² | 1.19% | 0.70% | 0.53% |
| Residual ³ | 0.00% | -0.02% | -0.04% |
| Excess Return | 1.65% | 1.55% | 0.93% |

The Brinson-Fachler Attribution model explains excess return by identifying the size of contributors or detractors from excess return based on the three effects defined below:

1. Allocation Effect: Measures the impact of the decision to over/under weight asset classes relative to Interim SAAP benchmark weights. (Return Asset Class Index – Total Interim Policy Index Return) × (Weight Asset Class Portfolio – Weight Asset Class Interim Policy Index)

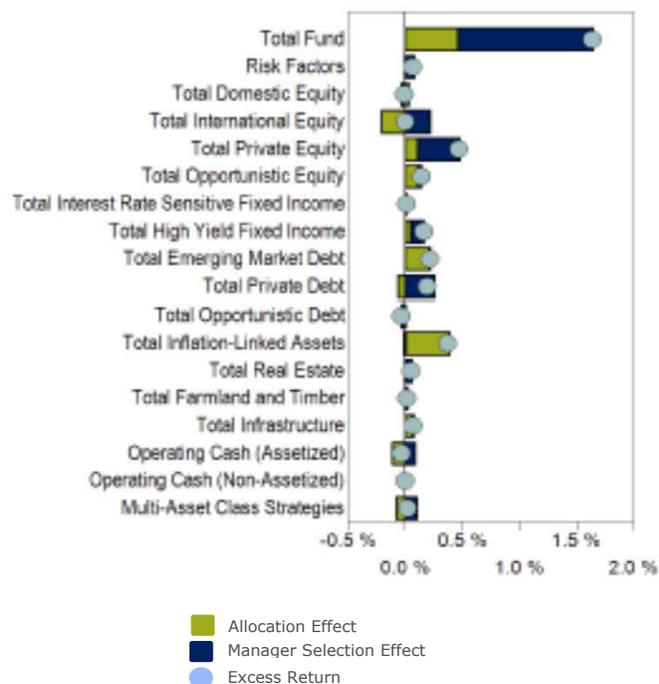
2. Manager Selection Effect: Measures the impact of over/under performance of asset classes in the portfolio relative to the asset class benchmarks in the Interim SAAP benchmark. [Weight Asset Class Benchmark × (Return Portfolio Asset Class – Return Asset Class in Interim Policy Index)] + **Interaction Effect:** Measures the impact of over/under weighting decisions and over/under performance. (Return Asset Class Portfolio (Weight Asset Class Portfolio – Weight Asset Class Policy Index)) – (Return Asset Class Index (Weight Asset Class Portfolio – Weight Asset Class Index))

3. Residual: Contribution to excess return not captured in Allocation Effect and Manager Selection Effect.

Arizona State Retirement System

Total Fund Attribution Detail

Attribution Effects
1 Year Ending December 31, 2015



1 Year Excess Return: +1.65%

- Allocation Effect: +0.46%
 - Commodities tactical underweight (+0.38%)
 - Emerging Market Debt tactical underweight (+0.20%)
 - Opportunistic Equity tactical allocation (+0.10%)
 - Private Equity overweight (+0.10%)
 - International Equity tactical underweight (-0.21%)
 - Multi-Asset Strategies tactical underweight (-0.08%)
- Manager Selection Effect: +1.19%
 - Private Equity outperformed due to various managers (+0.36%)
 - Private Debt outperformed due to various managers (+0.25%)
 - International Equity outperformed due to various managers (+0.21%)
 - Multi-Asset Strategies outperformed (+0.09%)
 - Operating Cash outperformed (+0.08%)
 - Risk Factors outperformed (+0.07%)
- Residual: 0.00%

The Brinson-Fachler Attribution model explains excess return by identifying the size of contributors or detractors from excess return based on the three effects defined below:

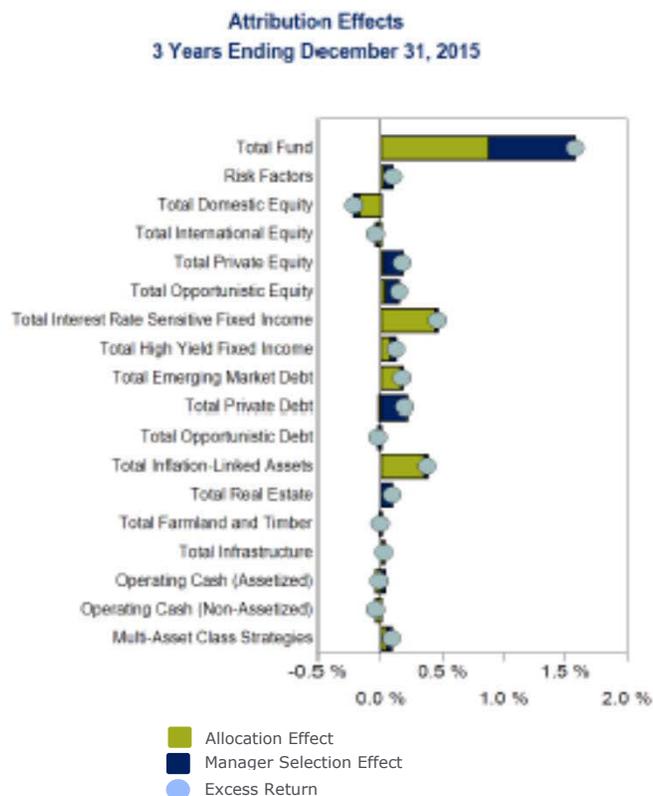
Allocation Effect: Measures the impact of the decision to over/under weight asset classes relative to Interim SAAP benchmark weights. $(\text{Return Asset Class Index} - \text{Total Interim Policy Index Return}) \times (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Interim Policy Index})$

Manager Selection Effect: Measures the impact of over/under performance of asset classes in the portfolio relative to the asset class benchmarks in the Interim SAAP benchmark. $[\text{Weight Asset Class Benchmark} \times (\text{Return Portfolio Asset Class} - \text{Return Asset Class in Interim Policy Index})]$ + **Interaction Effect:** Measures the impact of over/under weighting decisions and over/under performance. $(\text{Return Asset Class Portfolio} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Policy Index})) - (\text{Return Asset Class Index} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Index}))$

Residual: Contribution to excess return not captured in Allocation Effect and Manager Selection Effect.

Arizona State Retirement System

Total Fund Attribution Detail



3 Year Excess Return: +1.55%

- Allocation Effect: +0.87%
 - Public Markets Fixed Income tactical underweight (+0.67%)
 - Commodities tactical underweight (+0.36%)
 - Domestic Equity tactical underweight (-0.18%)
- Manager Selection Effect: +0.70%
 - Private Debt outperformed due to various managers (+0.21%)
 - Private Equity outperformed due to various managers (+0.15%)
 - Opportunistic Equity outperformed due to various managers (+0.11%)
 - Real Estate outperformed due to various managers (+0.09%)
 - Risk Factors outperformed (+0.07%)
 - Public Markets Fixed Income outperformed due to various managers (+0.07%)
- Residual: -0.02%

The Brinson-Fachler Attribution model explains excess return by identifying the size of contributors or detractors from excess return based on the three effects defined below:

Allocation Effect: Measures the impact of the decision to over/under weight asset classes relative to Interim SAAP benchmark weights. $(\text{Return Asset Class Index} - \text{Total Interim Policy Index Return}) \times (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Interim Policy Index})$

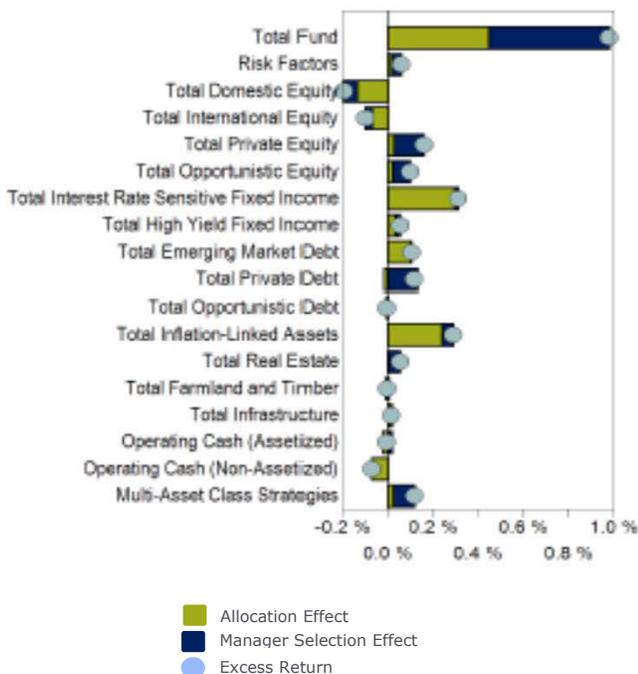
Manager Selection Effect: Measures the impact of over/under performance of asset classes in the portfolio relative to the asset class benchmarks in the Interim SAAP benchmark. $[\text{Weight Asset Class Benchmark} \times (\text{Return Portfolio Asset Class} - \text{Return Asset Class in Interim Policy Index})]$ + **Interaction Effect:** Measures the impact of over/under weighting decisions and over/under performance. $(\text{Return Asset Class Portfolio} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Policy Index})) - (\text{Return Asset Class Index} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Index}))$

Residual: Contribution to excess return not captured in Allocation Effect and Manager Selection Effect.

Arizona State Retirement System

Total Fund Attribution Detail

Attribution Effects
5 Years Ending December 31, 2015



5 Year Excess Return: +0.93%

- Allocation Effect: +0.44%
 - Public Markets Fixed Income tactical underweight (+0.43%)
 - Commodities tactical underweight (+0.24%)
 - Domestic Equity tactical underweight (-0.14%)
 - International Equity tactical overweight (-0.07%)
- Manager Selection Effect: +0.53%
 - Private Equity outperformed due to various managers (+0.13%)
 - Private Debt outperformed due to various managers (+0.13%)
 - Multi-Asset Strategies outperformed (+0.09%)
 - Opportunistic Equity outperformed due to various managers (+0.08%)
 - Commodities outperformed (+0.05%)
 - Real Estate outperformed due to various managers (+0.05%)
- Residual: -0.04%

The Brinson-Fachler Attribution model explains excess return by identifying the size of contributors or detractors from excess return based on the three effects defined below:

Allocation Effect: Measures the impact of the decision to over/under weight asset classes relative to Interim SAAP benchmark weights. $(\text{Return Asset Class Index} - \text{Total Interim Policy Index Return}) \times (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Interim Policy Index})$

Manager Selection Effect: Measures the impact of over/under performance of asset classes in the portfolio relative to the asset class benchmarks in the Interim SAAP benchmark. $[\text{Weight Asset Class Benchmark} \times (\text{Return Portfolio Asset Class} - \text{Return Asset Class in Interim Policy Index})]$ + **Interaction Effect:** Measures the impact of over/under weighting decisions and over/under performance. $(\text{Return Asset Class Portfolio} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Policy Index})) - (\text{Return Asset Class Index} (\text{Weight Asset Class Portfolio} - \text{Weight Asset Class Index}))$

Residual: Contribution to excess return not captured in Allocation Effect and Manager Selection Effect.

Asset Class Performance vs. Benchmark – Public Markets

- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.

| | 1 Year Return | 3 Year Return |
|---|---------------|---------------|
| ASRS Total Domestic and Int'l Equity ¹ | -0.9% | 9.8% |
| ASRS Custom Total Equity Benchmark | -1.1% | 9.6% |
| Excess Return | 0.2% | 0.2% |
| ASRS Domestic Equity | 0.8% | 14.7% |
| ASRS Custom Domestic Equity Benchmark | 0.9% | 14.8% |
| Excess Return | -0.1% | -0.1% |
| ASRS International Equity | -2.2% | 2.7% |
| ASRS Custom Int'l Equity Benchmark | -3.2% | 2.8% |
| Excess Return | 1.0% | -0.1% |
| ASRS Public Markets Fixed Income | 0.2% | 0.7% |
| ASRS Custom Fixed Income Benchmark | -1.8% | 0.0% |
| Excess Return | 2.0% | 0.7% |
| ASRS Inflation-Linked | -26.0% | -17.1% |
| ASRS Custom Inflation-Linked Benchmark | -24.7% | -17.3% |
| Excess Return | -1.3% | 0.2% |
| ASRS Multi-Asset Class Strategies | -1.4% | 7.1% |
| ASRS Multi-Asset Class Strategies Benchmark | 0.3% | 7.6% |
| Excess Return | -1.7% | -0.5% |

¹Performance of ASRS Total Domestic and Int'l Equity includes the performance of the ASRS Domestic Equity and ASRS International Equity asset classes and the Equity Risk Factor Portfolio with an inception date of 6/1/2013.

Note: Composition of ASRS Custom Asset Class Benchmarks can be found in the appendix.

**Goal Met:
Partially**

Asset Class Performance vs. Benchmark – Private Markets¹

- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.

| | 1 Year Return | 3 Year Return | IRR Since Inception | Inception Date |
|---|---------------|---------------|---------------------|----------------|
| ASRS Private Equity | 5.4% | 12.6% | 11.4% | Oct-07 |
| Russell 2000 | -0.8% | 8.6% | 9.5% | |
| Excess Return | 6.2% | 4.0% | 1.9% | |
| ASRS Opportunistic Equity ² | 12.0% | 23.2% | 23.9% | Apr-11 |
| ASRS Private Debt | 8.7% | 11.3% | 11.4% | Jul-12 |
| S&P/LSTA Leveraged Loan Index + 250 bps | 3.3% | 4.7% | 4.9% | |
| Excess Return | 5.4% | 6.6% | 6.5% | |
| ASRS Opportunistic Debt ² | -0.1% | 6.5% | 10.3% | Jan-08 |
| ASRS Real Estate | 14.8% | 14.0% | 7.5% | Oct-05 |
| NFI - ODCE Index | 13.9% | 12.4% | 6.8% | |
| Excess Return | 0.9% | 1.6% | 0.7% | |
| ASRS Farmland and Timber | 3.6% | -- | 2.8% | Jul-13 |
| CPI ex-Food and Energy + 350 bps | 5.5% | -- | 5.5% | |
| Excess Return | -1.9% | | -2.7% | |
| ASRS Total Infrastructure | -- | -- | 4.9% | Dec-14 |
| CPI ex-Food and Energy + 350 bps | -- | -- | 5.4% | |
| Excess Return | | | -0.5% | |

1- Performance of private markets portfolios and corresponding benchmarks is reported on a one quarter lag. Performance shown as of September 30, 2015.

2- Net absolute rate of return expectations range from 10-14% per annum.

Note: Due to the drawdown nature of private markets portfolios in which the investment managers call capital over time, dollar-weighted performance, or internal rate of return (IRR) is a more appropriate measure of the performance of ASRS private markets portfolios.

**Goal Met:
Partially**

Cash Management

- Objective #4: Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.

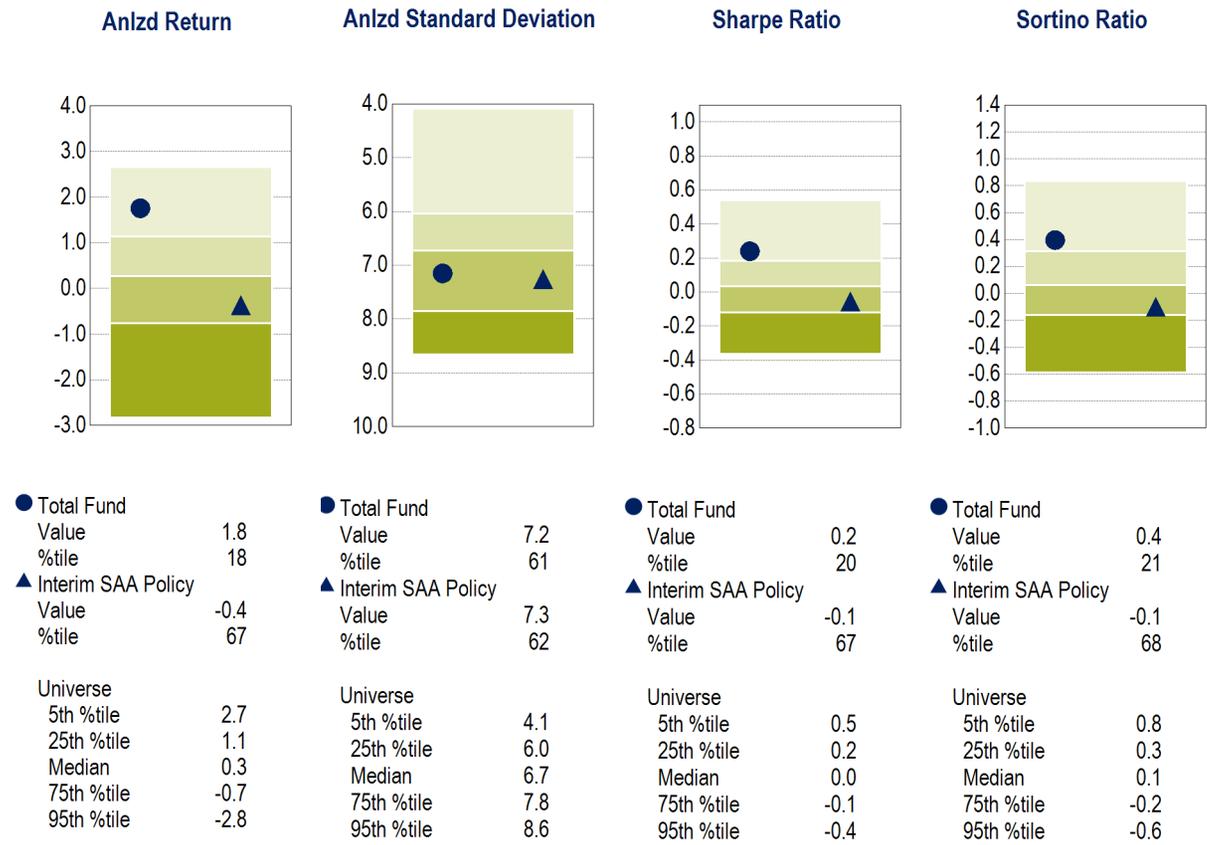
| Month | External CFs + | Internal CFs = | Total CFs during the Month | Last day of the Month Ending Balance* |
|----------|----------------|----------------|----------------------------|---------------------------------------|
| Jan – 15 | (\$82.9) | (\$39.8) | (\$122.7) | \$140.1 |
| Feb – 15 | (\$123.2) | \$7.2 | (\$116.0) | \$80.4 |
| Mar – 15 | (\$64.8) | (\$19.3) | (\$84.1) | \$418.0 |
| Apr – 15 | (\$90.9) | (\$154.8) | (\$245.7) | \$550.1 |
| May – 15 | (\$47.8) | (\$37.8) | (\$85.6) | \$479.0 |
| Jun – 15 | (\$74.4) | (\$117.1) | (\$191.5) | \$318.3 |
| Jul – 15 | (\$150.0) | (\$205.8) | (\$355.8) | \$405.5 |
| Aug – 15 | (\$136.3) | (\$115.6) | (\$251.9) | \$351.7 |
| Sep – 15 | (\$103.3) | (\$333.9) | (\$437.2) | \$392.0 |
| Oct – 15 | (\$73.0) | (\$43.3) | (\$116.3) | \$394.5 |
| Nov – 15 | (\$107.8) | (\$129.9) | (\$237.7) | \$705.5 |
| Dec – 15 | (\$65.4) | (\$302.6) | (\$368.0) | \$966.1 |

***Includes assetized & unassetized cash balances (Inception of 1/26/15); represents monies to be used for funding needs that occur in subsequent month(s). Generally, monthly pension payments occur on the first day of month.**

**Goal Met:
Yes**

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)
1 Year



Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

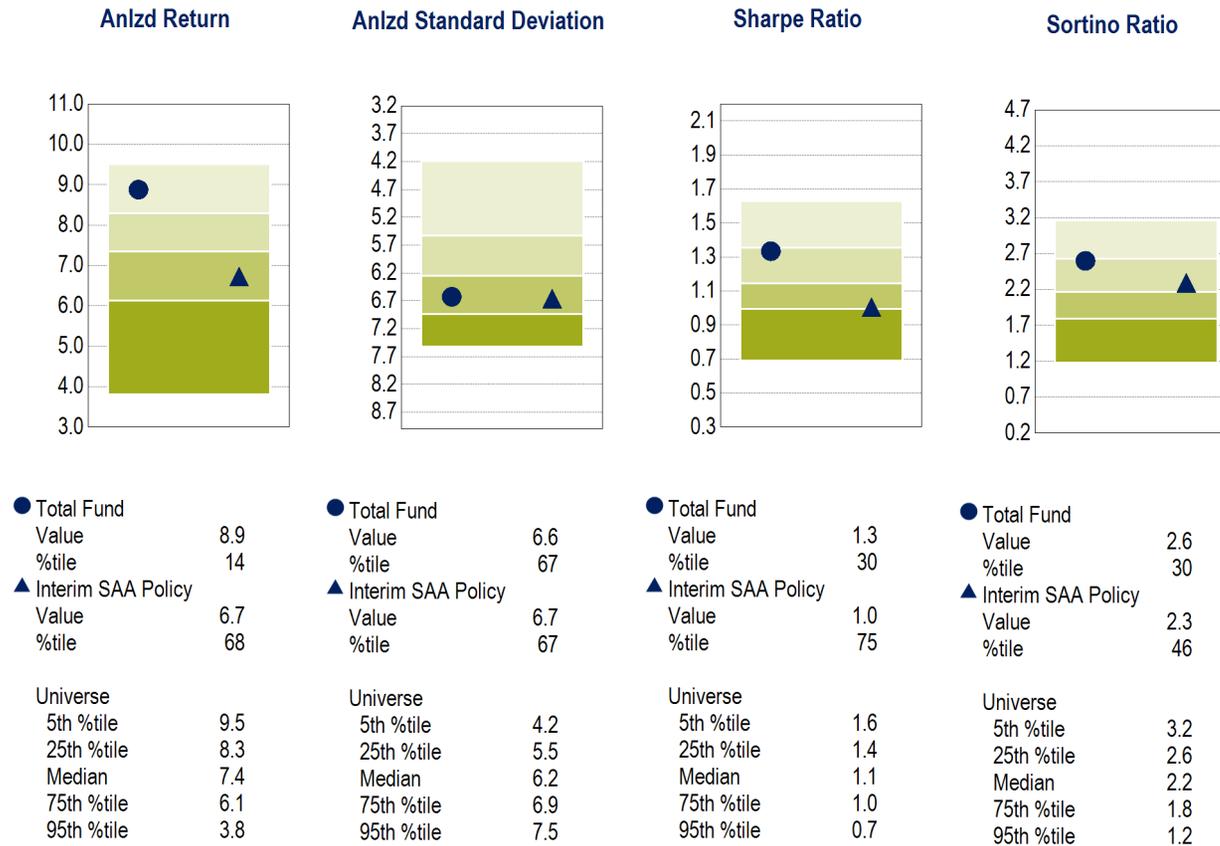
The InvestorForce Public Funds > \$1 Billion Universe contains 105 observations for the period ending December 31, 2015, with total assets of \$1.9 trillion.

Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

3 Year



Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

The InvestorForce Public Funds > \$1 Billion Universe contains 105 observations for the period ending December 31, 2015, with total assets of \$1.9 trillion.

Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

5 Year



Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

The InvestorForce Public Funds > \$1 Billion Universe contains 105 observations for the period ending December 31, 2015, with total assets of \$1.9 trillion.

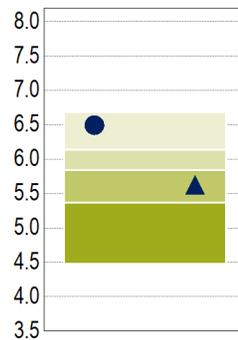
Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

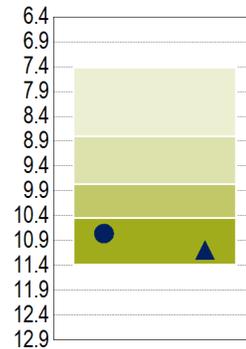
Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

10 Year

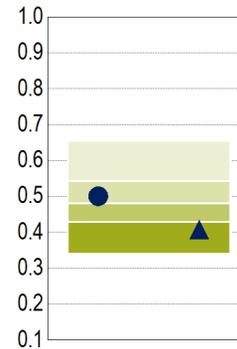
Anlzd Return



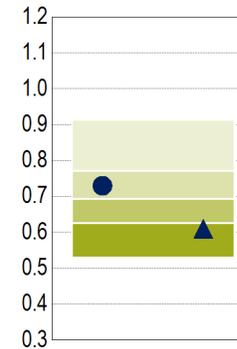
Anlzd Standard Deviation



Sharpe Ratio



Sortino Ratio



● Total Fund

Value 6.5
%tile 13

▲ Interim SAA Policy

Value 5.6
%tile 63

Universe

5th %tile 6.7
25th %tile 6.1
Median 5.9
75th %tile 5.4
95th %tile 4.5

● Total Fund

Value 10.8
%tile 86

▲ Interim SAA Policy

Value 11.1
%tile 89

Universe

5th %tile 7.4
25th %tile 8.8
Median 9.8
75th %tile 10.4
95th %tile 11.4

● Total Fund

Value 0.5
%tile 39

▲ Interim SAA Policy

Value 0.4
%tile 84

Universe

5th %tile 0.7
25th %tile 0.5
Median 0.5
75th %tile 0.4
95th %tile 0.3

● Total Fund

Value 0.7
%tile 34

▲ Interim SAA Policy

Value 0.6
%tile 84

Universe

5th %tile 0.9
25th %tile 0.8
Median 0.7
75th %tile 0.6
95th %tile 0.5

Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

The InvestorForce Public Funds > \$1 Billion Universe contains 105 observations for the period ending December 31, 2015, with total assets of \$1.9 trillion.

Composition of Interim SAA Policy can be found in the appendix.

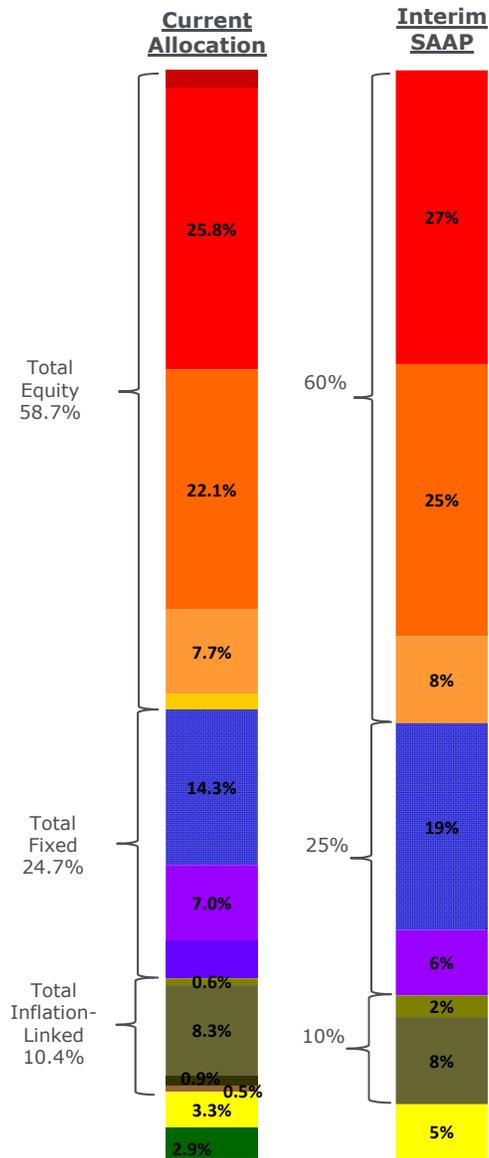
Independent Oversight/Compliance

Note: All of the data shown on the following pages is as of December 31, 2015 and reflects the deduction of investment manager fees, unless otherwise noted.



Arizona State Retirement System

SAA Policy Compliance



| | Current Mkt Value | Current Allocation | Interim SAAP | Interim SAAP Difference | Policy Range | Within Range | SAAP |
|---|-------------------------|--------------------|--------------|-------------------------|------------------|--------------|-------------|
| Total Domestic and International Equity | \$16,659,606,097 | 49.6% | 52% | -2.4% | | | 50% |
| <i>Equity Risk Factor Portfolio</i> | <i>\$562,019,772</i> | <i>1.7%</i> | <i>0%</i> | <i>1.7%</i> | | | <i>0%</i> |
| Domestic Equity¹ | \$8,678,821,543 | 25.8% | 27% | -1.2% | 16% - 36% | Yes | 26% |
| <i>U.S. Large Cap</i> | <i>\$6,729,564,209</i> | <i>20.0%</i> | <i>21%</i> | <i>-1.0%</i> | | | <i>20%</i> |
| <i>U.S. Mid Cap</i> | <i>\$1,015,270,164</i> | <i>3.0%</i> | <i>3%</i> | <i>0.0%</i> | | | <i>3%</i> |
| <i>U.S. Small Cap</i> | <i>\$933,986,739</i> | <i>2.8%</i> | <i>3%</i> | <i>-0.2%</i> | | | <i>3%</i> |
| International Equity¹ | \$7,418,764,782 | 22.1% | 25% | -2.9% | 14% - 34% | Yes | 24% |
| <i>Developed Large Cap</i> | <i>\$5,743,461,936</i> | <i>17.1%</i> | <i>18%</i> | <i>-0.9%</i> | | | <i>17%</i> |
| <i>Developed Small Cap</i> | <i>\$671,643,280</i> | <i>2.0%</i> | <i>2%</i> | <i>0.0%</i> | | | <i>2%</i> |
| <i>Emerging Markets</i> | <i>\$1,003,197,802</i> | <i>3.0%</i> | <i>5%</i> | <i>-2.0%</i> | | | <i>5%</i> |
| Private Equity² | \$2,595,648,652 | 7.7% | 8% | -0.3% | 6% - 10% | Yes | 8% |
| Opportunistic Equity^{2,4} | \$492,306,669 | 1.5% | 0% | 1.5% | | | 0% |
| Total Equity | \$19,747,561,418 | 58.7% | 60% | -1.3% | 48% - 65% | Yes | 58% |
| Public Markets Fixed Income¹ | \$4,801,990,242 | 14.3% | 19% | -4.7% | | | 15% |
| <i>Treasuries Long Duration</i> | <i>\$353,386,638</i> | <i>1.1%</i> | <i>0%</i> | <i>1.1%</i> | <i>0% - 10%</i> | <i>Yes</i> | <i>0%</i> |
| <i>Interest Rate Sensitive</i> | <i>\$3,441,507,011</i> | <i>10.2%</i> | <i>15%</i> | <i>-4.8%</i> | | | <i>11%</i> |
| <i>High Yield</i> | <i>\$1,007,096,593</i> | <i>3.0%</i> | <i>4%</i> | <i>-1.0%</i> | | | <i>4%</i> |
| Private Debt² | \$2,341,189,989 | 7.0% | 6% | 1.0% | 8% - 12% | No | 10% |
| Opportunistic Debt^{2,4} | \$1,159,052,291 | 3.4% | 0% | 3.4% | | | 0% |
| Total Fixed Income | \$8,302,232,522 | 24.7% | 25% | -0.3% | 18% - 35% | Yes | 25% |
| Commodities | \$207,223,345 | 0.6% | 2% | -1.4% | 0% - 4% | Yes | 2% |
| Real Estate² | \$2,802,448,299 | 8.3% | 8% | 0.3% | 8% - 12% | Yes | 10% |
| Infrastructure² | \$314,726,752 | 0.9% | 0% | 0.9% | 0% - 3% | Yes | 0% |
| Farmland and Timber² | \$182,760,364 | 0.5% | 0% | 0.5% | 0% - 3% | Yes | 0% |
| Opportunistic Inflation-Linked⁴ | \$0 | 0.0% | 0% | 0.0% | | | 0% |
| Total Inflation-Linked | \$3,507,158,761 | 10.4% | 10% | 0.4% | 10% - 16% | Yes | 12% |
| Multi-Asset Class Strategies | \$1,097,519,198 | 3.3% | 5% | -1.7% | 0% - 12% | Yes | 5% |
| Cash³ | \$966,194,256 | 2.9% | 0% | 2.9% | | | 0% |
| <i>Operating Cash (Non-Assetized)</i> | <i>\$57,137,677</i> | <i>0.2%</i> | <i>0%</i> | <i>0.2%</i> | | | <i>0%</i> |
| <i>Operating Cash (Assetized)</i> | <i>\$909,056,579</i> | <i>2.7%</i> | <i>0%</i> | <i>2.7%</i> | | | <i>0%</i> |
| Total | \$33,620,666,155 | 100% | 100% | 0% | | | 100% |

¹Domestic Equity, International Equity and Public Markets Fixed Income market values include residual values remaining in terminated manager accounts.

²Values shown for private markets portfolios include cash flows that occurred during 4Q 2015.

³Cash includes money for the upcoming monthly pension distribution.

⁴Aggregate Opportunistic asset classes not to exceed 10%.

Note: Interim SAA Policy includes proration of 4% Private Debt and 2% Real Estate, which are unfunded.

Policy Ranges shown are relative to the long-term SAAP, causing some asset classes to be out of range while implementation of the long-term SAAP is in process.

Market values include manager held cash.

Arizona State Retirement System

Asset Class Performance Summary - Public Markets

| | Market Value (\$) | % of Portfolio | 3 Mo (%) | Rank | FYTD (%) | Rank | 1 Yr (%) | Rank | 3 Yrs (%) | Rank | 5 Yrs (%) | Rank | 10 Yrs (%) | Rank | Inception (%) | Since |
|--|-----------------------|-------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|---------------|-----------|------------------|---------------|
| Total Fund | 33,620,666,155 | 100.0 | 2.7 | -- | -2.0 | -- | 1.3 | -- | 8.3 | -- | 7.8 | -- | 6.1 | -- | 9.7 | Jul-75 |
| <i>Interim SAA Policy</i> | | | <u>1.6</u> | -- | <u>-3.4</u> | -- | <u>-0.4</u> | -- | <u>6.7</u> | -- | <u>6.9</u> | -- | <u>5.6</u> | -- | <u>9.4</u> | <i>Jul-75</i> |
| Over/Under | | | 1.1 | | 1.4 | | 1.7 | | 1.6 | | 0.9 | | 0.5 | | 0.3 | |
| <i>Actual Benchmark</i> | | | 1.8 | -- | <u>-3.3</u> | -- | <u>0.0</u> | -- | <u>7.4</u> | -- | <u>7.2</u> | -- | <u>5.6</u> | -- | -- | <i>Jul-75</i> |
| Total Domestic and International Equity¹ | 16,659,606,097 | 49.6 | 5.1 | -- | -4.0 | -- | -0.9 | -- | 9.8 | -- | 8.4 | -- | 5.9 | -- | 6.4 | Jan-98 |
| <i>ASRS Custom Total Equity Benchmark</i> | | | <u>5.1</u> | -- | <u>-4.5</u> | -- | <u>-1.1</u> | -- | <u>9.6</u> | -- | <u>8.4</u> | -- | <u>6.1</u> | -- | <u>5.7</u> | <i>Jan-98</i> |
| Over/Under | | | 0.0 | | 0.5 | | 0.2 | | 0.2 | | 0.0 | | -0.2 | | 0.7 | |
| Total Domestic Equity | 8,678,821,543 | 25.8 | 6.0 | 27 | -1.2 | 24 | 0.8 | 35 | 14.7 | 34 | 12.1 | 32 | 7.8 | 40 | 11.1 | Jul-75 |
| <i>ASRS Custom Domestic Equity Benchmark</i> | | | <u>6.2</u> | 24 | <u>-1.3</u> | 24 | <u>0.9</u> | 34 | <u>14.8</u> | 33 | <u>12.3</u> | 28 | <u>7.7</u> | 43 | <u>11.2</u> | <i>Jul-75</i> |
| Over/Under | | | -0.2 | | 0.1 | | -0.1 | | -0.1 | | -0.2 | | 0.1 | | -0.1 | |
| <i>eA All US Equity Net Median</i> | | | 4.4 | | -4.7 | | -1.3 | | 13.4 | | 10.9 | | 7.4 | | 12.6 | <i>Jul-75</i> |
| Total International Equity | 7,418,764,782 | 22.1 | 3.8 | 71 | -7.6 | 71 | -2.2 | 65 | 2.7 | 76 | 2.1 | 75 | 3.0 | 81 | 5.8 | Apr-87 |
| <i>ASRS Custom Int'l Equity Benchmark</i> | | | <u>4.0</u> | 68 | <u>-8.0</u> | 74 | <u>-3.2</u> | 72 | <u>2.8</u> | 76 | <u>2.2</u> | 75 | <u>3.7</u> | 67 | <u>5.5</u> | <i>Apr-87</i> |
| Over/Under | | | -0.2 | | 0.4 | | 1.0 | | -0.1 | | -0.1 | | -0.7 | | 0.3 | |
| <i>eA All ACWI ex-US Equity Net Median</i> | | | 4.7 | | -6.0 | | -0.4 | | 4.9 | | 3.6 | | 4.4 | | 7.4 | <i>Apr-87</i> |
| Total Public Markets Fixed Income | 4,801,990,242 | 14.3 | -0.6 | 63 | -0.4 | 69 | 0.2 | 57 | 0.7 | 82 | 3.1 | 60 | 4.7 | 45 | 8.2 | Jan-00 |
| <i>ASRS Custom Public Markets Fixed Income Benchmark</i> | | | <u>-1.0</u> | 82 | <u>-1.4</u> | 78 | <u>-1.8</u> | 80 | <u>0.0</u> | 97 | <u>2.5</u> | 73 | <u>4.1</u> | 61 | -- | <i>Jul-75</i> |
| Over/Under | | | 0.4 | | 1.0 | | 2.0 | | 0.7 | | 0.6 | | 0.6 | | -- | |
| <i>eA All US Fixed Inc Net Median</i> | | | -0.5 | | 0.1 | | 0.4 | | 1.5 | | 3.5 | | 4.6 | | 8.0 | <i>Jul-75</i> |
| Total Inflation-Linked Assets | 207,223,345 | 0.6 | -10.9 | -- | -24.6 | -- | -26.0 | -- | -17.1 | -- | -12.1 | -- | -- | -- | -7.7 | Feb-10 |
| <i>ASRS Custom Inflation-Linked Benchmark</i> | | | <u>-10.5</u> | -- | <u>-23.5</u> | -- | <u>-24.7</u> | -- | <u>-17.3</u> | -- | <u>-13.3</u> | -- | <u>-3.2</u> | -- | <u>-8.7</u> | <i>Feb-10</i> |
| Over/Under | | | -0.4 | | -1.1 | | -1.3 | | 0.2 | | 1.2 | | -- | | 1.0 | |
| Total Multi-Asset Class Strategies | 1,097,519,198 | 3.3 | 0.6 | 80 | -4.9 | 62 | -1.4 | 33 | 7.1 | 4 | 7.7 | 1 | 6.9 | 2 | 7.1 | Jan-04 |
| <i>Multi-Asset Class Strategies Custom Benchmark</i> | | | <u>0.0</u> | 83 | <u>-1.0</u> | 14 | <u>0.3</u> | 9 | <u>7.6</u> | 2 | <u>7.4</u> | 2 | <u>5.5</u> | 29 | <u>6.0</u> | <i>Jan-04</i> |
| Over/Under | | | 0.6 | | -3.9 | | -1.7 | | -0.5 | | 0.3 | | 1.4 | | 1.1 | |
| <i>eA Global TAA Net Median</i> | | | 2.3 | | -3.7 | | -3.0 | | 3.4 | | 3.9 | | 5.0 | | 6.4 | <i>Jan-04</i> |
| Operating Cash (Assetized) | 909,056,579 | 2.7 | -1.8 | -- | -6.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -1.1 | Feb-15 |
| <i>ASRS Cash Assetization Custom Benchmark</i> | | | <u>-2.6</u> | -- | <u>-10.5</u> | -- | <u>-8.7</u> | -- | -- | -- | -- | -- | -- | -- | <u>-7.7</u> | <i>Feb-15</i> |
| Over/Under | | | 0.8 | | 4.5 | | -- | | -- | | -- | | -- | | 6.6 | |

¹Performance of ASRS Total Domestic and International Equity includes the performance of the ASRS Domestic and International Equity asset classes and the Equity Risk Factor Portfolio with an inception date of 6/1/2013. NEPC began calculating Total Domestic and International Equity performance in January 2009. Monthly performance data from January 1998 - December 2008 was provided by State Street.

Note: Performance, ranks and medians are based on net of fee performance data. Rankings are from highest (1) to lowest (100) in the eVestment Universe.

Universe shown for Total Public Markets Fixed Income includes all U.S. fixed income strategies and does not accurately represent the exposures of the ASRS Public Markets Fixed Income allocation, which has included allocations ranging from 10% - 25% to emerging markets debt historically.

Composition of Interim SAA Policy and ASRS Custom Asset Class Benchmarks can be found in the appendix.

Arizona State Retirement System

Asset Class Performance Summary - Private Markets

| | Market Value (\$) | % of Portfolio | 3 Mo (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | Inception (%) | Since | | | | |
|---|-----------------------|-------------------|--------------|-------------|--------------|--------------|------------------|---------------|------------|-----------|------------|---------------|
| Total Fund | 33,620,666,155 | 100.0 | 2.7 | -- | 1.3 | -- | 8.3 | -- | 7.8 | -- | 9.7 | Jul-75 |
| <i>Interim SAA Policy</i> | | | <u>1.6</u> | -- | <u>-0.4</u> | -- | <u>6.7</u> | -- | <u>6.9</u> | -- | <u>9.4</u> | <i>Jul-75</i> |
| Over/Under | | | 1.1 | | 1.7 | | 1.6 | | 0.9 | | 0.3 | |
| <i>Actual Benchmark</i> | | | 1.8 | -- | 0.0 | -- | 7.4 | -- | 7.2 | -- | -- | <i>Jul-75</i> |
| Total Private Equity | 2,612,677,353 | 7.8 | -0.7 | 5.4 | 12.6 | 13.3 | 11.4 | Oct-07 | | | | |
| <i>Russell 2000 1 QTR Lagged</i> | | | <u>-12.3</u> | <u>-0.8</u> | <u>8.6</u> | <u>9.4</u> | <u>9.5</u> | <i>Oct-07</i> | | | | |
| Over/Under | | | 11.6 | 6.2 | 4.0 | 3.9 | 1.9 | | | | | |
| Total Opportunistic Equity¹ | 482,107,520 | 1.4 | 0.3 | 12.0 | 23.2 | -- | 23.9 | Apr-11 | | | | |
| Total Private Debt | 1,994,407,118 | 5.9 | 1.8 | 8.7 | 11.3 | -- | 11.4 | Jul-12 | | | | |
| <i>S&P/LSTA Leveraged Loan Index + 250 bps 1 QTR Lagged</i> | | | <u>-0.8</u> | <u>3.3</u> | <u>4.7</u> | -- | <u>4.9</u> | <i>Jul-12</i> | | | | |
| Over/Under | | | 2.6 | 5.4 | 6.6 | -- | 6.5 | | | | | |
| Total Opportunistic Debt¹ | 1,117,410,462 | 3.3 | -2.5 | -0.1 | 6.5 | 7.2 | 10.3 | Jan-08 | | | | |
| Total Real Estate | 2,706,475,430 | 8.1 | 3.6 | 14.8 | 14.0 | 13.9 | 7.5 | Oct-05 | | | | |
| <i>NCREIF ODCE 1 QTR Lagged (net)</i> | | | <u>3.4</u> | <u>13.9</u> | <u>12.4</u> | <u>12.9</u> | <u>6.8</u> | <i>Oct-05</i> | | | | |
| Over/Under | | | 0.2 | 0.9 | 1.6 | 1.0 | 0.7 | | | | | |
| Total Farmland and Timber | 183,239,540 | 0.5 | 0.2 | 3.6 | -- | -- | 2.8 | Jul-13 | | | | |
| <i>CPI ex-Food and Energy + 350 bps 1 QTR Lagged</i> | | | <u>1.3</u> | <u>5.5</u> | -- | -- | <u>5.5</u> | <i>Jul-13</i> | | | | |
| Over/Under | | | -1.1 | -1.9 | -- | -- | -2.7 | | | | | |
| Total Infrastructure | 314,726,752 | 0.9 | 2.1 | -- | -- | -- | 4.9 | Dec-14 | | | | |
| <i>CPI ex-Food and Energy + 350 bps 1 QTR Lagged</i> | | | <u>1.3</u> | -- | -- | -- | <u>5.4</u> | <i>Dec-14</i> | | | | |
| Over/Under | | | 0.8 | -- | -- | -- | -0.5 | | | | | |

¹Net absolute rate of return expectations range from 10-14% per annum.

Note: Performance in private markets asset classes is based on net of fee dollar-weighted (IRR) performance data.

Due to the drawdown nature of private markets portfolios in which the investment managers call capital over time, dollar-weighted performance, or internal rate of return, is a more appropriate measure of ASRS private markets portfolios.

Performance data for Total Private Equity, Total Opportunistic Equity, Total Private Debt, Total Opportunistic Debt, Total Real Estate, Total Farmland and Timber, and Total Infrastructure and corresponding benchmarks is lagged by one quarter. Performance data and market values provided by State Street.

Prior to 3Q 2012, the performance of the Total Private Debt and Total Opportunistic Debt asset classes was reported in aggregate. Effective 6/30/2012, the Fund's allocations to Private Debt and Opportunistic Debt were separated and will be reported separately going forward.

Composition of Interim SAA Policy can be found in the appendix.

Arizona State Retirement System

Public Market Asset Class Analysis

3 Years Ending December 31, 2015

| | % of Tot | Anlzd Ret | Rank | Anlzd Std Dev | Rank | Tracking Error | Rank | Info Ratio | Rank | Anlzd AJ | Rank | Beta | Sharpe Ratio |
|---|----------|-----------|------|---------------|------|----------------|------|------------|------|----------|------|------|--------------|
| Total Fund | 100.0% | 8.3% | -- | 6.6% | -- | 1.2% | -- | 1.3 | -- | 1.7% | -- | 1.0 | 1.2 |
| Interim SAA Policy | -- | 6.7% | -- | 6.7% | -- | -- | -- | -- | -- | -- | -- | -- | 1.0 |
| Total Domestic and International Equity | 49.6% | 9.8% | -- | 10.6% | -- | 0.6% | -- | 0.4 | -- | 0.4% | -- | 1.0 | 0.9 |
| ASRS Custom Total Equity Benchmark | -- | 9.6% | -- | 10.8% | -- | -- | -- | -- | -- | -- | -- | -- | 0.9 |
| Total Domestic Equity | 25.8% | 14.7% | 34 | 10.7% | 19 | 0.5% | 1 | -0.3 | -- | 0.0% | 34 | 1.0 | 1.4 |
| ASRS Custom Domestic Equity Benchmark | -- | 14.8% | 33 | 10.8% | 22 | -- | -- | -- | -- | -- | 34 | -- | 1.4 |
| Total International Equity | 22.1% | 2.7% | 76 | 11.9% | 57 | 0.7% | 1 | -0.1 | -- | 0.0% | 76 | 1.0 | 0.2 |
| ASRS Custom Int'l Equity Benchmark | -- | 2.8% | 76 | 12.2% | 69 | -- | -- | -- | -- | -- | 76 | -- | 0.2 |
| Total Public Markets Fixed Income | 14.3% | 0.7% | 82 | 3.8% | 73 | 0.7% | 1 | 1.0 | 17 | 0.7% | 81 | 1.0 | 0.2 |
| ASRS Custom Public Markets Fixed Income Benchmark | -- | 0.0% | 97 | 3.7% | 72 | -- | -- | -- | -- | -- | 96 | -- | 0.0 |
| Total Inflation-Linked Assets | 0.6% | -17.1% | -- | 13.1% | -- | 2.3% | -- | 0.1 | -- | 0.4% | -- | 1.0 | -1.3 |
| ASRS Custom Inflation-Linked Benchmark | -- | -17.3% | -- | 12.7% | -- | -- | -- | -- | -- | -- | -- | -- | -1.4 |
| Total Multi-Asset Class Strategies | 3.3% | 7.1% | 4 | 8.1% | 62 | 3.9% | 2 | -0.2 | -- | -2.0% | 28 | 1.2 | 0.9 |
| Multi-Asset Class Strategies Custom Benchmark | -- | 7.6% | 2 | 6.0% | 24 | -- | -- | -- | -- | -- | 16 | -- | 1.3 |

Note: Performance is reported net of fees.

Underlying composites do not add up to 100% because the chart excludes private market composites.

Ranks for statistics shown above are based on the respective universe against which the portfolio is ranked on the asset class performance summary that precedes this section of the analysis.

Rankings are from highest (1) to lowest (100) in the eVestment Universe.

Composition of Interim SAA Policy and ASRS Custom Benchmarks can be found in the appendix.

Arizona State Retirement System

Public Market Asset Class Analysis

5 Years Ending December 31, 2015

| | % of Tot | Anlzd Ret | Rank | Anlzd Std Dev | Rank | Tracking Error | Rank | Info Ratio | Rank | Anlzd AJ | Rank | Beta | Sharpe Ratio |
|---|----------|-----------|------|---------------|------|----------------|------|------------|------|----------|------|------|--------------|
| Total Fund | 100.0% | 7.8% | -- | 7.9% | -- | 1.1% | -- | 0.8 | -- | 1.1% | -- | 1.0 | 1.0 |
| Interim SAA Policy | -- | 6.9% | -- | 8.0% | -- | -- | -- | -- | -- | -- | -- | -- | 0.9 |
| Total Domestic and International Equity | 49.6% | 8.4% | -- | 12.5% | -- | 0.6% | -- | -0.1 | -- | 0.1% | -- | 1.0 | 0.7 |
| ASRS Custom Total Equity Benchmark | -- | 8.4% | -- | 12.7% | -- | -- | -- | -- | -- | -- | -- | -- | 0.7 |
| Total Domestic Equity | 25.8% | 12.1% | 32 | 12.2% | 25 | 0.5% | 1 | -0.4 | -- | -0.2% | 31 | 1.0 | 1.0 |
| ASRS Custom Domestic Equity Benchmark | -- | 12.3% | 28 | 12.2% | 25 | -- | -- | -- | -- | -- | 28 | -- | 1.0 |
| Total International Equity | 22.1% | 2.1% | 75 | 14.4% | 36 | 0.8% | 1 | -0.1 | -- | 0.0% | 75 | 1.0 | 0.1 |
| ASRS Custom Int'l Equity Benchmark | -- | 2.2% | 75 | 14.9% | 59 | -- | -- | -- | -- | -- | 75 | -- | 0.1 |
| Total Public Markets Fixed Income | 14.3% | 3.1% | 60 | 3.3% | 65 | 0.6% | 1 | 1.2 | 6 | 0.6% | 89 | 1.0 | 0.9 |
| ASRS Custom Public Markets Fixed Income Benchmark | -- | 2.5% | 73 | 3.2% | 63 | -- | -- | -- | -- | -- | 97 | -- | 0.8 |
| Total Inflation-Linked Assets | 0.6% | -12.1% | -- | 14.5% | -- | 2.4% | -- | 0.5 | -- | 1.1% | -- | 1.0 | -0.8 |
| ASRS Custom Inflation-Linked Benchmark | -- | -13.3% | -- | 14.5% | -- | -- | -- | -- | -- | -- | -- | -- | -0.9 |
| Total Multi-Asset Class Strategies | 3.3% | 7.7% | 1 | 8.8% | 64 | 3.2% | 1 | 0.1 | 1 | -0.1% | 26 | 1.0 | 0.9 |
| Multi-Asset Class Strategies Custom Benchmark | -- | 7.4% | 2 | 7.8% | 41 | -- | -- | -- | -- | -- | 25 | -- | 0.9 |

Note: Performance is reported net of fees.

Underlying composites do not add up to 100% because the chart excludes private market composites.

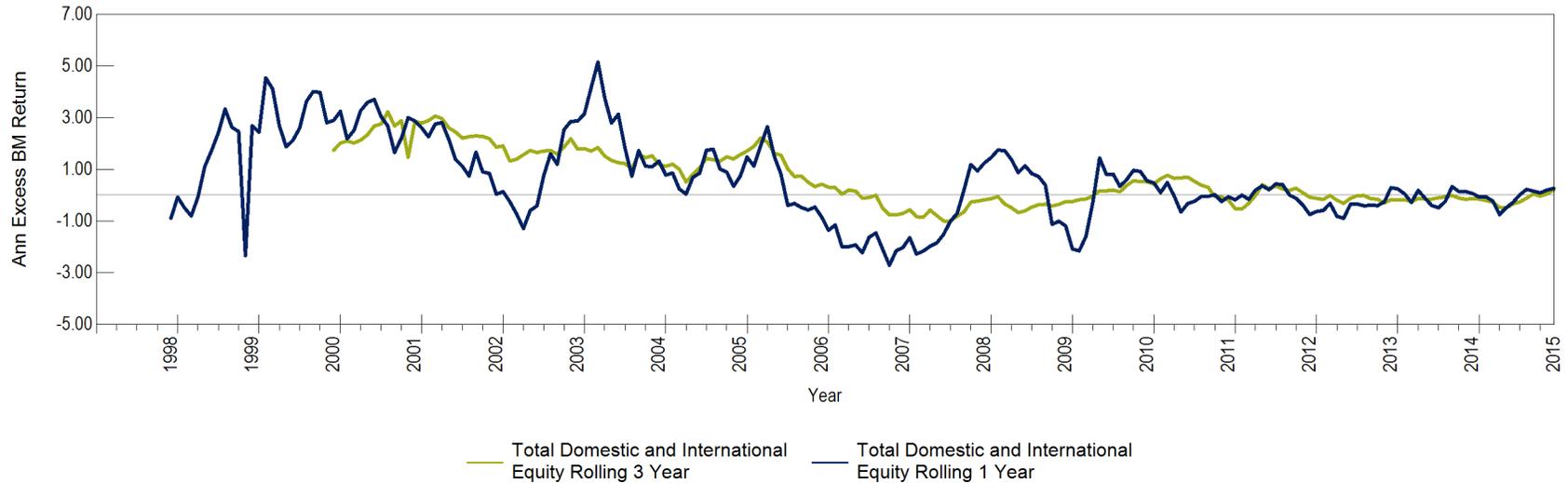
Ranks for statistics shown above are based on the respective universe against which the portfolio is ranked on the asset class performance summary that precedes this section of the analysis.

Rankings are from highest (1) to lowest (100) in the eInvestment Universe.

Composition of Interim SAA Policy and ASRS Custom Benchmarks can be found in the appendix.

Asset Class Analysis - Total Domestic and International Equity

Rolling Annual Excess Benchmark Return

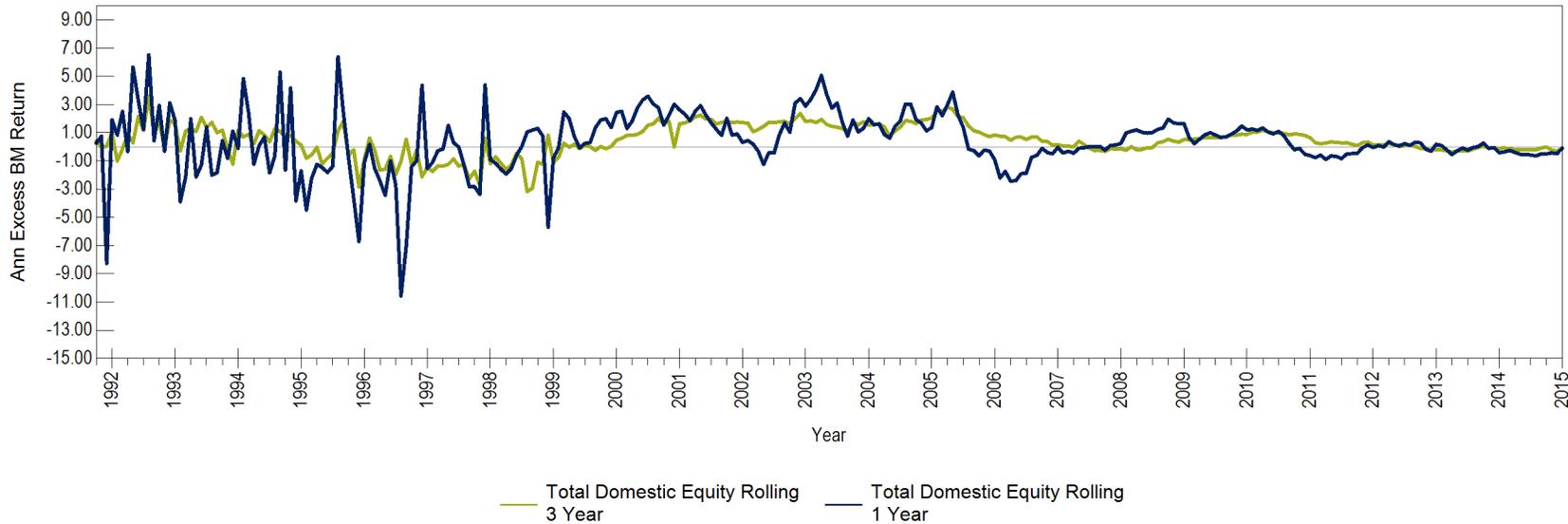


Rolling Information Ratio

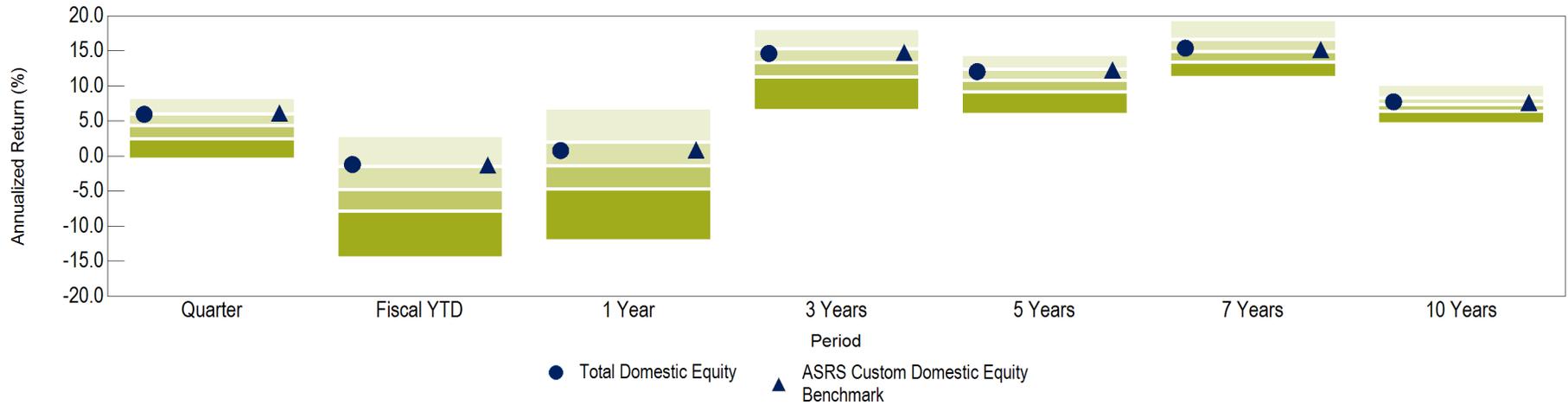


Asset Class Analysis - Total Domestic Equity

Rolling Annual Excess Benchmark Return

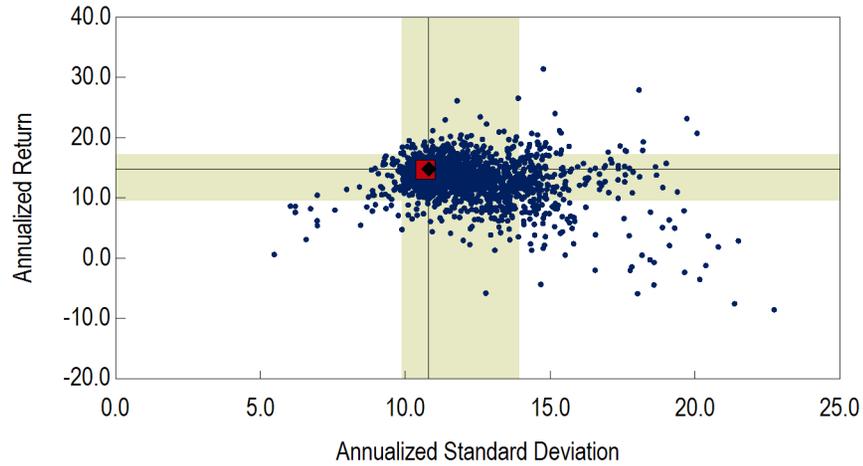


eA All US Equity Net Accounts



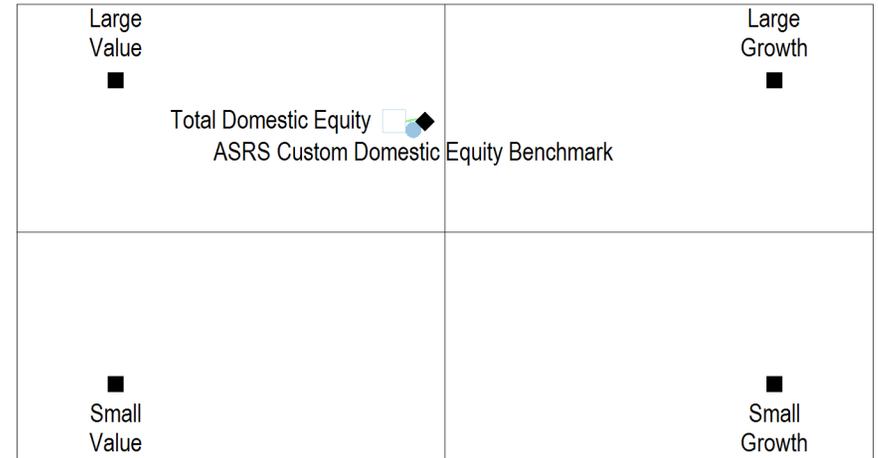
Asset Class Analysis - Total Domestic Equity

3 Year Risk Return

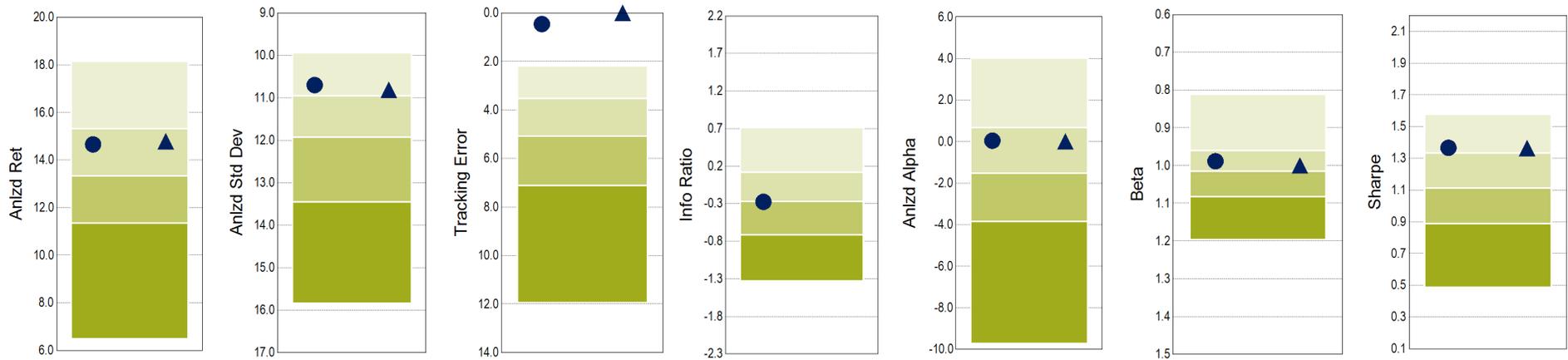


- Total Domestic Equity
- ◆ ASRS Custom Domestic Equity Benchmark
- 68% Confidence Interval
- eA All US Equity Net

3 Year Style Map



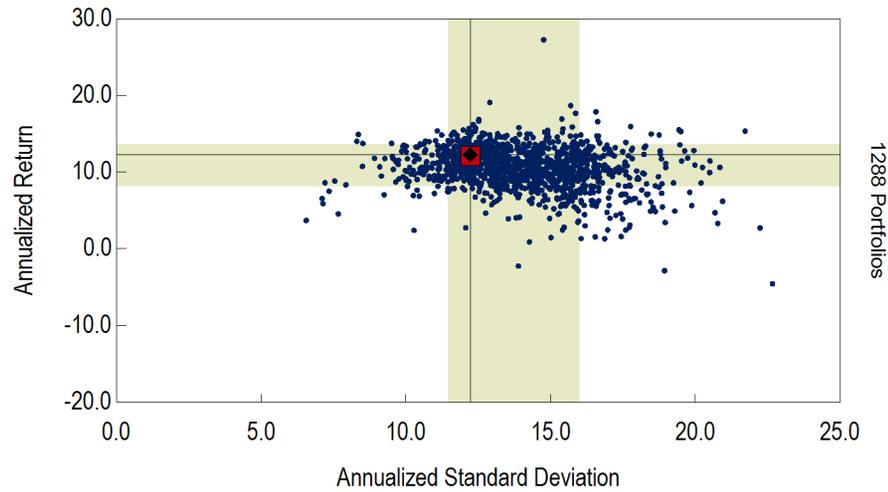
- First Rolling Period
- ◆ Last Rolling Period



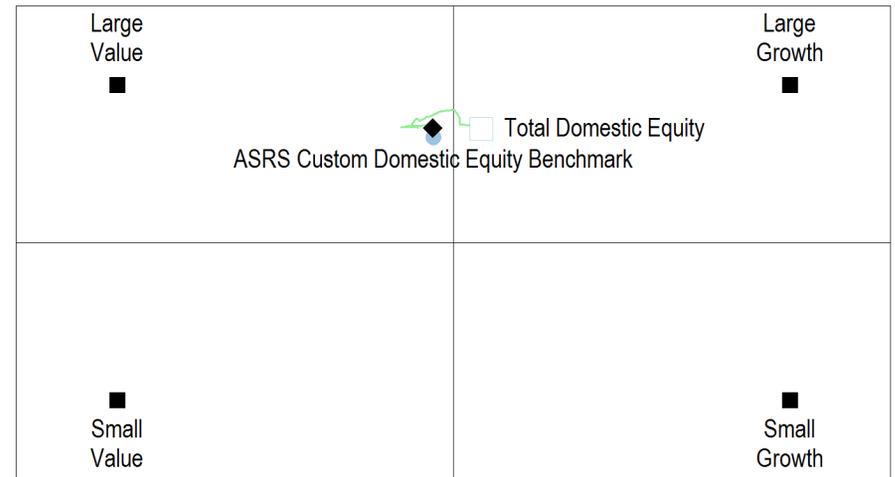
- Total Domestic Equity
- ▲ ASRS Custom Domestic Equity Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Asset Class Analysis - Total Domestic Equity

5 Year Risk Return

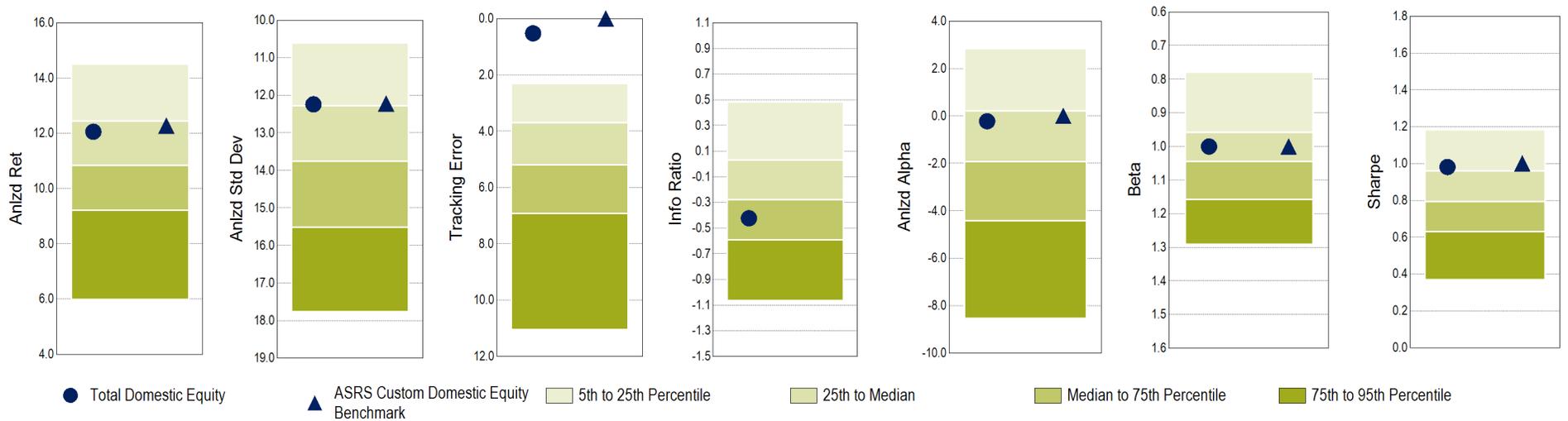


5 Year Style Map



- Total Domestic Equity
- ◆ ASRS Custom Domestic Equity Benchmark
- 68% Confidence Interval
- eA All US Equity Net

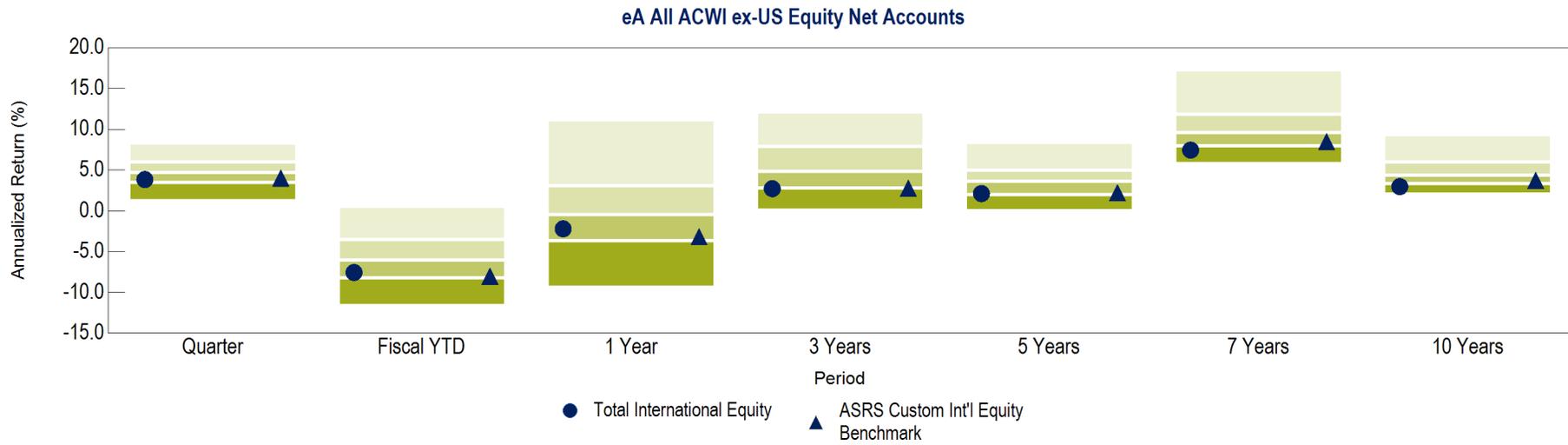
- First Rolling Period
- ◆ Last Rolling Period



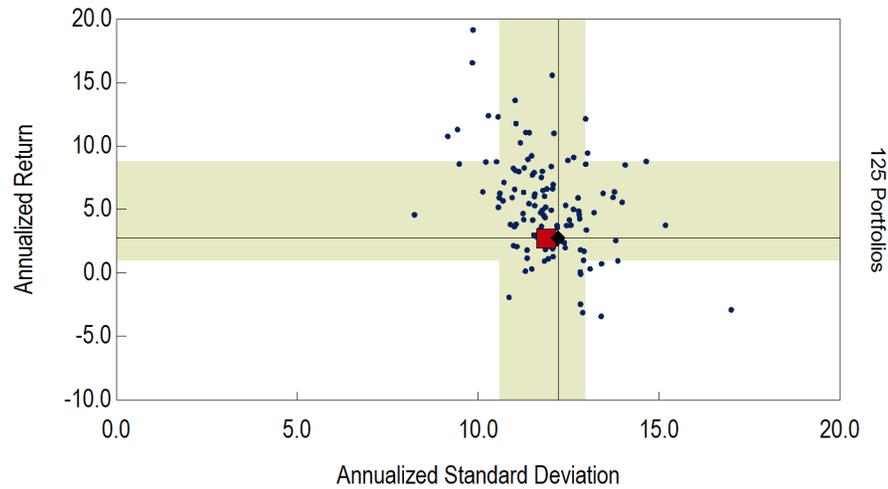
- Total Domestic Equity
- ▲ ASRS Custom Domestic Equity Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Asset Class Analysis - Total International Equity

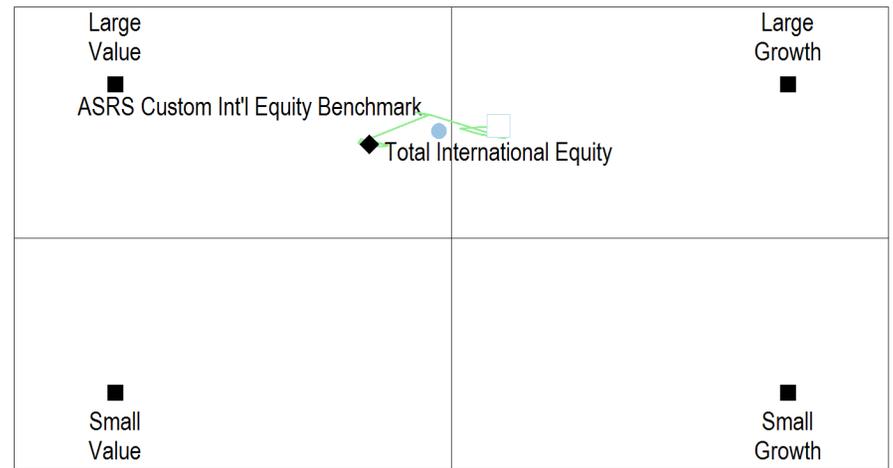
Rolling Annual Excess Benchmark Return



3 Year Risk Return

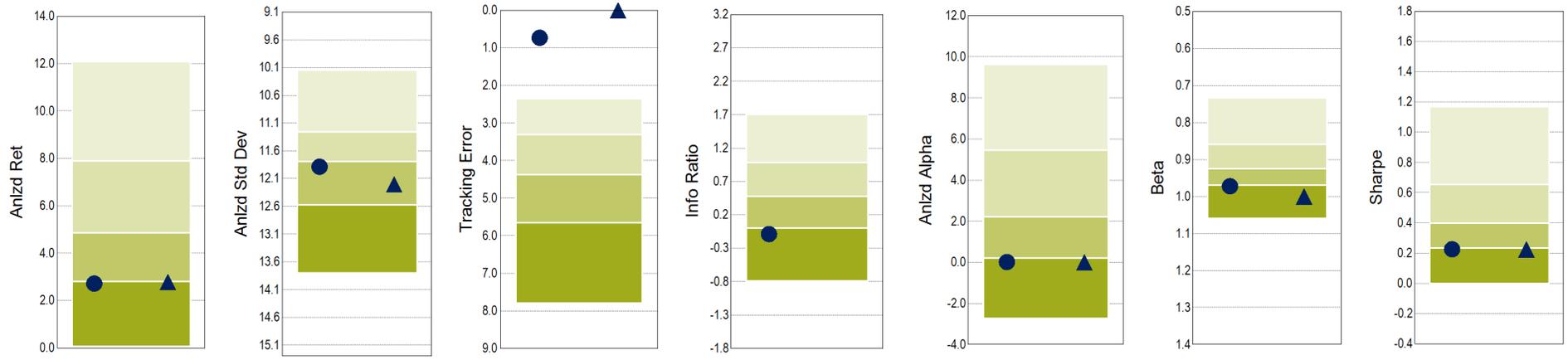


3 Year Style Map



- Total International Equity
- ◆ ASRS Custom Int'l Equity Benchmark
- 68% Confidence Interval
- eA All ACWI ex-US Equity Net

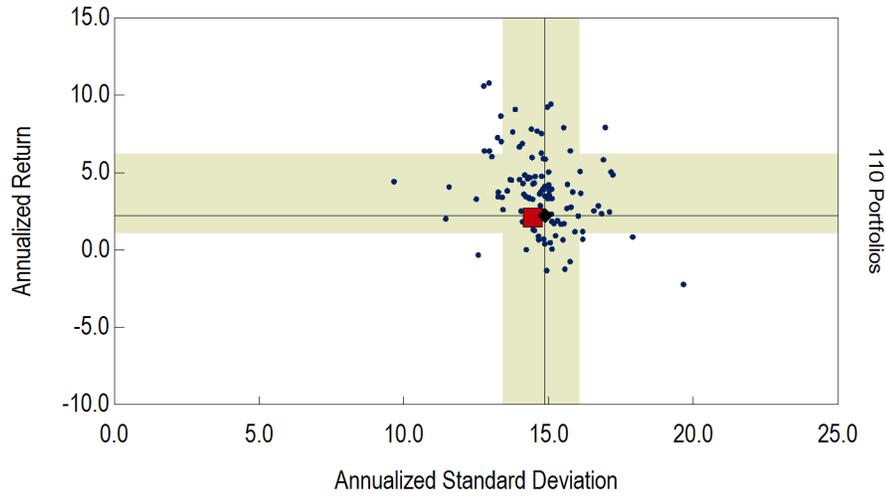
- First Rolling Period
- ◆ Last Rolling Period



- Total International Equity
- ▲ ASRS Custom Int'l Equity Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

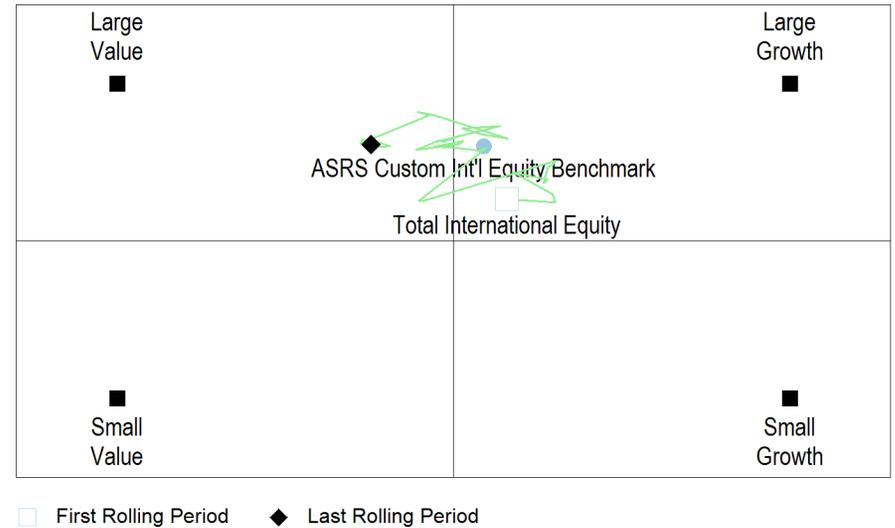
Asset Class Analysis - Total International Equity

5 Year Risk Return

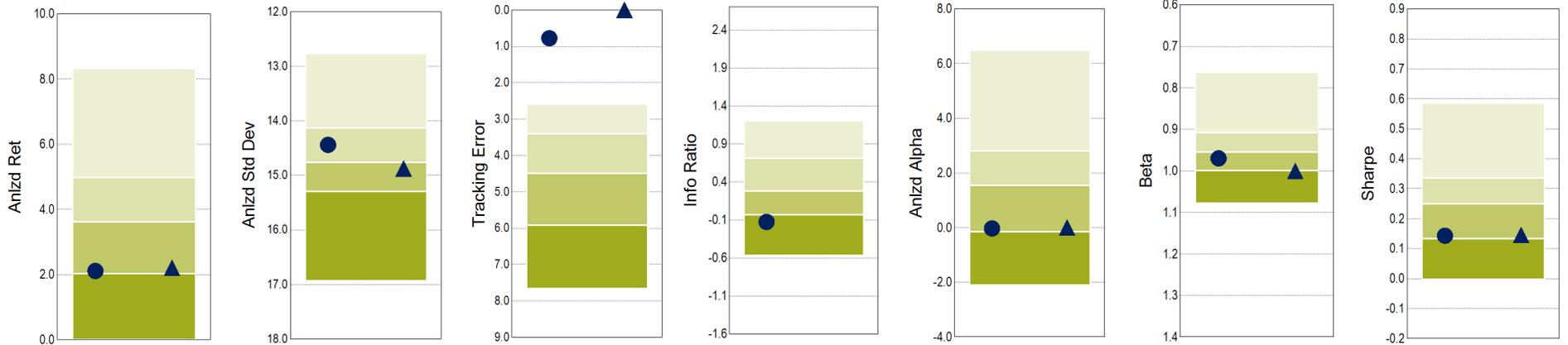


- Total International Equity
- ◆ ASRS Custom Int'l Equity Benchmark
- 68% Confidence Interval
- eA All ACWI ex-US Equity Net

5 Year Style Map



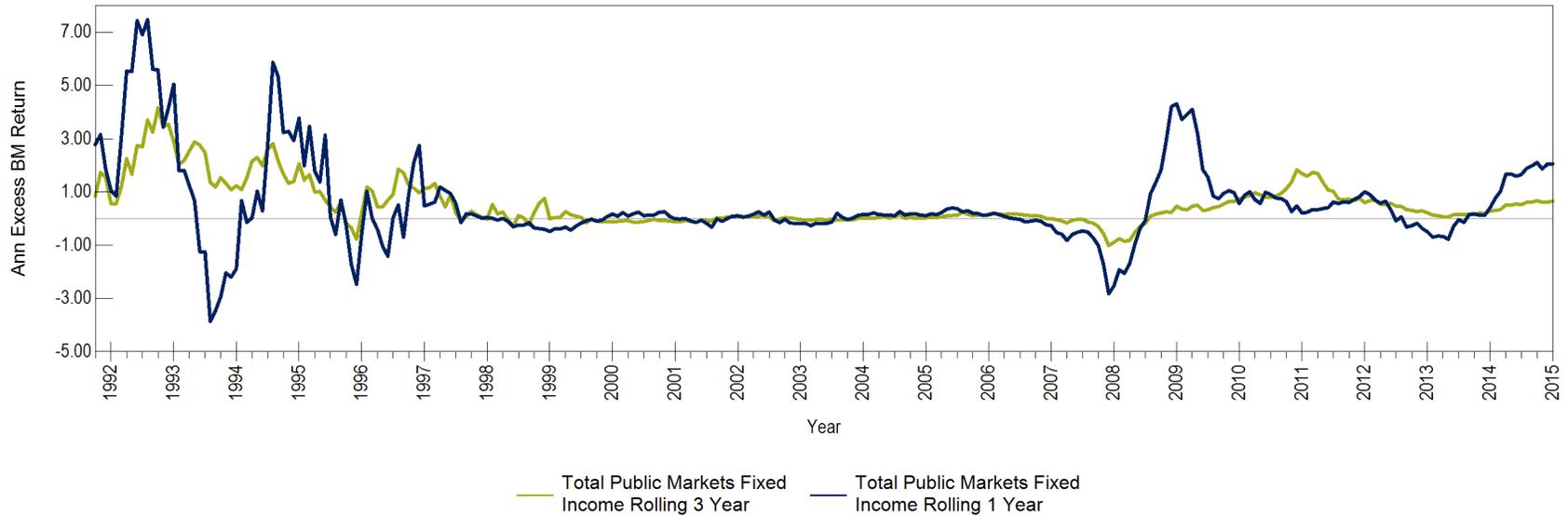
- First Rolling Period
- ◆ Last Rolling Period



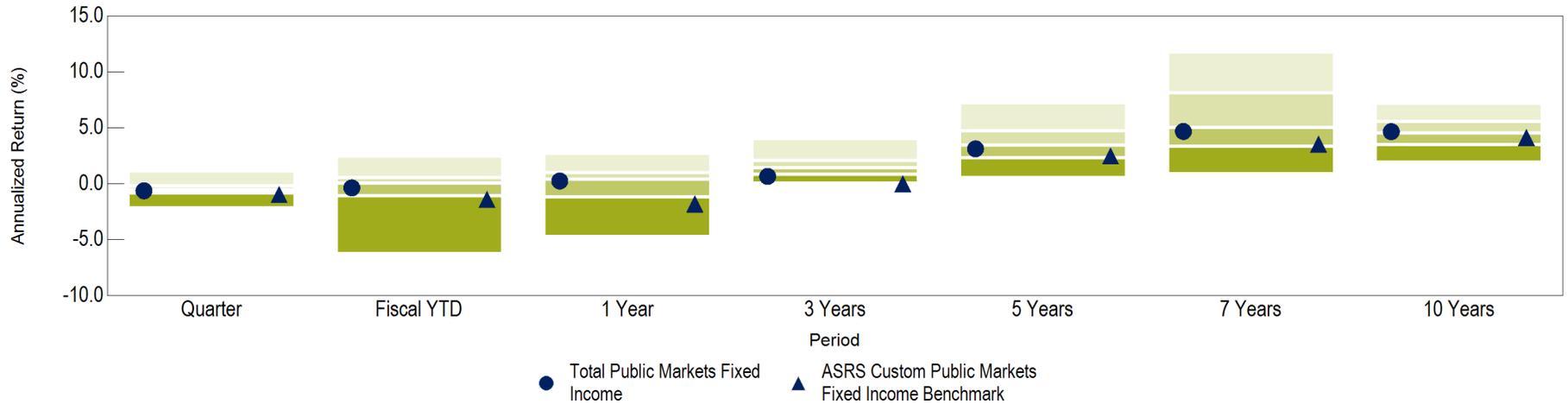
- Total International Equity
- ▲ ASRS Custom Int'l Equity Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Asset Class Analysis - Total Public Markets Fixed Income

Rolling Annual Excess Benchmark Return

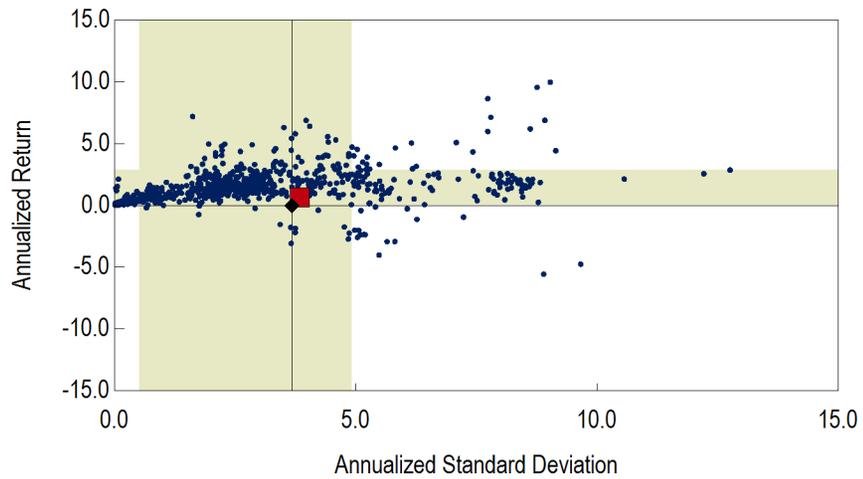


eA All US Fixed Inc Net Accounts



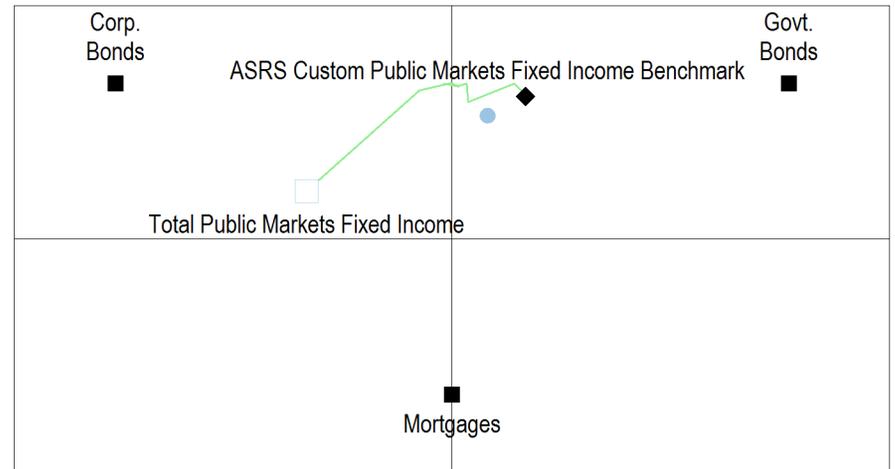
Asset Class Analysis - Total Public Markets Fixed Income

3 Year Risk Return

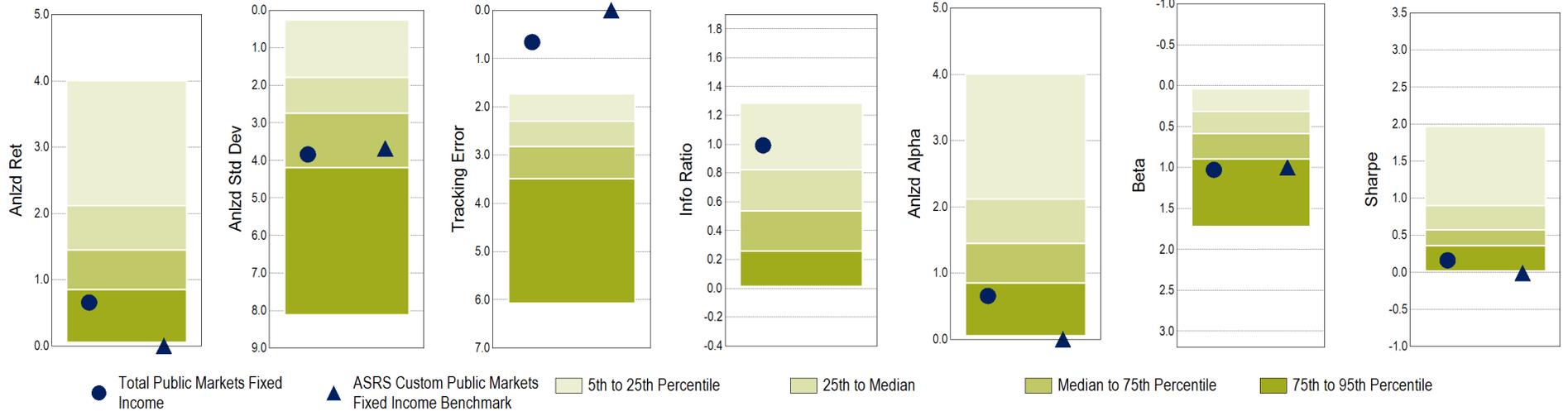


- Total Public Markets Fixed Income
- ◆ ASRS Custom Public Markets Fixed Income Benchmark
- 68% Confidence Interval
- eA All US Fixed Inc Net

3 Year Style Map

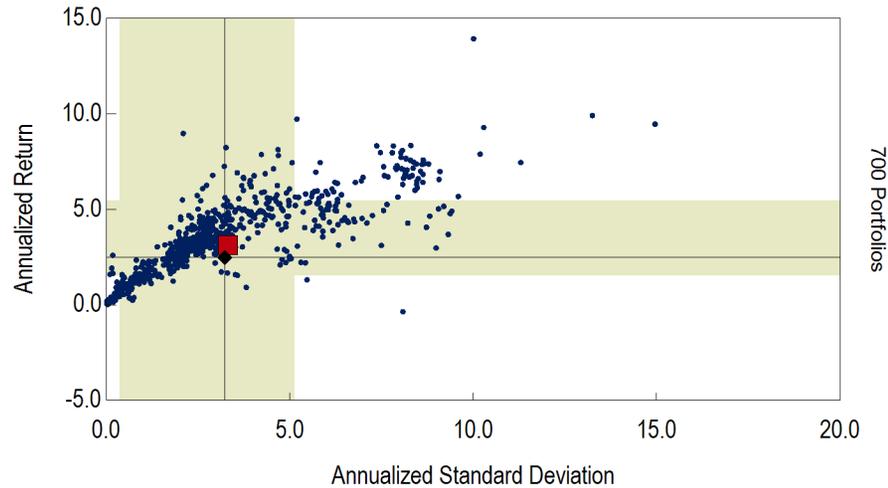


- First Rolling Period
- ◆ Last Rolling Period



- Total Public Markets Fixed Income
- ▲ ASRS Custom Public Markets Fixed Income Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

5 Year Risk Return

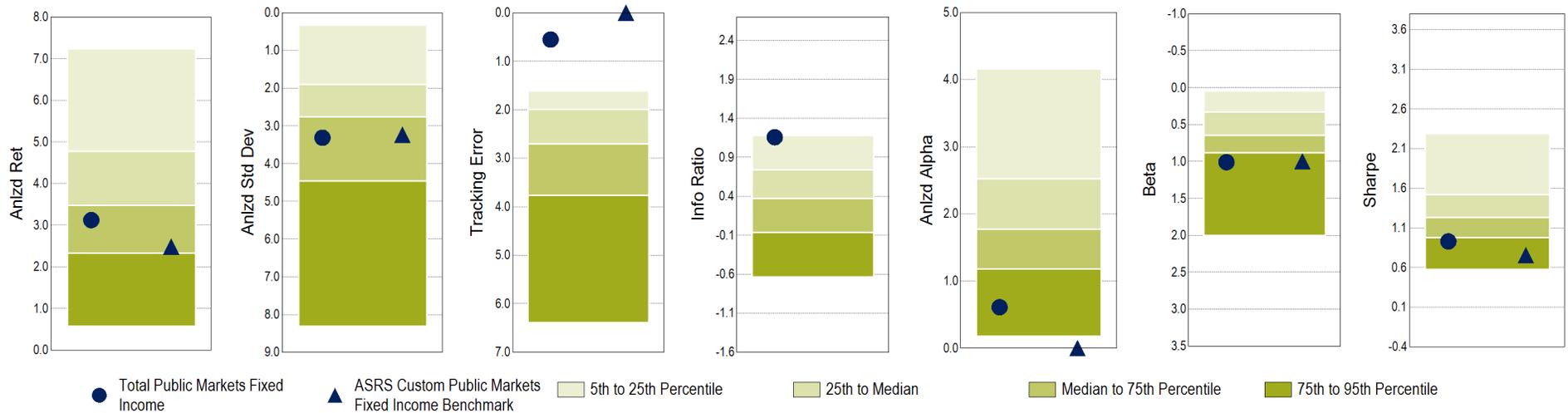


5 Year Style Map



- Total Public Markets Fixed Income
- ◆ ASRS Custom Public Markets Fixed Income Benchmark
- 68% Confidence Interval
- eA All US Fixed Inc Net

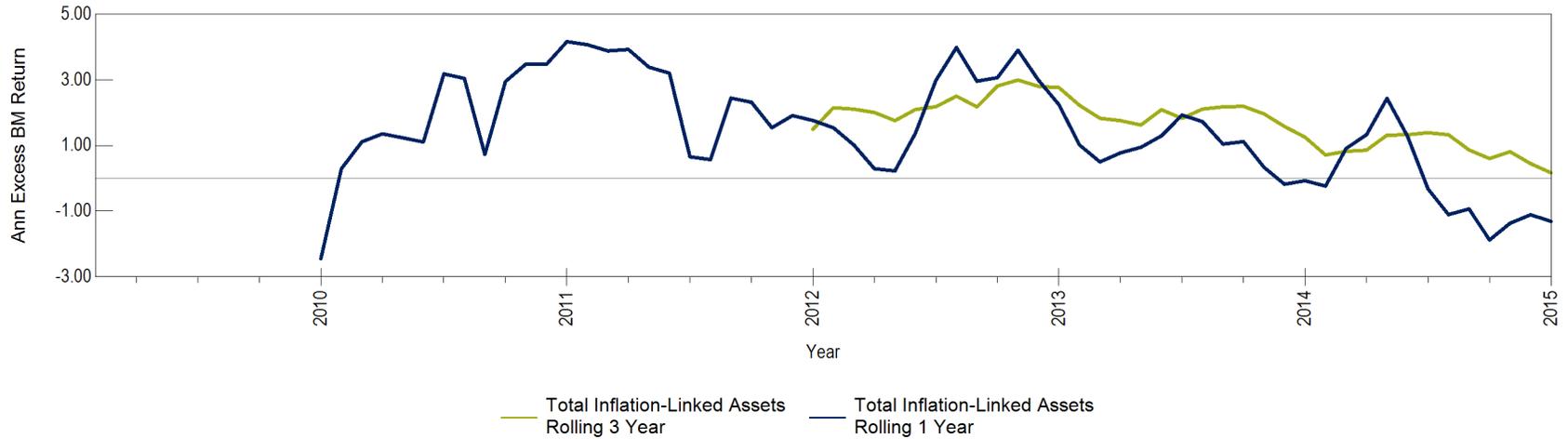
- First Rolling Period
- ◆ Last Rolling Period



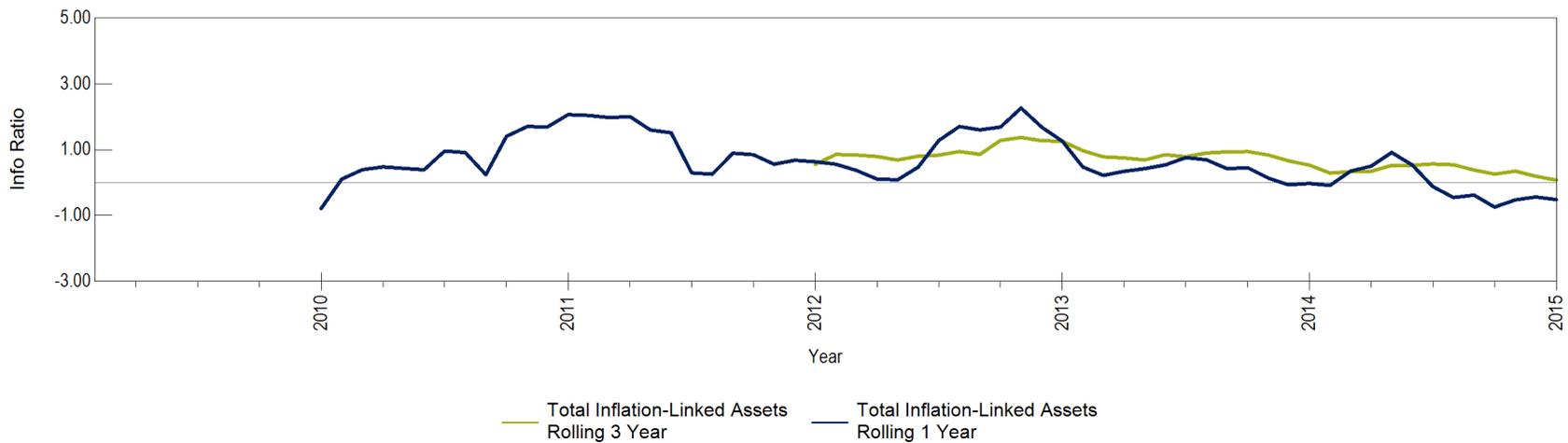
- Total Public Markets Fixed Income
- ▲ ASRS Custom Public Markets Fixed Income Benchmark
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Asset Class Analysis - Total Inflation-Linked Assets

Rolling Annual Excess Benchmark Return

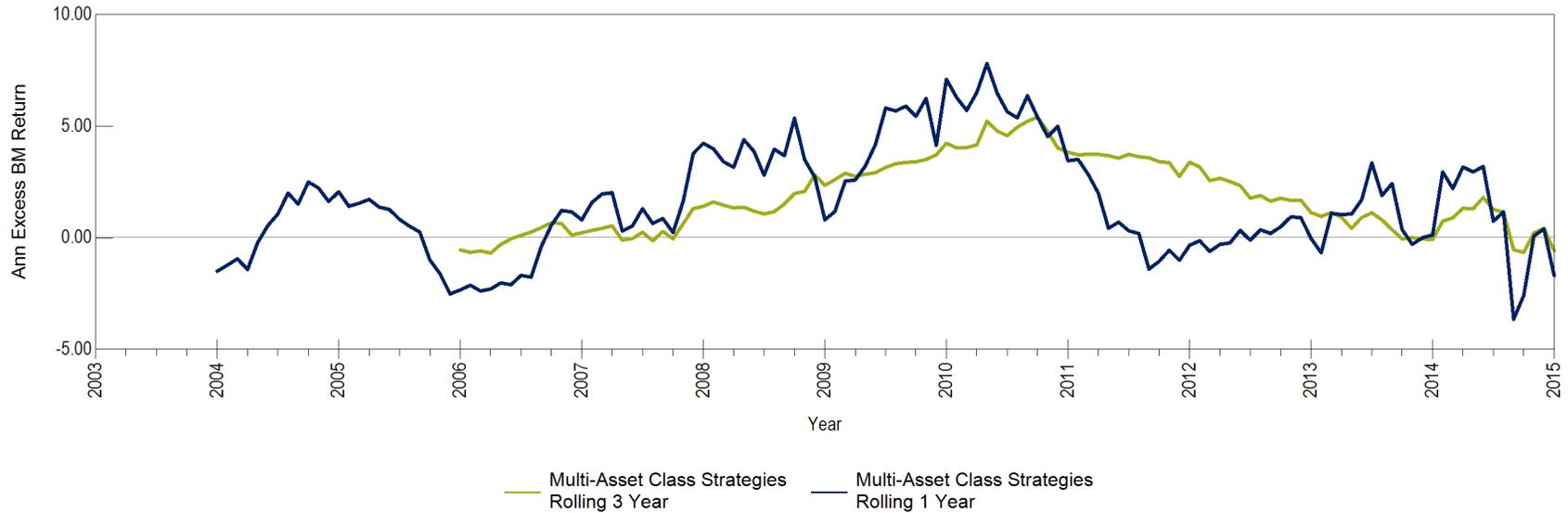


Rolling Information Ratio

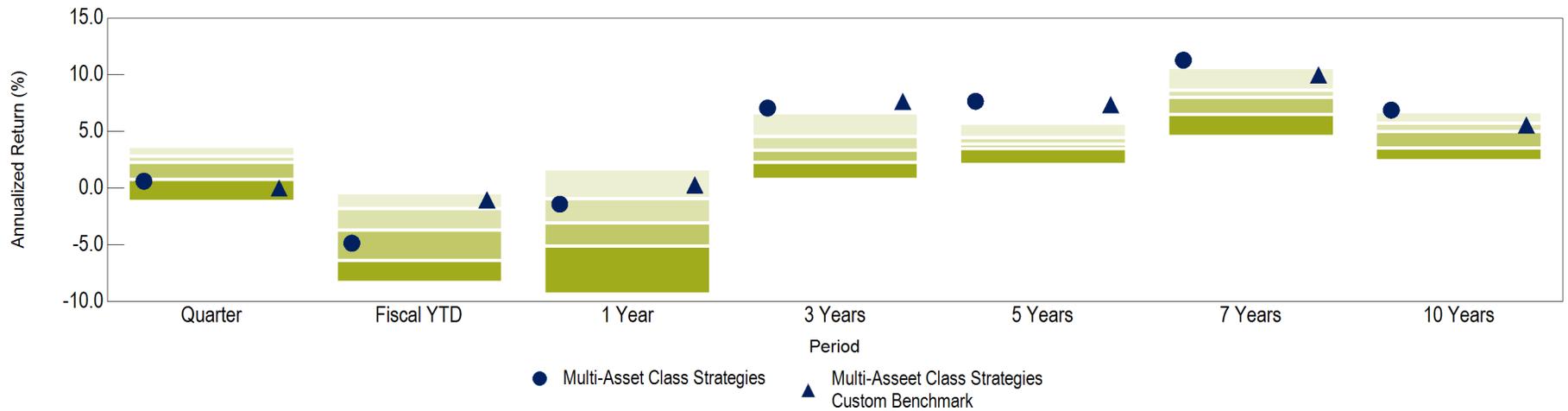


Asset Class Analysis - Multi-Asset Class Strategies

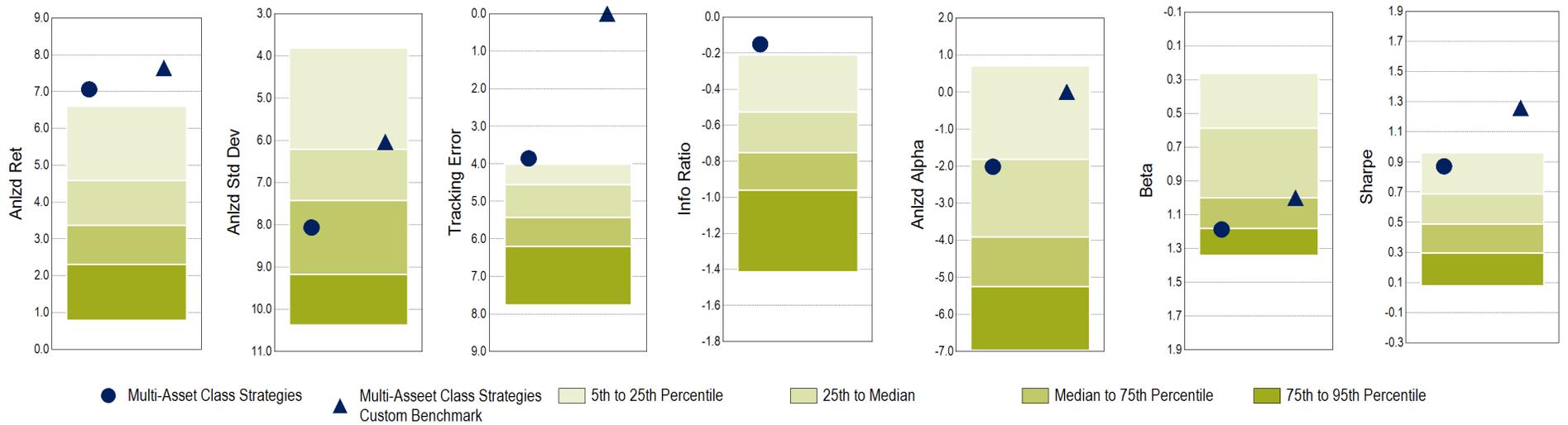
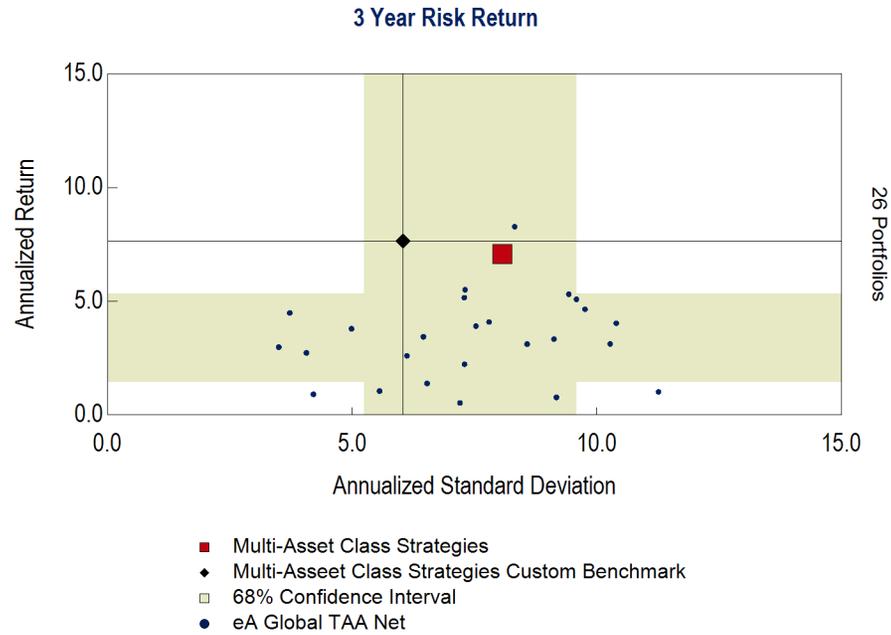
Rolling Annual Excess Benchmark Return



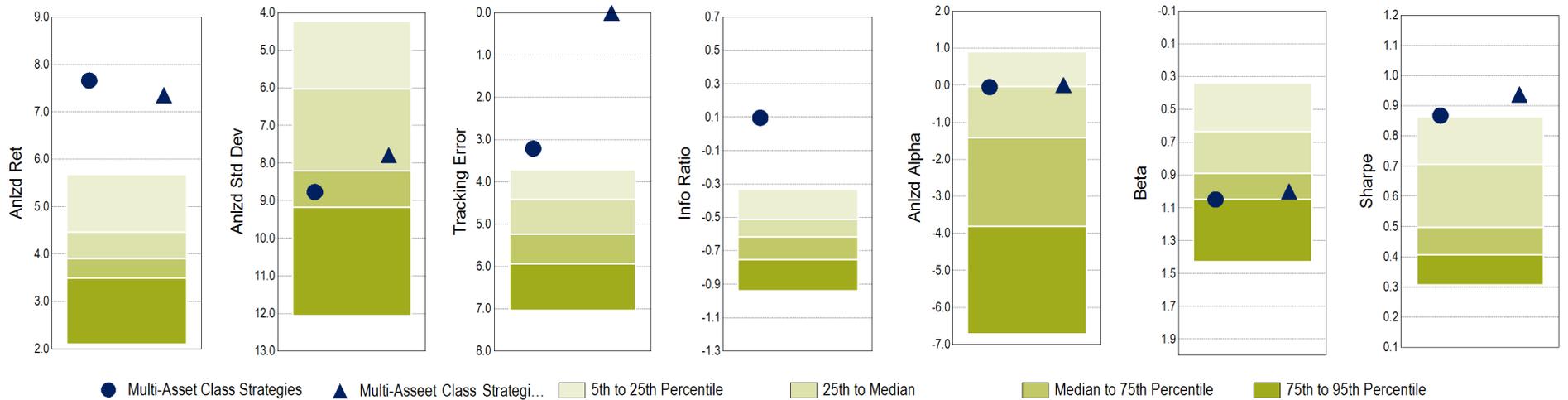
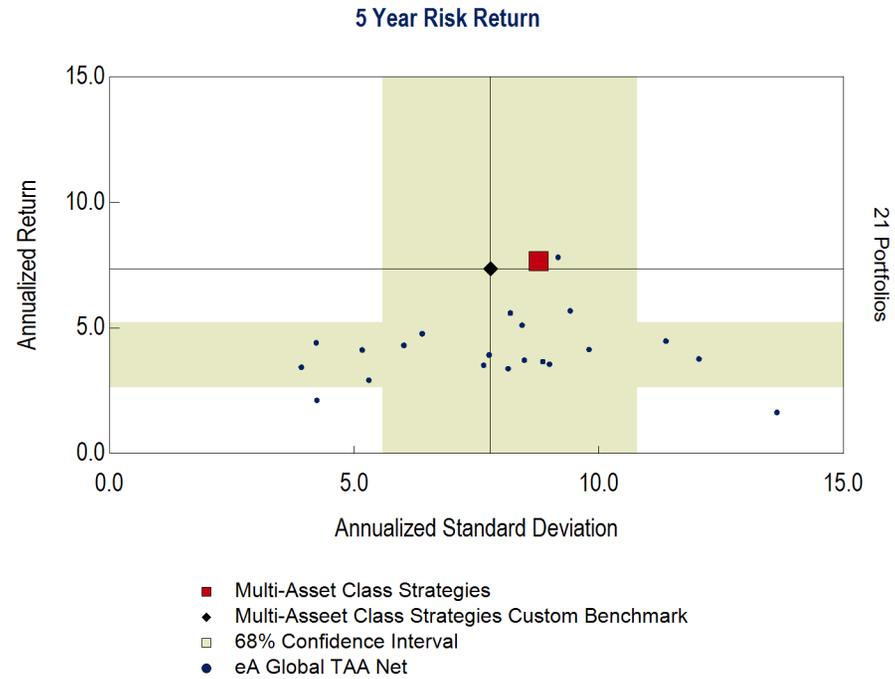
eA Global TAA Net Accounts



Asset Class Analysis - Multi-Asset Class Strategies



Asset Class Analysis - Multi-Asset Class Strategies



- **Four Asset Class Committee meetings have been held since the last time we provided an update on the ASRS Asset Class Committee Meetings.**

- **November 18, 2015 - Private Markets Committee**
 - Monthly Status Report, General Discussion and Deal Flow
 - Private Equity Manager Recommendation (\$50 million commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The ASRS has invested with this manager in a prior fund within the private debt program
 - Private Equity Manager Recommendation (\$30 million commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The ASRS has invested with this manager in a prior fund within the private equity program
 - 2016 Private Equity Pacing Model and Implementation Plan
 - Anticipate \$700 million of new private equity commitments in 2016
 - Committee approved the recommended commitment pace for 2016, noting that the actual amount may differ as determined by the committee as market conditions evolve throughout the year

- **November 24, 2015 - Ad-hoc Private Markets Committee**

- Private Equity Manager Recommendation – Additional Commitment (\$12.5 million; \$25 million original commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The Committee approved the original \$25 million commitment at the August 20, 2014 PRIVMC meeting
 - The ASRS has invested with this manager in multiple prior funds across the ASRS private markets programs
- Variance Request
 - RCLCO, in conjunction with the ASRS Private Markets Team, recommended the ASRS approve a variance request from an existing real estate manager that would allow the manager to invest in a property that does not meet the current investment criteria for the portfolio
 - The variance request is required as the investment mandate currently states that at least 60% of a project’s value will be derived from retail occupancy and the manager is contemplating an investment that would allow for a higher percentage of the project to be allocated to office occupancy
 - Committee approved the recommendation

- **December 18, 2015 - Private Markets Committee**

- Monthly Status Report, General Discussion and Deal Flow
- Private Debt Manager Recommendation (\$500 million commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Debt is 10%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The ASRS has invested with this manager in multiple prior funds within the private debt program

• **December 18, 2015 - Private Markets Committee (cont.)**

- Private Equity Manager Recommendation – Additional Commitment (\$15 million; \$30 million original commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The Committee approved the original \$25 million commitment at the March 20, 2015 PRIVMC meeting
- Private Equity Manager Recommendation – Additional Commitment (up to \$10 million; \$30 million original commitment)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The Committee approved the original \$30 million commitment at the November 18, 2015 PRIVMC meeting
 - The ASRS Private Markets Team had originally requested a \$50 million commitment, but the manager was only able to grant \$30 million due to the fund’s oversubscription; a larger allocation is now available
 - The ASRS has invested with this manager in a prior fund within the private equity program
- Real Estate Asset Disposition Recommendation
 - The ASRS Private Markets Team recommended the ASRS consider the disposition of a property that no longer meets the ASRS standards for continued ownership due to its size and the condition of the property. negotiation and implementation of the transaction
 - Committee approved the recommendation, delegating to staff the negotiation and implementation of the transaction
- 2016 Real Estate Pacing Model and Implementation Plan
 - Anticipate net \$200 - \$400 million of new real estate commitments in 2016
 - Includes potential disposition of existing investments totaling approximately \$300 million
 - Committee approved the recommended commitment pace for 2016, noting that the actual amount may differ as determined by the committee as market conditions evolve throughout the year

- **January 19, 2016 – Private Markets Committee**

- Monthly Status Report, General Discussion and Deal Flow
- Separately Managed Account Portfolio Review
 - RCLCO presented the results of its semi-annual portfolio review of the separately managed real estate accounts
- Private Equity Manager Recommendation (\$100 million)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The ASRS has invested with this manager in multiple prior funds within the private equity program
- Private Equity Manager Recommendation (\$50 million)
 - Consistent with strategic plan at the Total Fund level (SAAP Target to Private Equity is 8%)
 - Due diligence process was followed in accordance with SIP 006 – Investment Manager, Partner, and Co-Investment Selection and Oversight
 - Committee approved the recommendation
 - The ASRS has invested with this manager in a prior fund within the private equity program

- **The Fund continues to make significant progress moving the portfolio from the Interim SAAP toward the long-term SAAP. New long-term SAAP adopted as of April 1, 2015.**
 - Current Interim SAAP includes proration of 4% Private Debt and 2% Real Estate, which are unfunded.
 - Continued build out of private markets asset classes provides opportunity to take advantage of illiquidity premium to produce expected returns in excess of what we believe can be achieved in the public markets.

- **IMD has already taken significant steps to move the Fund toward implementation of the recently approved SAAP.**
 - The largest single underweight position in the Fund is Private Debt, which was increased from a 3% SAAP target to a 10% SAAP target with an 8% - 12% range (current actual is 7.0%).
 - \$5.1 billion in commitments to private debt strategies equates to approximately 15.2% of Total Fund assets vs. the SAAP target of 10%.
 - \$5.1 billion includes \$500 million investment approved in December 2015 that is expected to close in 1Q 2016.
 - Estimate private debt asset class reaching 10% target by the end of 2016.
 - Estimate private debt asset class reaching 12% cap in 3Q 2017.
 - Multi-Asset Class Strategies (formerly GTAA) has been restructured and moved 'above the line', and now has an explicit 5% target within the SAAP.

- **ASRS Private Markets programs have added significant value at the Total Fund level over the three- and five-year time periods.**

- **Volatility is being realized across markets; Long Treasuries mandate funded in August 2015 to mitigate volatility.**

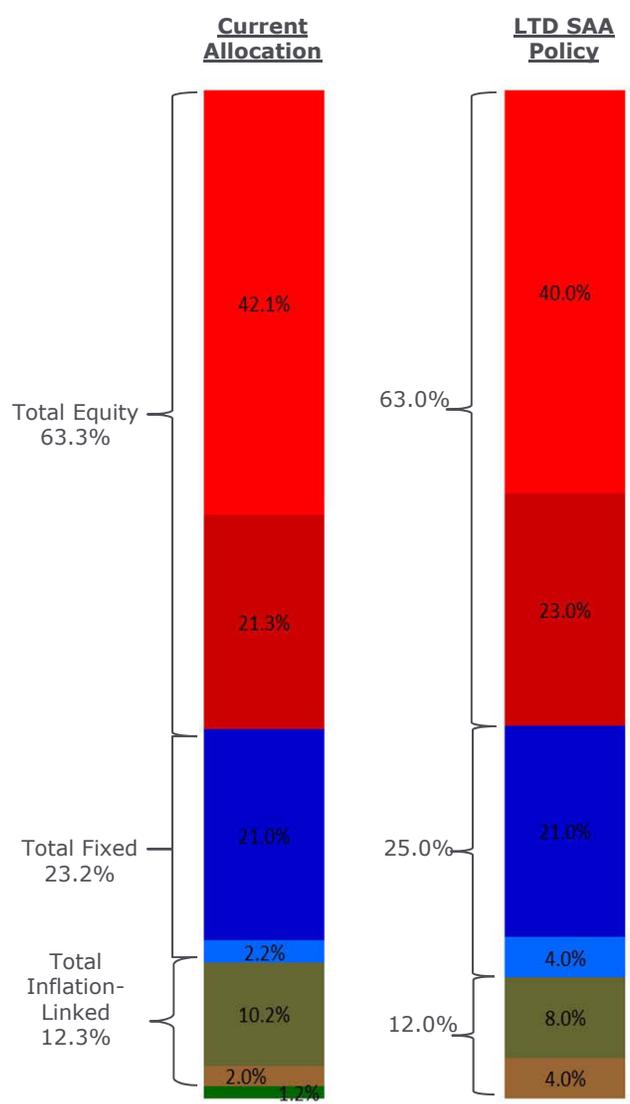
- **Tactical positioning consistent with IMD House Views.**

Independent Oversight/Compliance: LTD

Note: All of the data shown on the following pages is as of December 31, 2015 and reflects the deduction of investment manager fees, unless otherwise noted.



Long Term Disability Asset Allocation



| | Current Mkt Value | Current Allocation | LTD SAA Policy | Difference |
|-------------------------------|----------------------|--------------------|----------------|--------------|
| U.S. Equity | \$88,863,492 | 42.1% | 40.0% | 2.1% |
| U.S. Large Cap | \$73,864,359 | 35.0% | 34.0% | 1.0% |
| U.S. Small Cap | \$14,999,134 | 7.1% | 6.0% | 1.1% |
| International Equity | \$44,891,551 | 21.3% | 23.0% | -1.7% |
| Developed Large Cap | \$27,389,729 | 13.0% | 14.0% | -1.0% |
| Developed Small Cap | \$7,463,993 | 3.5% | 3.0% | 0.5% |
| Emerging Markets | \$10,037,829 | 4.8% | 6.0% | -1.2% |
| Total Equity | \$133,755,043 | 63.3% | 63.0% | 0.3% |
| U.S. Fixed Income | \$44,356,776 | 21.0% | 21.0% | 0.0% |
| Core | \$27,276,513 | 12.9% | 13.0% | -0.1% |
| High Yield | \$17,080,263 | 8.1% | 8.0% | 0.1% |
| Emerging Market Debt | \$4,648,166 | 2.2% | 4.0% | -1.8% |
| Total Fixed Income | \$49,004,942 | 23.2% | 25.0% | -1.8% |
| Real Estate | \$21,608,530 | 10.2% | 8.0% | 2.2% |
| Commodities | \$4,273,009 | 2.0% | 4.0% | -2.0% |
| Total Inflation-Linked | \$25,881,539 | 12.3% | 12.0% | 0.3% |
| Cash¹ | \$2,506,729 | 1.2% | 0.0% | 1.2% |
| Total | \$211,148,253 | 100.0% | 100.0% | 0.0% |

¹Cash includes money for the upcoming monthly pension distribution.

Note: Market values include manager held cash.

ASRS LTD rebalanced to the new SAA Policy in December 2012, with an effective date of 1/1/2013.

Long Term Disability Performance Summary

| | Quarter | 1 Year | 3 Years | 5 Years | 10 Years | Since Inception (July-02) |
|-----------------------------|----------------|---------------|----------------|----------------|-----------------|----------------------------------|
| Long Term Disability | 3.7% | -1.6% | 7.1% | 6.8% | 4.9% | 6.1% |
| LTD SAA Policy ¹ | 3.3% | -2.1% | 6.6% | 6.6% | 5.3% | 6.3% |
| Excess Return | 0.4% | 0.5% | 0.5% | 0.2% | -0.4% | -0.2% |

¹LTD SAA Policy composition can be found in the appendix.

Market Environment Update and Outlook



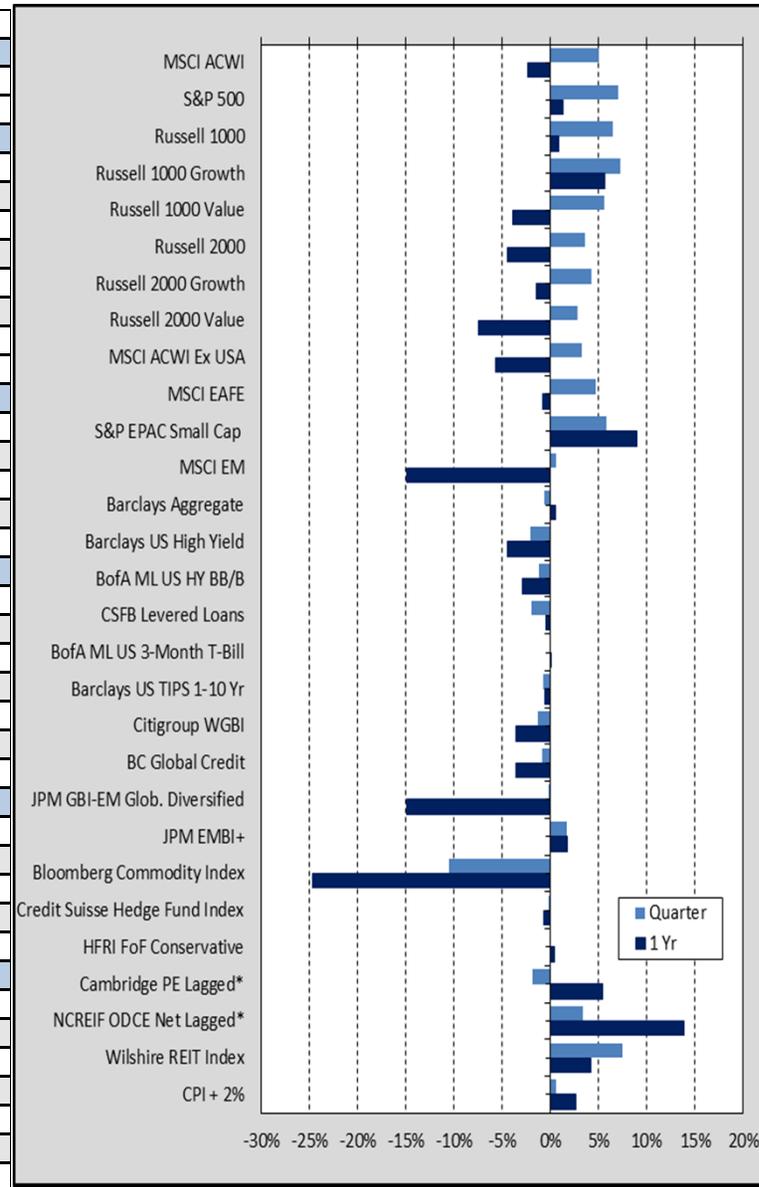
Economic Environment

- **Fourth quarter GDP growth rate (first estimate) printed at a modest 0.7%.**
 - Retail sales (ended November) at +0.9% on a year-over-year growth rate basis. In the same period last year the YoY growth rate was 4.6%.
 - The inventory-to-sales ratio ending November was flat at 1.4 and has remained relatively flat since early 2010.
 - Corporate profits (ended June) as a percent of GDP declined slightly vs first quarter GDP to 9.9% from 10.3% and remain elevated relative to historical levels.
 - The U.S. trade deficit declined slightly in November.
- **The unemployment rate fell to 5.0% in Q4 from 5.6% in Q4 2014; U-6, a broader measure of unemployment, fell to 9.9% during the fourth quarter.**
- **The Case-Shiller Home Price Index (as of 10/31) increased slightly to 175.7 from second quarter levels (170.0) and is at levels higher than that of pre-financial crisis levels of 150.9.**
- **Rolling 12-month seasonally adjusted CPI increased to 0.6% from -0.02% at the end of September; Capacity Utilization decreased to 76.5% in December from 77.9% in September.**
- **Fed Funds rate was raised to 0.50% from 0.25%; The 10-year Treasury Yield (constant maturity) finished Q4 at 2.2% flat from Q3.**
- **The Fed balance sheet remained little changed in Q4 2015, while the European Central Bank balance sheet continues to increase.**
 - ECB continues asset purchases of €60 billion per month.
- **S&P valuations decreased in December remaining above the 10-year and long-term averages**
 - Cyclically adjusted Shiller PE ratio (23.95x) is above the long-term average of 16.4x and above the 10-year average of 22.9x.
- **The U.S. Dollar continues its strength against a basket of major currencies**
 - Currency volatility has seen a sustained uptick since Q1 2015.

Arizona State Retirement System

Market Environment – Q4 2015 Overview

| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
|---|------------------------|--------|--------|--------|--------|--------|
| World Equity Benchmarks | | | | | | |
| MSCI ACWI | World | 5.0% | -2.4% | 7.7% | 6.1% | 4.8% |
| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
| Domestic Equity Benchmarks | | | | | | |
| S&P 500 | Large Core | 7.0% | 1.4% | 15.1% | 12.6% | 7.3% |
| Russell 1000 | Large Core | 6.5% | 0.9% | 15.0% | 12.4% | 7.4% |
| Russell 1000 Growth | Large Growth | 7.3% | 5.7% | 16.8% | 13.5% | 8.5% |
| Russell 1000 Value | Large Value | 5.6% | -3.8% | 13.1% | 11.3% | 6.2% |
| Russell 2000 | Small Core | 3.6% | -4.4% | 11.7% | 9.2% | 6.8% |
| Russell 2000 Growth | Small Growth | 4.3% | -1.4% | 14.3% | 10.7% | 8.0% |
| Russell 2000 Value | Small Value | 2.9% | -7.5% | 9.1% | 7.7% | 5.6% |
| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
| International Equity Benchmarks | | | | | | |
| MSCI ACWI Ex USA | World ex-US | 3.2% | -5.7% | 1.5% | 1.1% | 2.9% |
| MSCI EAFE | Int'l Developed | 4.7% | -0.8% | 5.0% | 3.6% | 3.0% |
| S&P EPAC Small Cap | Small Cap Int'l | 5.9% | 9.0% | 10.7% | 6.9% | 5.7% |
| MSCI EM | Emerging Equity | 0.7% | -14.9% | -6.8% | -4.8% | 3.6% |
| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
| Domestic Fixed Income Benchmarks | | | | | | |
| Barclays Aggregate | Core Bonds | -0.6% | 0.5% | 1.4% | 3.2% | 4.5% |
| Barclays US High Yield | High Yield | -2.1% | -4.5% | 1.7% | 5.0% | 7.0% |
| BofA ML US HY BB/B | High Yield | -1.1% | -2.9% | 2.2% | 5.3% | 6.5% |
| CSFB Levered Loans | Bank Loans | -2.0% | -0.4% | 2.6% | 3.8% | 4.1% |
| BofA ML US 3-Month T-Bill | Cash | 0.0% | 0.1% | 0.1% | 0.1% | 1.2% |
| Barclays US TIPS 1-10 Yr | Inflation | -0.7% | -0.5% | -1.8% | 1.6% | 3.5% |
| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
| Global Fixed Income Benchmarks | | | | | | |
| Citigroup WGBI | World Gov. Bonds | -1.2% | -3.6% | -2.7% | -0.1% | 3.4% |
| BC Global Credit | Global Bonds | -0.8% | -3.5% | -0.3% | 2.8% | 4.3% |
| JPM GBI-EM Glob. Diversified | Em. Mkt. Bonds (Local) | -0.0% | -14.9% | -10.0% | -3.5% | 4.3% |
| JPM EMBI+ | Em. Mkt. Bonds | 1.8% | 1.8% | -0.3% | 5.0% | 6.7% |
| | | Qtr. | 1 Yr. | 3 Yr. | 5 Yr. | 10 Yr. |
| Alternative Benchmarks | | | | | | |
| Bloomberg Commodity Index | Commodity | -10.5% | -24.7% | -17.3% | -13.5% | -6.4% |
| Credit Suisse Hedge Fund Index | Hedge Fund | -0.1% | -0.7% | 4.3% | 3.6% | 5.0% |
| HFRI FoF Conservative | Fund of Funds | 0.1% | 0.4% | 3.7% | 2.3% | 2.0% |
| Cambridge PE Lagged* | Private Equity | -1.8% | 5.4% | 13.5% | 14.1% | 12.1% |
| NCREIF ODCE Net Lagged* | Real Estate | 3.4% | 13.9% | 12.4% | 12.9% | 5.7% |
| Wilshire REIT Index | REIT | 7.5% | 4.2% | 11.8% | 12.4% | 7.3% |
| CPI + 2% | Inflation/Real Assets | 0.6% | 2.7% | 3.0% | 3.6% | 3.9% |



* As of 9/30/2015

Market Environment

Global Equity

- **U.S. equities posted solid gains in the fourth quarter as global volatility continued.**
- **Small cap stocks underperformed large cap stocks during the quarter, with the Russell 2000 Index returning 3.6%% and the Russell 1000 Index returning 6.5%.**
- **International equities underperformed U.S. markets during the quarter, returning 3.2%, as measured by the MSCI ACWI ex-U.S. Index.**
 - Developed markets returned 4.7% as measured by the MSCI EAFE Index. The Pacific Region led returns posting a 9.0% gain with New Zealand leading the group up 18.2%. Europe posted modest gains, up 2.5%
 - Emerging markets returned 0.7% as measured by the MSCI Emerging Markets Index in U.S. dollar terms. Indonesia and China led gains returning 20.8% and 13.1% respectively.

Private Equity

- **New private equity commitments totaled \$312 billion in calendar year 2015.**
 - Represents a 14% decline from the \$360 billion raised in 2014, resulting from public equity market volatility and increased economic uncertainties.
- **Buyout and Special Situations fundraising down over 20% from post crisis high in 2014.**
- **Venture capital raised approximately \$43.9 billion in calendar 2015.**
 - VC fundraising as a percent of total new PE funds is in line with historical post-dot com levels at approximately 14%.
- **Energy funds raised \$38.6 billion representing 12% of capital raised in 2015.**
 - Investors are opportunistically approaching the energy market dislocation.
- **Asian private equity commitments slowed to total 8% of total funds raised down from 11% in 2014.**
- **European commitments comprised 23% of all new PE commitments in 2015.**
 - Fifteen pan-European buyout managers with closes on over \$1 billion each raised over half of 2015 total

Market Environment

Fixed Income

- **The yield curve shifted up with intermediate yields increasing 21-39 basis points and long duration yields increasing 14 basis points.**
- **The spread between two and 10-year rates decreased to 121 basis points from 141 basis points ended December. Treasury Inflation-Protected Securities, or TIPS, returned -0.7% during the quarter, as measured by the Barclays US TIPS 1-10 Yr Index.**
- **The Barclays Long Duration Credit Index lost -0.67% as the long end of the curve ended the quarter 14 basis points higher.**
- **Long Treasuries lost -1.38% and investment-grade corporate debt lost -0.52%.**
- **The Barclays 1-3 year Government/ Credit Index returned -0.36% and US high yield bonds lost -2.1%.**
- **Emerging markets debt continued to slow in local currency and was modestly positive in US denominated terms.**
 - US dollar-denominated debt, as measured by the JP Morgan EMBI Index, gained 1.8%; local currency debt was flat, according to the JP Morgan GBI-EM Index.

Real Assets/Inflation-Linked Assets

- **Massive energy market dislocation.**
 - Seek inflation sensitive asset classes that offer positive yield
 - Oil prices trending lower.
 - Private equity and private debt opportunities may be relatively attractive.
 - Potential for public stressed/distressed credit, equity and commodity plays.

- **OPEC and Saudi Arabia have indicated a willingness to allow lower oil prices to persist in efforts to cement market share and reduce marginal supply.**

- **Select infrastructure opportunities are attractive.**
 - Target opportunistic strategies in niche sub-sectors to take advantage of market dislocations.

- **NEPC continues to believe in the long-term demand drivers in agriculture.**
 - Long-term commodity prices driven by growing emerging market demand.
 - Softness in commodity prices may provide attractive entry point.

- **Timber opportunity set limited but warrants further review**
 - 45% increase in housing starts forecasted; timber prices highly correlated

Commodities

- **Commodities retracted significantly with the Bloomberg Commodity Index posting a -10.5%.**
 - Commodities ended the year down -24.6% with 21 of the 22 single-commodity indexes posting losses.

Real Estate

- **NEPC continues to be neutral on core real estate in the US and remains positive on non-core real estate, that is, value-add and opportunistic strategies.**
- **Within U.S. core real estate, strong fundamentals continue to be the story along with attractive income spreads relative to interest rates.**
 - Real estate fundamentals and debt terms are attractive, however valuations are high and the possibility of rising interest rates and the impact on cap rates causes concern.
- **Overall, the non-core real estate investment environment in the U.S. is normalizing; however, select areas remain attractive.**
- **Europe is viewed as the best place for a marginal dollar of non-core real estate investment.**
 - Europe is emerging from multi-year recession, but recovery is slow and uneven with global markets experiencing large capital inflows.
 - Banks in EU are still overleveraged and have significant real estate exposure to jettison.

Highlights of Fourth Quarter Happenings at NEPC

After 30 Years NEPC's Founder has Transitioned to Chairman Emeritus

- NEPC's founder and chairman Richard "Dick" Charlton retired on January 1, 2016 after overseeing a decade-long succession process that involved a change in corporate structure and a planned approach to distributing his ownership shares. Dick had the foresight to begin distributing equity to partners 25 years ago and the formal succession process began in late 2007. Dick's vision for a client-focused organization continues to be the hallmark of NEPC and this deep-rooted culture will live on for generations to come. Mike Manning continues in his leadership role as Managing Partner with the guidance of our Partnership; a Partnership recognized throughout the industry for its depth, talent and culture. We are well positioned to lead in this increasingly competitive marketplace. NEPC has never been stronger.



Professional Staff Updates

- **New Principals:** Lenia Ascenso, Principal and Director of Discretionary Operations; Devan Dewey, Principal and Chief Technology Officer; and Matt Lombardi, Principal and Chief Financial Officer
- We are also pleased to announce that Wyatt Crumpler joined NEPC in November as a Principal and Senior Consultant from American Beacon Advisors, Inc., and Sam Pollack joined NEPC as a Senior Consultant from DiMeo Schneider and Associates. Wyatt is a member of NEPC's Corporate consulting group and Sam is a member of NEPC's Endowment & Foundation consulting group.

Upcoming/Recent Events

- 2016 Market Outlook Webinar: January 26, 2016 at 2:00 PM EST.
- NEPC's 21st Annual Client Conference: May 10-11, 2016 in Boston at the Hynes Convention Center.
 - This year we will be offering an optional pre-conference workshop on Monday, May 9th at NEPC's Boston office.
- NEPC hosted a Manager Diversity Program event at our Boston office on October 12, 2015 in an effort to continue and enhance our firm's efforts in this area. The purpose of the gathering was to provide an opportunity for diverse managers to meet NEPC and have an open discussion about our research efforts in the arena of minority- and female-owned firms.

Highlights of Fourth Quarter Happenings at NEPC - continued

NEPC Research

Recent White Papers

- *2015 Fourth Quarter Market Thoughts*
- *Governance: The Cornerstone of Successful Investment Programs* (January 2016) – Endowment & Foundation Practice Team
- *Green Bonds: An Overview* (December 2015) – NEPC Impact Investing Committee
- *Completing the Analysis: ESG Integration* (November 2015) – NEPC Impact Investing Committee
- *NEPC's Survey on Hedge Fund Operations* (November 2015) – Hedge Fund Operational Due Diligence team
- *Market Chatter: The Rise and Fall (and Rise?) of Oil Prices* (October 2015)

NEPC Recognitions

- NEPC, LLC was awarded "Best Full-Service Investment Consulting Firm - USA" by Acquisition International for the 2016 Hedge Fund Awards ¹



NEPC Client Recognitions

- Congratulations to the following NEPC clients for their nominations as Asset Owner Finalists for the 2015 CIO Industry Innovation Awards. Five NEPC clients who won awards in their categories are also highlighted below.
 - **Foundation:** Wisconsin Alumni Research Foundation (Carrie Thome) - Category Winner; Northwest Area Foundation (Amy Jensen)
 - **Endowment:** Fordham University (Eric Wood); Texas Tech University System (Tim Barrett)
 - **Public Defined Benefit Plan Below \$15B:** Orange County Employees Retirement System (Girard Miller) - Category Winner; MoDOT and Patrol Employees' Retirement System (Larry Kruppen)
 - **Public Defined Benefit Plan Between \$15B and \$100B:** Massachusetts PRIM (Michael Trotsky) - Category Winner
 - **Public Defined Benefit Plan Above \$100B:** New York City Retirement System (Scott Evans); State of Wisconsin Investment Board (David Villa)
 - **Health Care Organization:** Baylor Scott and White Health (Mark Amiri) - Category Winner; Trinity Health (Dina Richards)
 - **Next Generation:** Massachusetts PRIM (Sarah Samuels) - Category Winner

Appendix: SAA Policy History



Strategic Asset Allocation Policy (SAAP) History

- 7/1/75 – 12/31/79 – 40% S&P 500/60% Barclays Capital Aggregate
- 1/1/80 – 12/31/83 – 50% S&P 500/50% Barclays Capital Aggregate
- 1/1/84 – 12/31/91 – 60% S&P 500/40% Barclays Capital Aggregate
- 1/1/92 – 12/31/94 – 50% S&P 500/10% MSCI EAFE/40% Barclays Capital Aggregate
- 1/1/95 – 6/30/97 – 45% S&P 500/15% MSCI EAFE/40% Barclays Capital Aggregate
- 7/1/97 – 12/31/99 – 50% S&P 500/15% MSCI EAFE/35% Barclays Capital Aggregate
- 1/1/00 – 9/30/03 – 53% S&P 500/17% MSCI EAFE/30% Barclays Capital Aggregate
- 10/1/03 – 12/31/06 – 53% S&P 500/15% MSCI EAFE/ACWI ex-U.S.¹/26% Barclays Capital Aggregate/6% NCREIF ODCE (lagged one quarter)
- 1/1/07 – 10/31/2009 – 31% S&P 500/7% S&P 400/7% S&P 600/18% MSCI ACWI ex-U.S./5% Russell 2000 (lagged one quarter)/26% Barclays Capital Aggregate/6% NCREIF ODCE (lagged one quarter)
- 11/1/2009 – 6/30/2012 – 28% S&P 500/6% S&P 400/6% S&P 600/13% MSCI EAFE/2% MSCI EAFE Small Cap/3% MSCI Emerging Markets/7% Russell 2000 (lagged one quarter)/24% Barclays Capital Aggregate/2% Barclays Capital High Yield/6% NCREIF ODCE (lagged one quarter)/3% Dow Jones/UBS Commodities Index
- 7/1/2012 – 3/31/2015 – 23% S&P 500/5% S&P 400/5% S&P 600/14% MSCI EAFE/3% MSCI EAFE Small Cap/6% MSCI Emerging Markets/7% Russell 2000 (lagged one quarter)/13% Barclays Capital Aggregate/5% Barclays Capital High Yield/4% JP Morgan GBI-EM Global Diversified/3% S&P/LSTA Levered Loan Index + 250 basis points (lagged one quarter)/8% NCREIF ODCE (lagged one quarter)/4% Dow Jones/UBS Commodities Index
- **4/1/2015 - present – 20% S&P 500/3% S&P 400/3% S&P 600/17% MSCI EAFE/2% MSCI EAFE Small Cap/5% MSCI Emerging Markets/8% Russell 2000 (lagged one quarter)/11% Barclays Capital Aggregate/4% Barclays Capital High Yield/10% S&P/LSTA Levered Loan Index + 250 basis points (lagged one quarter)/10% NCREIF ODCE (lagged one quarter)/2% Bloomberg Commodities Index TR/5% Multi-Asset Class Custom Index**
- ***Interim SAA Policy:** 21% S&P 500/3% S&P 400/3% S&P 600/18% MSCI EAFE/2% MSCI EAFE Small Cap/5% MSCI Emerging Markets/8% Russell 2000 (lagged one quarter)/15% Barclays Capital Aggregate/4% Barclays Capital High Yield/6% S&P/LSTA Levered Loan Index + 250 basis points (lagged one quarter)/8% NCREIF ODCE (lagged one quarter)/2% Bloomberg Commodity Index/5% Multi-Asset Class Custom Index

Note: Interim SAA Policy includes proration of 2% Real Estate and 4% Private Debt which are unfunded. Real Estate was prorated to equity and fixed income; Private Debt was prorated to fixed income. Recently approved Strategic Asset Allocation Policy effective April 1, 2015.

¹MSCI EAFE/ACWI ex-U.S. Benchmark is the MSCI EAFE Index prior to 10/1/2005 and the MSCI ACWI ex-U.S. thereafter.

Note: All MSCI indices changed from Gross to Net dividend withholding taxes effective 1/1/2014.

ASRS Custom Asset Class Benchmark History

- **ASRS Custom Total Equity Benchmark** was 77% S&P 500, 23% MSCI EAFE through 12/31/1999; 76% S&P 500, 24% MSCI EAFE through 9/30/2003; 78% S&P 500, 22% MSCI EAFE/ACWI ex-U.S.¹ through 12/31/2006; 49% S&P 500, 11% S&P 400, 11% S&P 600, 29% MSCI ACWI ex-U.S. through 10/31/2009; 48% S&P 500, 10% S&P 400, 10% S&P 600, 23% MSCI EAFE, 4% MSCI EAFE Small Cap, 5% MSCI Emerging Markets through 6/30/2012; 41% S&P 500, 9% S&P 400, 9% S&P 600, 25% MSCI EAFE, 5% MSCI EAFE Small Cap, 11% MSCI Emerging Markets through 3/31/2015; 40% S&P 500, 6% S&P 400, 6% S&P 600, 34% MSCI EAFE, 4% MSCI EAFE Small Cap, 10% MSCI Emerging Markets thereafter.
- **ASRS Custom Domestic Equity Benchmark** was S&P 500 through 12/31/2006; 74% S&P 500, 13% S&P 400, 13% S&P 600 through 12/31/2010; 70% S&P 500, 15% S&P 400, 15% S&P 600 through 3/31/2015.; 77% S&P 500, 11.5% S&P 400, 11.5% S&P 600 thereafter.
- **ASRS Custom International Equity Benchmark** was MSCI EAFE through 9/30/2005; MSCI ACWI ex-U.S. through 12/31/2010; 72% MSCI EAFE, 11% MSCI EAFE Small Cap and 17% MSCI Emerging Markets through 6/30/2012; 61% MSCI EAFE, 13% MSCI EAFE Small Cap and 26% MSCI Emerging Markets through 3/31/2015; 71% MSCI EAFE, 8% MSCI EAFE Small Cap and 21% MSCI Emerging Markets thereafter.
- **ASRS Custom Public Markets Fixed Income Benchmark** was Barclays Capital U.S. Aggregate Index through 12/31/2010; 93% Barclays Capital U.S. Aggregate Index, 7% Barclays Capital U.S. High Yield Bond Index through 12/31/2012; 59% Barclays Capital U.S. Aggregate Index, 23% Barclays Capital U.S. High Yield Bond Index, 18% JP Morgan GBI-EM Global Diversified through 3/31/2015; 73% Barclays Capital U.S. Aggregate Index, 27% Barclays Capital U.S. High Yield Bond Index thereafter.
- **ASRS Custom Inflation-Linked Benchmark** was 100% Barclays Capital U.S. TIPS through 7/31/2010; 50% Barclays Capital U.S. TIPS, 50% Bloomberg Commodity Index through 8/31/2010; 30% Barclays Capital U.S. TIPS, 70% Bloomberg Commodity Index through 5/31/2011; 100% Bloomberg Commodity Index thereafter.
- **Multi-Asset Class Strategies Custom Benchmark** was 56% S&P 500, 16% MSCI EAFE, 28% Barclays Capital Aggregate through 9/30/2011; 50% S&P 500, 19% MSCI EAFE, 28% Barclays Capital Aggregate, and 3% Bloomberg Commodity Index through 06/30/2012; 43% S&P 500, 25% MSCI EAFE, 28% Barclays Capital Aggregate, and 4% Bloomberg Commodity Index through 3/31/2015; market value weighted average of the benchmarks for Bridgewater (91 Day T-Bill) and Windham (52% MSCI ACWI net, 30% Citi WGBI, 9% DJ US REIT, and 9% Bloomberg Commodities Index) thereafter.
- **ASRS Cash Assetization Custom Benchmark** is 33% S&P 500, 14% Russell 2000, 25% MSCI EAFE, 28% Barclays Treasury Index through 8/24/2015; 100% Barclays US Long Treasury Index through 11/13/2015; 15% S&P 500, 15% Russell 2000, 16% MSCI EAFE, 4% MSCI Emerging Markets Index, 50% Barclays US Treasury Index thereafter.

¹MSCI EAFE/ACWI ex-U.S. Benchmark is the MSCI EAFE Index prior to 10/1/2005 and the MSCI ACWI ex-U.S. thereafter.

Note: All MSCI indices changed from Gross to Net of dividend withholding taxes effective 1/1/2014.

Information Disclaimer and Reporting Methodology

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

Agenda Item #9



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MEMORANDUM

TO: Mr. Kevin McCarthy, Chair, Arizona State Retirement System (ASRS) Board
FROM: Mr. Paul Matson, Director
DATE: February 19, 2016
RE: **Agenda Item #9:** Presentation, Discussion, and Appropriate Action Regarding Staff Recommended Updates to the ASRS Board Governance Policy Handbook

Purpose

To present recommended revisions to the ASRS Board Governance Policy Handbook.

Recommendation

To accept the recommended revisions to the ASRS Board Governance Policy Handbook.

Background

Section B of the Handbook states, "This Handbook will be reviewed by the Board at least triennially or more often if necessary. It will be updated at the Board's direction. The Executive Director will recommend modifications for the Board's consideration."

The revisions to the handbook are being submitted for Board consideration and approval.

DRAFT

Arizona State Retirement System Board Governance Policy Handbook



APPROVED: January 16, 2004

REVISED:

December 17, 2004

February 18, 2005

December 6, 2005

December 15, 2006

April 18, 2008

May 14, 2009

July 31, 2009

April 16, 2010

April 15, 2011

July 15, 2011

October 19, 2012

October 25, 2013

January 24, 2014

Proposed: February 26, 2016

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A. VISION STATEMENT AND CORE VALUES

How...

ASRS Employees Deliver Service With PRIDE!

PROFESSIONALISM

We promote, strive for and expect individuals, teams, and divisions to possess professional qualities and skills to lead the organization.

- Displays a friendly, respectful and courteous demeanor even when confronted by adversity
- Has proactive and responsive approach to internal and external customer needs
- Possesses good communication and active listening skills
- Is a trusted contributor (manager, leader, SME, analyst, teammate)
- Takes personal accountability • Has subject matter expertise
- Has critical thinking skills • Has an honest, fair, non-judgmental mind-set
- Is adaptable to beneficial change • Adheres to the ASRS Code of Conduct

RESULTS

We treasure the achievements of individuals, teams, divisions and the agency that energize the organization.

- Meets goals and objectives
- Completes projects
- Produces quality work products
- Satisfies customers
- Attains individual accomplishments
- Manages risks successfully

IMPROVEMENT

We appreciate individuals, teams or divisions who drive the agency forward with new, innovative ideas and solutions.

- Promotes new ideas
- Enhances outcomes and performance
- Solves problems
- Enhances morale
- Improves relationships
- Increases efficiency, effectiveness or reduces costs

DIVERSITY

We recognize that utilizing different talents, strengths and points of view, strengthens the agency and helps propel outcomes greater than the sum of individual contributors.

- Encourages an attitude of openness and a free flow of ideas and opinions
- Treats others with dignity and respect
- Works effectively to accomplish goals with teams comprised of dissimilar individuals
- Recognizes and promotes skills in others attained on and off the job

EXCELLENCE

We celebrate individuals, teams and divisions who exceed expectations and deliver service with a PRIDE that permeates the organization.

- Surpasses member, stakeholder and associate expectations
- Demonstrates a willingness to go the extra mile to engender a positive public image
- Embraces change in a manner that inspires others
- Accepts responsibility and challenges with enthusiasm
- Takes a personal interest in promoting teamwork through effective use of communication (verbal, non-verbal, written and technological techniques)
- Creates a motivated, healthy and productive work environment that celebrates and rewards the accomplishments of others



**ARIZONA STATE
RETIREMENT SYSTEM**

B. ASRS BOARD CHARTER

Consistent with recognition of the fiduciary duties imposed upon each individual member of the Board, they are referred to in this Governance Handbook as “Trustees.”

The Board recognizes a sound governance structure is essential to fulfilling its duties and responsibilities. The Board prepared and adopted this Governance Handbook to establish the framework within which the Board intends to set governance and oversight policy.

The purpose of the Handbook is twofold. First, it is to provide orientation material for new Trustees (and executive staff) as to the roles, responsibilities, structure, procedures, policies, and activities in the governance and oversight of the ASRS. Second, it is to serve as an ongoing reference manual for current Trustees and ASRS staff.

This Handbook will be reviewed by the Board at least triennially, or more often if necessary. It will be updated at the Board’s direction. The Executive Director will recommend modifications for the Board’s consideration.

The Board's Role

The ASRS Board was established under state law to govern and administer the ASRS. The Board has only those powers and duties that have been delegated to it by the Legislature. Within this role, the Trustees have a duty as fiduciaries under the law to act solely for the benefit of members and beneficiaries. (A.R.S. § 38-714, Arizona Constitution, Article 29, Section 1)

The Board views itself as being primarily an oversight and strategic policy-making body. The Board has delegated the leadership, management and administrative functions to the ASRS Director and staff subject to ongoing monitoring and oversight. The Board has also delegated the hiring and termination of investment managers to the (Director’s) Asset Class Committees. The Board does not engage in regular day-to-day management functions of the ASRS.

Board Composition (A.R.S. § 38-713)

The Board is composed of nine Trustees who are appointed by the Governor pursuant to the following statutory requirements:

1. Five Trustees must be members of the ASRS as follows:
 - a. An educator
 - b. An employee of a political subdivision
 - c. A retired member
 - d. An employee of the state
 - e. An at-large member representing any ASRS member group
2. Four Trustees are not members of the ASRS and represent the public.

Trustee Terms, Resignations, and Vacancies

1. Each Trustee is appointed for a term of three years. The terms of office are staggered with three positions beginning and expiring on the third Monday in January of each year.
2. Trustees continue to serve in their positions after the expiration of their terms of appointment in accordance with law.
3. Individual Trustees may resign from their position on the Board by providing appropriate notice to the Governor. In such case, the resignation is not effective until accepted by the Governor. (A.R.S. §§ 38-291, 38-294)
4. Trustee position vacancies that otherwise occur before the expiration of a term will be filled by the Governor. (A.R.S. §§ 38-211, 38-713)
5. A position shall be deemed vacant if a trustee ceases to discharge their duties for a period of three consecutive months. (A.R.S. § 38-291)
6. Insufficient participation or engagement by a Trustee will be addressed by the Board Chair who will speak to the Trustee. If that does not resolve the problem, the Chair will contact the Governor’s Office for assistance.

Duties and Responsibilities

The Board proactively oversees the delivery of ASRS benefits and investment of trust assets. Consistent with fiduciary standards the ASRS Board will:

1. Oversee and participate in the long-term strategic planning process for the ASRS.
3. Appoint, annually evaluate, and, if necessary, remove the Director in accordance with state law.
4. Delegate the leadership, management and administrative responsibilities of the ASRS to the Director through the Director Position Description, and delegate the hiring and termination of investment managers to the Director through the asset class committee structure.
5. Approve the creation or dissolution of standing and special committees of the Board.
6. Approve the selection, and termination, and oversee the performance of the following external service providers:
 - a. Plan actuary and actuarial auditor
 - b. External financial auditor
 - c. General investment consultant(s)
 - d. Third-party administration providers for health and long-term disability
7. Review and approve macro-level strategic investment policies which guide the strategic vision for ASRS investments.
 - e. SIP001 Asset Allocation (PLAN)
 - f. SIP002 Fund Position and Rebalancing (PLAN)
 - g. SIP003 Asset Allocation (LTD)
 - h. SIP004 Fund Rebalancing (LTD)
 - i. SIP005 Securities Litigation
 - j. SIP006 Investment Manager , Partner, and Co-Investment Selection and Oversight
 - k. SIP007 Funding Policy
 - l. SIP008 Asset Allocation System
 - j.m. SIP009 Tactical Positioning and Rebalancing System
8. Establish high level or significant actuarial funding methods and assumptions, benefit option factors, and an asset valuation method consistent with state law.
9. Conduct an annual actuarial valuation of the ASRS liabilities and submit the results to the Governor and the state legislature as required by state law.
10. Conduct an actuarial experience investigation study every five years.
11. Review the Actuarial Cost Allocation method in use every five years and make changes if appropriate. This review to take place within one year of the actuarial experience study.
- ~~11-12.~~ Conduct an independent third-party audit of the actuarial funding of the ASRS benefits every five years.
- ~~12-13.~~ Review, approve, and monitor the budget and budget change proposals.
- ~~13-14.~~ Ensure the integrity of the financial control and reporting system.
- ~~14-15.~~ Provide technical and administrative information and make recommendations on legislative proposals affecting the ASRS, without advocating for or against pension benefits modifications.
- ~~15-16.~~ Hear appeals in accordance with policy established by the Board.
- ~~16-17.~~ Develop and approve other governance policies, directives, and rules for the administration of the ASRS as may be adopted from time to time.
- ~~17-18.~~ Obtain periodic updates from Board Committees regarding oversight activities.
- ~~18-19.~~ Review agency risk management activities at least once annually.
- ~~19-20.~~ Biennially approve the internal audit plan.
- ~~20-21.~~ Review and approve recommendations of the Director to appoint or remove the agency's internal auditor.
- ~~21-22.~~ Review annually the administration of the third-party administrator for the Supplemental Retirement Savings Plan (SRSP) as presented by the Investment Committee.

| ~~22-23.~~ _____ Review annually the administration of the third-party administrator for the Supplemental Salary Deferral Plan (SSDP) as presented by the Investment Committee.

| ~~23-24.~~ _____ ~~Review annually the administration of the third-party administrator for the 38-955 Plan as presented by the Investment Committee.~~

C. TRUSTEE POSITION DESCRIPTION

Primary Responsibility

Each Trustee is individually a fiduciary for the governance and oversight of the ASRS and is obligated to act solely for the exclusive benefit of the ASRS members and beneficiaries. (Arizona Constitution, Article 29, Section 1, and A.R.S. § 38-714)

Commitments

Trustees must be willing and able to devote the necessary time to fulfill their duties on the Board. This commitment includes the responsibility to:

1. Oversee the operations of the agency.
2. Act as a member of a nine-member board of trustees to provide leadership and set the strategic direction for the ASRS.
3. Prepare for and attend scheduled Board and Committee meetings.
4. Be an informed and active member of the Board, fully participating in the decisions and actions of the Board and its committees by making independent assessments and reasonable judgments.
5. Acquire and maintain the knowledge necessary to perform the duties of a Trustee.
6. Follow policies and procedures established by the Board.
7. Be accurate when communicating with other Trustees, members, beneficiaries, interested parties, the public, and ASRS staff, and always be clear on whether the statements being made are the position of the Board or solely the position of the individual Trustee.
8. Act collegially with the other Trustees and staff in the conduct of ASRS business.
9. Bring to the attention of the Board matters of concern that affect the conduct of the business of the Board or the ASRS.
10. Comply with the Board's Code of Ethics.
11. Adhere to state law regarding confidentiality and privacy of member records and benefits.
12. Adhere to Open Meeting Law. (A.R.S. §§ 38-431 et seq.)
13. Assume responsibility for evaluating the Trustee's own performance, the overall performance of the entire Board, and the performance of the Director.
14. Seek the advice of the Director and other Trustees when necessary to fulfill their fiduciary duties.
15. Delegate leadership, management and administrative responsibilities to the ASRS Director and where appropriate to outside service providers.

Trustee Fiduciary Responsibilities

Trustees have a duty to the beneficiaries to invest and manage the funds of the trust as a prudent investor would, in light of the purposes, terms, distribution requirements, and other circumstances of the trust.

1. This standard requires the exercise of reasonable care, skill, and caution, and is to be applied to investments not in isolation but in the context of the trust portfolio and as a part of an overall investment strategy, which should incorporate risk and return objectives reasonably suitable to the trust.
2. In making and implementing investment decisions, the trustee has a duty to diversify the investments of the trust unless, under the circumstances, it is prudent not to do so.
3. In addition, the Trustee must:
 - a. conform to fundamental fiduciary duties of loyalty and impartiality;
 - b. act with prudence in deciding whether and how to delegate authority; and
 - c. incur only costs that are reasonable in amount and appropriate to the investment responsibilities of the trusteeship.

Trustee Access to ASRS Resources

1. A Trustee shall not give instructions or assign tasks to individual ASRS staff.
2. A Trustee shall refrain from making negative comments on staff performance other than to the Director or acting Director.
3. A Trustee should make every effort to access ASRS resources through action of the full Board.

4. A Trustee may request from the Director, or the Director's designee, information or assistance necessary to meet the Trustee's responsibilities.
5. The Director may seek the advice of the Chair and Legal Counsel or refer the matter to the full Board before complying with individual Trustee requests that, in the Director's opinion, would require a significant amount of ASRS resources or cause disruption to the regular administration of the ASRS.
6. The Director shall share any vital or useful information resulting from a Trustee request with other Trustees.
7. The Director may refuse requests of individual Trustees that are in conflict with this policy.

D. DIRECTOR POSITION DESCRIPTION

General

1. The Board will appoint the Director who shall serve at the pleasure of the Board. (A.R.S. § 38-715)
2. The Director reports to the full Board.

Delegation of Responsibilities

1. Subject to the areas reserved to the Board by state law or the ASRS Board Charter, the Director is responsible for managing the regular operations of the ASRS in accordance with Board policies and directives.
2. The Director may make prudent delegation of the Director's responsibilities to other ASRS staff or outside service providers unless specifically prohibited by law or the Board.

Specific Duties and Responsibilities

The Director will:

1. Provide leadership to the ASRS in fulfilling its statutory purpose and achieving the vision, values, investment principles, and goals outlined in the strategic plan.
2. Maintain effective and credible relationships with the members and beneficiaries of the ASRS, participating employers, executive officers of state government, the legislature, employee and retiree organizations, the media, and the public at large.
3. Project a positive image as Director of the ASRS.
4. Act as official spokesperson for the Board and the ASRS.

With respect to legislation; if draft legislation is proposed affecting the ASRS that the ASRS Board has not already taken a position on, the Director will discuss such draft legislation at his discretion with legal representation, and the Board Chair or acting Board Chair, to formulate an agency response.

If the draft legislation does not pertain to a benefit modification, the Director may provide relevant information and also support or oppose the draft legislation.

If the draft legislation pertains to a benefit modification, the Director may provide relevant information but will not support or oppose the draft legislation.

If a single piece of draft legislation covers both a benefit modification item as well as a non-benefit modification item, the Director may support or oppose the legislation, but will communicate that the support or opposition relates to the non-benefit modification item and not the benefit modification item.

5. Act as liaison between the Board and other ASRS staff and service providers.
6. Safeguard the assets of the ASRS by appointing a custodian and developing and implementing proper internal controls.
7. Account for and be responsible for ASRS data, the collection of income from all sources, maintenance of accounts, and distribution of benefits.
8. Monitor the operational and funded status of the benefit plans under the ASRS.
9. Identify strategic issues involving the design or ongoing administration of the defined benefit plan, defined contribution system, health insurance program, long term disability program, the supplemental retirement savings plan, and the supplemental salary deferral plan. Initiate analysis or action as appropriate.
10. Provide necessary staffing, support and resources to the Board and its committees.
11. Proactively assist and advise the Board and its committees with regard to issues requiring Board policy or action.
12. Appoint or remove the Deputy Director, Chief Investment Officer, and Assistant Director(s) positions or other staff as required.
13. Appoint the State Social Security Representative.
14. Recommend to the Board the appointment or removal of the internal auditor.
15. Perform annual performance evaluations of those who have a direct reporting relationship to the Director.
16. Be responsible for the recruitment, hiring and day-to-day management of employees.

17. Ensure the accurate and timely distribution of pension benefits, survivor benefits, and refunds.
18. Review and approve transfers between the ASRS and other retirement plans. (A.R.S. §§ 38-730 and 38-921)
19. Review and approve domestic relations orders. (A.R.S. § 38-773)
20. Review and approve employer applications for ASRS membership. (A.R.S. § 38-729)
21. Adjust the maximum compensation limits (A.R.S. § 38-746), contribution limits (A.R.S. § 38-747) and maximum retirement benefit amounts (A.R.S. § 38-769) when the limits and amounts are adjusted by the United States Secretary of the Treasury pursuant to the Internal Revenue Code.
22. Maintain a process for handling member and participating employer appeals of staff decisions and statutory interpretations.
23. Assist the Board in reviewing and adopting actuarial assumptions, funding methods, benefit option factors and actuarial valuation methods for the ASRS.
24. Initiate the annual actuarial valuations, periodic actuarial experience studies and independent actuarial audits as required by state law or Board policy and work with the actuary in determining and/or recommending appropriate assumptions.
25. Oversee and assist the Chief Investment Officer in developing macro-level strategic investment policies.
26. Review and approve standard operating procedures for the Investment Management Division.
27. Execute and manage investments in accordance with Board directives.
28. Assist the Board in soliciting and selecting of the following service providers:
 - a. Consulting actuaries and actuarial auditors
 - b. External financial auditor
 - c. General investment consultants
 - d. Third-party administration providers for health and long-term disability benefits
29. Approve contract extensions.
30. Approve the selection and termination of the ~~38-955 Plan, the~~ Supplemental Retirement Savings Plan (SRSP) and the Supplemental Savings Deferral Plan (SSDP) investment options, and third-party administrators.
31. Review and approve, with the consensus of the CIO, recommendations from ASRS Asset Class committees, to hire and terminate investment managers/partners.
32. Review and approve recommendations from ASRS Asset Class committees to hire and terminate asset class consultants. The Investment Committee must consent to the Director's recommendation before a primary consultant for an Asset Class committee is hired or terminated.
33. Except as otherwise noted, oversee the performance of all other service providers to the ASRS.
34. Develop and recommend to the Board, an appropriated operating budget. Manage and monitor expenditures within the budget and provide reports to the Operations and Audit Committee or Board as necessary or directed.
35. Manage and monitor continuously appropriated expenditures as prescribed in A.R.S. §38-721.
36. Oversee the preparation of the ASRS Comprehensive Annual Financial Report.
37. Develop and deliver all operational and actuarial reports to the Governor and state legislature as required by state law after approval by the Board.
38. Perform other duties delegated by the Board.
39. Administer the Supplemental Retirement Savings Plan (SRSP) and report to the Investment Committee annually.
40. Administer the Supplemental Salary Deferral Plan (SSDP) and report to the Investment Committee annually.
- ~~41. Administer the 38-955 Plan and report to the Investment Committee annually.~~
41. Review, analyze, implement and present the ASRS Funding Policy (SIP007) to the Board every three years or whenever a significant event impacts the policy or whenever the Director recommends modification.

E. ELECTION OF BOARD OFFICERS

Board Officers

The Board will elect the following Board officers:

1. Board Chair
2. Vice-chair

Election Procedure

1. Any Trustee may serve as a Board officer.
2. Any Trustee may make nomination(s) for Board officer positions, including him/herself.
3. Nominations will be made at the regular meetings of the Board in approximately May of each year.
4. Board officers will be elected by majority vote at a regular meeting of the Board prior to the start of a fiscal year. The Board Chair position shall be elected first, followed by the Board Vice-chair position.

Term

Board officers will serve for the fiscal year following their election. A Board officer typically may not serve more than three consecutive terms in one of the Board officer positions but may serve an unlimited number of non-consecutive terms.

Resignations and Vacancies

1. A Board officer may resign from their position by providing written notice to the Board and also informing the Director by copying him on the notice.
2. Board officer vacancies that otherwise occur before the expiration of a term will be filled by the Board for the balance of the term in a manner agreed upon by the Board.

Removal

The Board may remove an officer before the end of the officer's term at any time by majority vote. The vacant officer position must be filled at the next meeting of the Board.

F. BOARD CHAIR POSITION DESCRIPTION

Responsibilities and Commitments

The Chair holds a position of leadership for the Board and the ASRS and must be willing and able to devote the time necessary to fulfill these special responsibilities as the leader of the Board. This commitment includes the responsibility to:

1. Convene and conduct Board meetings in a collegial, fair, and efficient manner following Board policies, procedures, and applicable state law.
2. Review and approve the agenda for regular and special Board meetings and include any issues requested by the Trustees or the ASRS Director in accordance with Section G. *Board and Committee Meeting Protocol* of this Handbook.
3. Ensure proper and timely flow of adequate information to the Board.
4. Solicit input from Trustees regarding matters before the Board.
5. Ensure adequate time is provided for effective study and discussion of business being considered by the Board.
6. Schedule executive session meetings as necessary and in compliance with state law.
7. Make committee assignments, including chair and vice-chair positions, to committees, taking into account the desires of the Trustees.
8. Execute such documents and other legal instruments on behalf of the ASRS as required by state law or authorized by the Board.
9. Discuss performance and behavior issues with Trustees who are having a negative impact on the ASRS.
10. Perform all other duties specifically identified by the Board.

Duties of Vice-chair

The Vice-chair will act as temporary Chair in the absence of the Chair.

G. BOARD AND COMMITTEE MEETING PROTOCOL

Rules of Order and Quorum

1. The Board and its committees shall operate under the Arizona Open Meeting Law and the general guidance of Robert's Rules of Order.
2. A quorum must be present for the Board or its committees to conduct business. A majority of the Board or committee will constitute a quorum.
3. Board or committee members may not attend meetings through delegates or authorize voting by proxy.

Scheduling of Regular, Special, and Emergency Meetings

1. The Board will adopt an annual schedule identifying the time and location of regular meetings. The Board may schedule some meetings outside of the City of Phoenix metropolitan area. The Board or Board Chair may modify this schedule at its discretion.
2. The Board Chair, or any four Trustees, may call for special or emergency meetings of the Board.
3. The Director, at his discretion or as requested by the Board Chair, may post any Board Committee meeting as a dual Board and Committee meeting in order to permit interested Board members not on the particular committee to attend and participate in discussions. The committee meeting will be conducted under the committee's charter and the non-committee Trustees will not make or vote on committee motions.

Meeting Notices

1. At least twenty-four hour notice of all Board and committee meetings, including executive sessions, will be provided to the public in accordance with Arizona Open Meeting Law. (A.R.S. § 38-431.02)
2. If permitted per Arizona Open Meeting Law, in the case of an emergency meeting requiring immediate action to avoid some serious consequence, shorter notice may be provided.
3. The Board Chair or Committee Chair shall normally provide the Trustees with seven calendar days' notice of all Board and committee meetings.

Trustee Attendance by Electronic Media

A Trustee may participate in any meeting of the Board by telephone or video conference in a manner consistent with Arizona Open Meeting Law and applicable Arizona Attorney General Opinions. (A.R.S. § 38-431)

Meeting Agendas

1. The Board Chair in consultation with the Director will prepare an agenda for each Board meeting containing the specific matters to be discussed, considered or decided at the meeting.
2. The Board may discuss, consider, or make decisions only on matters on the agenda.
3. Items can be placed on a Board meeting agenda by:
 - a. The Board Chair
 - b. A Trustee
 - c. A Board Committee
 - d. The Director

The Board Chair will add requested items to the Board meeting agenda within three months of the request. A longer period may be agreed upon by the Chair and the requestor.

4. The agenda for an executive session must contain a general description of the matter to be considered or decided at the meeting. (A.R.S. § 38-431.02)

Meeting Materials

1. The Director will make every reasonable effort to distribute related Board meeting materials to the Trustees at least five calendar days before each meeting.
2. The Director shall prepare a summary of the issues to be discussed, a staff or committee recommendation, if applicable, and a proposed motion or motions for the Board to consider.

Public Access and Testimony at Board Meetings

1. All meetings of the Board or committees are public and all persons who wish to attend may do so in accordance with Arizona Open Meeting Law. (A.R.S. §§ 38-431 et. Seq.)
2. Every agenda for regular Board or committee meetings will provide the public an opportunity to be heard. The Board Chair or Committee Chair may prescribe the time and manner of such public comment.
3. With regard to matters raised by a member of the public for which proper public notice has not been provided, no action may be taken at that meeting. The Board or committee may request the Director to investigate the issue further and report back to the Board or committee at a later meeting.
4. The Director, in consultation with the Chair, will convene meetings in facilities and locations that provide the public with reasonable access.
5. An individual who intends to speak at a meeting may be required by the Board to sign a register to permit compliance with minute taking required under state law.

Executive Sessions

1. The Board and its committees may conduct business in executive session as permitted by state law. (A.R.S. § 38-431) Executive sessions shall be presided over by the Chair of the Board or committee.
2. Executive sessions shall be closed to the public and subject to the following conditions:
 - a. The executive session must be held during a regular, special, or emergency meeting of the Board or committee.
 - b. The executive session must address only those subject matters permitted under Arizona Open Meeting Law (A.R.S. § 38-431, § 38-797.03):
 - Discussion or consideration of employment, assignment, appointment, promotion, demotion, dismissal, salaries, disciplining or resignation of a public officer, appointee or employee of any public body.
 - Discussion or consideration of records exempt by law from public inspection, including the receipt and discussion of information or testimony that is specifically required to be maintained as confidential by state or federal law.
 - Discussion or consultation for legal advice with the attorney or attorneys of the public body.
 - Discussion or consultation with the attorneys of the public body in order to consider its position and instruct its attorneys regarding the public body's position regarding contracts that are the subject of negotiations, in pending or contemplated litigation or in settlement discussions conducted in order to avoid or resolve litigation.
 - Discussions or consultations with designated representatives of the public body in order to consider its position and instruct its representatives regarding negotiations with employee organizations regarding the salaries, salary schedules or compensation paid in the form of fringe benefits of employees of the public body.
 - Discussion, consultation or consideration for international and interstate negotiations or for negotiations by a city or town, or its designated representatives, with members of a tribal council, or its designated representatives, of an Indian reservation located within or adjacent to the city or town.
 - Discussions or consultations with designated representatives of the public body in order to consider its position and instruct its representatives regarding negotiations for the purchase, sale or lease of real property.
 - Per § 38-797.03, discussions resulting from an member appeal of an administrative law judge determination regarding their Long Term Disability rights, benefits or obligations if such person requests a review of the determination in an executive session.
 - c. The executive session must satisfy all of the state's notice requirements under Arizona Open Meeting Law.
3. The Board will take no action while in executive session. Any such action must be taken during that portion of a meeting that is open to the public.

4. Trustees are prohibited under state law from publicly disclosing the discussions held in executive session. The Chair shall remind the Board or committee of this prohibition at the beginning of each executive session.

Meeting Minutes and Board Records

1. The Director will ensure that minutes of all meetings of the Board and committees are taken and made available to the public as required by state law.
2. The Director will prepare a written copy of the Board minutes taken at prior meetings of the Board and present it to the Board for approval at a subsequent meeting.
3. The Director will maintain records of the Board activities and actions in accordance with state law and such other documents necessary to establish a due diligence record of the Board's activities.

H. BOARD COMMITTEES and CHARTERS

General

The Board may establish standing or special committees to conduct the business of the full Board subject to the following conditions and limitations:

1. Board committees are responsible for overseeing various aspects of the ASRS administration and only have the authority to make recommendations to the Board.
2. Board committees may not act or speak for the Board.

Standing Committees

1. Standing committees are permanent committees established by the Board.
2. The standing committees of the Board are as follows:
 - a. Operations and Audit Committee (OAC)
 - b. External Affairs Committee (EAC)
 - c. Investment Committee (IC)

Special Committees

1. Special committees may be established from time to time by the Board Chair to address limited purposes and for limited times.
2. Special committees cease to exist automatically upon the completion of their stated purpose as determined by the committee chair.

Committee Members

1. The Board Chair shall appoint members of each committee for one-year terms.
2. The Board Chair shall appoint a chair and vice-chair for each committee. These committee officer position appointments will be for one-year terms.
3. The Board Chair may remove or replace members of a committee and committee officers before the end of the terms if the Chair determines such action is in the best interest of the ASRS.

Committee Operating Rules

1. The committee chair shall call committee meetings.
2. Committee meetings shall be subject to all of the public notification and meeting requirements established for the full Board in Section G of this Handbook.
3. Committee meetings are open to all Trustees, but only committee members may participate in the dialog or vote. However, if the meeting is posted as a dual meeting of the committee and Board, all participating Trustees may participate in the dialog but only committee members may vote.
4. The committees shall report to the Board, summarizing activities and recommendations on matters that have been referred to them.
5. The Director shall provide staffing, consulting, or other resources and support to Board committees as may be necessary and within budget to meet the responsibilities assigned by the Board.

Standing Committee Charters

Operations and Audit Committee Charter

General

The Operations and Audit Committee (OAC) is a standing committee of the Board responsible for overseeing the general operations and administration of the ASRS, and for recommending Board action when required.

Composition

The Operations and Audit Committee is composed of three or four members at the discretion of the Board Chair.

Responsibilities

1. Oversight

The OAC will meet regularly to evaluate ASRS performance in meeting strategic goals and objectives and managing administrative risks. Areas of responsibility are as follows:

- a. Member services, including all outreach, education, walk-in counseling, member correspondence, and call center services and programs.
- b. Employer services, including all outreach, education and call center services and programs.**
- ~~b.c.~~ Technology services, including development, maintenance, security, performance, and compliance with state or industry standards.
- ~~c.d.~~ General accounting and financial reporting, including compliance with industry standards, investment accounting, payroll, accounts receivable and payable, pension payroll, and contribution reporting.
- ~~d.e.~~ Collection and maintenance of member/employer accounts, including contributions, salaries and service, demographic data, and security.
- ~~e.f.~~ Benefit administration, including calculations and disbursements for all benefit types.
- ~~f.g.~~ Strategic, agency-wide staffing issues.
- ~~g.h.~~ Administration and plan design of the ASRS health insurance program.
- ~~h.i.~~ Administration and plan design of the ASRS long term disability program.
- ~~i.j.~~ Plan design of the ASRS 401(a) defined benefit plan.
- ~~j.k.~~ Governance policies and practices.
- ~~k.l.~~ Review appropriated budget request proposals; ongoing administration of the ASRS appropriated budget and continuously appropriated budget.
- m. General contract management and procurement.**
- ~~n.~~ **Strategic communications**
- ~~m.o.~~ Strategic initiatives approved by the Board affecting operations or administration.

2. The OAC will operate as the Audit Committee for the agency and will perform the necessary duties of an audit committee including:

- a. Oversight of the agency's enterprise-wide risk management program.
- b. Review accept, and oversee changes to -and approval of the biennial Audit Plan, and determine if the changes require Board review.
- c. Review and follow up on operational, investment, employer, and vendor audits.
- d. The OAC will use its discretion in reporting or making recommendations to the Board except in cases when Board action is required by governance policy (see Internal Audit Charter).

3. Actions requiring independent Board review

The OAC will use its discretion in reporting or making recommendations to the Board except in cases when Board action is required by governance policy. Specifically, the OAC will forward its recommendations to the Board on the following matters:

- a. Selection or removal of a vendor or vendors to administer the ASRS health insurance programs.
- b. Selection or removal of a vendor to administer the ASRS long term disability program.
- c. Selection or removal of the ASRS external or internal auditor.
- d. Biennial review of the agency's risk management program.

- e. Biennial approval of the internal audit plan.
- f. Appropriated budget request proposals..

Internal Audit Charter

Introduction

The Internal Audit Division (IAD) is a vital part of the ASRS, providing independent, objective assurance and consulting services designed to add value and improve the organization's operations. The IAD is responsible for helping the ASRS leadership accomplish its objectives by performing independent assessments of the systems of risk management, internal controls and operating efficiency, guided by professional standards and in bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes. The IAD aspires to enhance and protect organizational value by providing risk-based and objective assurance, advice and insight.

Organizational Status

The organizational status and support accorded to the IAD by the ASRS Board of Trustees (Board), the Operations and Audit Committee (OAC), and senior management are major determinants of the scope and value of the internal audit function to the agency.

The Chief Internal Auditor reports functionally to the Board through the OAC and administratively to the Director of the ASRS. The Director in consultation with the OAC or OAC Chair evaluates the performance, and subject to required ADOA guidelines, determines the remuneration of the Chief of Internal Audit. The OAC in consultation with the Director will recommend to the Board the appointment and removal of the Chief of Internal Audit.

Internal Audit personnel are independent of the ASRS activities they audit and will have no authority or responsibility for any of the procedures or activities of the ASRS. The Chief Auditor and internal audit staff are not authorized to perform operational duties for the organization. Additionally they are not authorized to initiate or approve accounting transactions external to the IAD. Internal audit staff is not authorized to direct the activities of any organization employee not employed by the internal audit division. This independence promotes essential impartial and unbiased judgments, and assures appropriate consideration and effective action on audit findings and recommendations.

The Chief of Internal Audit shall have free unrestricted access to the Chair of the OAC and the Chair and members of the Board, subject to applicable state and federal laws.

To accomplish audit objectives, Internal Audit staff is authorized to have full, free, and unrestricted access to any of the ASRS records, property, personnel, employer members, contractors, vendors, members and retirees relevant to any subject under review. Where the need is indicated, special arrangements will be made for the examination of confidential information. Internal auditors will exercise due diligence in the safeguarding and use of these resources. The Chief Auditor shall ensure that internal audit staff is instructed in the handling and safeguarding of confidential information.

Internal Audit Standards

Internal Audit activities comply with the following:

- ASRS objectives and policies;
- International Standards for the Professional Practice of Internal Auditing and the Code of Ethics of the Institute of Internal Auditors, Inc.;
- Generally accepted government auditing standards; and
- All other applicable professional standards.

Scope Of Activities

The scope of internal audit work includes (1) the examination and evaluation of the adequacy and effectiveness of the agency's internal control systems, and (2) the quality of performance in carrying out assigned responsibilities.

The scope of the above work includes:

- Developing a biennial audit plan using risk analysis, and obtaining approval from the Board.
- Ensuring that risks within and outside the organization are appropriately identified and managed.
- Reviewing the reliability and integrity of financial and operating information and the means used to identify, measure, classify, and report information.
- Evaluating compliance with current policies, plans, procedures, laws, and regulations.
- Appraising the safeguarding, and economical and efficient use of the organizations resources.
- Reviewing operations or programs to ascertain whether results are consistent with established objectives, goals, [strategies and risks](#), and are in synchrony with industry best practices and whether the operations or programs are being carried out as planned.
- Evaluating in-system design related to internal controls.
- Performing special reviews and investigations as requested by the Director, the Board, and the OAC.
- Investigating reported fraud occurrences by following the agency's "Fraud, Criminal Acts, Internal Investigation and Whistleblower Policy."
- Investigating reported occurrences of fraud, embezzlement, theft, waste, etc., and recommending controls to prevent or detect such occurrences.
- Performing investigations to ensure that employers appropriately enroll employees, accurately report member earnings, follow appropriate statutes related to retirees returning to work and appropriately report other employee data.
- When audited, ensuring that contractors, including third-party administrators are meeting the objectives of the contracts, while in conformance with applicable laws, regulations, policies, procedures and best practices.

Reporting

The results of internal audits are reported to the OAC, the Director, appropriate managers, and oversight bodies. On a quarterly basis, or more frequently at the request of the OAC Chair, the Chief of Internal Audit will meet with the OAC to discuss the status of the audit plan and other significant issues involving the IAD.

The IAD will establish and maintain a system for tracking corrective action for significant audit findings reported by internal and external auditors.

Management will provide the corrective action accomplished to the IAD on a timely basis for tracking, consolidation and reporting purposes.

An external peer review of the IAD will be performed every five years and the results reported to the OAC.

Authority

The IAD was established by the Board of the ASRS. The Charter is incorporated into the ASRS Board Governance Policy Handbook and is approved by and all future amendments are approved by the Board through a majority vote. This Charter shall be reviewed at least [tri](#)annually and updated as required by the OC.

External Affairs Committee Charter

General

The External Affairs Committee is a standing committee of the Board responsible for assisting the Board with legislative matters, the development of administrative rules, and reviewing the Agency ~~communications-~~ Public Affairs program.

Composition

The External Affairs Committee is composed of three or four members at the discretion of the Board Chair.

Responsibilities

The External Affairs Committee has the following responsibilities:

1. Legislation

- a. Work with the Director to identify legislative proposals to facilitate the efficient administration of ASRS operations and report Committee recommendations to the Board.
- b. Review new legislation and plan design changes and report Committee findings and recommendations to the Board for action.
- c. Review and monitor Board and ASRS activity regarding state legislative matters to help ensure compliance with the Legislative Review Policy and state law prohibitions on Board advocacy for or against legislation for benefit modifications. (A.R.S. § 38-714)
- d. Oversee communicating the actuarial contribution requirements and administrative costs to the legislature and other relevant parties.

2. Administrative Rulemaking

- a. Review practices and procedures for inclusion in administrative rules for the ASRS as required and consistent with state law.
- b. Recommend to the Board the addition, deletion, or modification of administrative rules and substantive Board policies.

3. Annual ~~Communications~~ Public Affairs Program

~~Review the agency's annual communications program to ensure that members, employers, legislature, Governor's Office, and other constituents and interested parties are appropriately notified and/or informed about ASRS' activities, meetings, investments and other information.~~

Review the agency's annual Public Affairs program to ensure the legislative, Governor's Office, member associations, constituents, and interested parties are appropriately notified and/or informed about ASRS activities, meetings, investments and other information.

4. The Committee is also responsible for other issues or topics that reasonably pertain to external affairs.

Investment Committee Charter

General

The Investment Committee (IC) is a standing committee of the Board responsible for assisting the Board in overseeing the ASRS investment program.

Composition

The Investment Committee is composed of three or four members at the discretion of the Board Chair.

Duties and Responsibilities

1. Recommend to the Board the ASRS investment goals and objectives.
2. Recommend to the Board the ASRS strategic asset allocation policy which is expected to achieve the investment goals and objectives.
3. Recommend to the Board ASRS Strategic Investment Policies and review annually the ASRS Investment Policy Statement (IPS).
4. Review and recommend to the Board changes in investment-related sections of the ASRS Board Governance Policy Handbook.
5. Review the Asset Class Committee's activities and asset class presentations.
6. Receive and review asset class committee minutes.
- ~~6-7.~~ Review recommendations regarding changes to asset class performance benchmarks. Subsequent approval by the Board is required.
- ~~7-8.~~ Review the Tactical Fund Positioning/Portfolio Rebalancing actions.
- ~~8-9.~~ Recommend to the Board the selection, and termination of the ASRS general investment consultant(s) and oversee their performance.
- ~~9-10.~~ Engage the Director and CIO regarding the Investment Management Division's organizational strategic planning.
- ~~10-11.~~ Receive and discuss annually ASRS investment risk reports.
- ~~11-12.~~ Review annually the administration of the third-party administrator for the Supplemental Retirement Savings Plan (SRSP) and annually report any issues to the Board.
- ~~12-13.~~ Review annually the administration of the third-party administrator for the Supplemental Salary Deferral Plan (SSDP) and annually report any issues to the Board.
- ~~13.~~ ~~Review annually the administration of the third-party administrator for the 38-955 Plan and annually report any issues to the Board.~~
14. Review and comment if necessary on audits related to investment management.
- ~~15.1.~~ ~~Receive and review asset class committee minutes.~~

I. ASSET CLASS COMMITTEES

Purpose

Asset class committees are designed to:

1. Provide authority and responsibility to the Director, CIO, and IMD staff regarding the implementation of the ASRS Strategic Asset Allocation Policy (SAAP) and associated selection of investment managers.
2. Improve the efficiency and effectiveness of the ASRS investment decision-making process.
3. Provide consistency and uniformity in investment decision-making frameworks.

Asset class committees are not deemed to constitute a sub-committee of the Investment Committee (IC) or full Board.

Duties and Responsibilities

The Director is delegated responsibility for the day-to-day management of the asset class committees.

Investment Management Division staff will be assigned to asset class committees as appropriate to provide subject matter expertise.

Asset Class Committee consultants will operate as staff extension consultants under the direction of the CIO.

Organizational Structure/Composition/Voting Protocol

The ASRS has two asset class committees:

1. Public Markets Committee (PUBMC) – This committee will manage ASRS investments in public markets and investments with public market-like characteristics. This includes traditional public U.S. and international equity and fixed income markets, bank loans, opportunistic public investments, global tactical asset allocation (GTAA), commodities, currencies, non-traditional assets and absolute rate of return strategies.
2. Private Markets Committee (PRIVMC) – This committee will manage ASRS investments in private markets and investments with private market-like characteristics. This includes private equity, real estate*, private fixed income and opportunistic private investments.

*Includes public real estate/REIT investments.

Each asset class committee will contain the following members:

- a. The Director and/or CIO (or their designee) who will chair the committee.
- b. ASRS staff responsible for portfolio management.
- c. Designated staff-extension consultants.

To ensure the timely flow of information, the CIO will communicate to the IC, information regarding activities of the Asset Class Committees.

Voting members of the Committee include the Director, CIO and one or more IMD Portfolio Managers. Investment manager selection decisions require the consensus of both the Director and CIO.

Staff-extension Investment Consultants

Staff-extension investment consultants are considered as an extension of the CIO and IMD staff and will be evaluated, interviewed, hired, assigned, terminated by the CIO with input from the Director and staff.

Staff-extension investment consultants will be utilized by the CIO and IMD staff to assist in the investment manager searches and other activities pertaining to the selection and monitoring of investment managers.

Selection of a particular staff-extension investment consultant will be based on those available from the approved pool of consultants and their particular strengths and ability to add value to the ASRS.

J. TRUSTEE ORIENTATION AND EDUCATION PROGRAM

General

The Board finds it is critical for the sound governance of the ASRS for Trustees to be fully informed with regard to the nature, purpose, structure, operational systems and processes of the ASRS. The Board further finds that it is important that Trustees are provided with education and training in areas that will facilitate the performance of their governance and oversight responsibilities as trustees and fiduciaries for the ASRS.

New Trustee Orientation Program

1. The Director will develop and present with the Board Chair to new Trustees an in-depth New Trustee Orientation session designed to inform new Trustees of the key functions of the ASRS and their responsibilities.
2. Newly appointed Trustees are expected as part of their fiduciary responsibilities for the ASRS to participate in the New Trustee Orientation Session within approximately two months of their appointment.
3. The Board believes the following orientation and education topics will increase Trustee understanding:
 - a. History and background of the ASRS.
 - b. Introduction to the executive management team and other staff as determined by the Director.
 - c. The governance role of the Board and the management role of the executive staff of the ASRS.
 - d. The state laws establishing the ASRS and the application of other state and federal laws.
 - e. A briefing on the fiduciary duties and liabilities of Trustees and other fiduciaries of the ASRS.
 - f. A briefing on conflicts of interest and ethics laws and policies and the state mandated courses on conflicts of interest laws.
 - g. A review of the Board Governance Handbook and other information and documentation deemed relevant by the Director or Board Chair.
 - h. A review of general retirement pension, health benefits design, LTD, and other specific benefits provided by the ASRS.
 - i. A review of general actuarial funding terminology and principles and the most recent actuarial reports.
 - j. A review of general institutional investment principles and the various investment policies in place.
 - k. A review of the reporting and disclosure requirements of the ASRS to state entities.
 - l. A review of the legal (state and federal) and political environment in which the ASRS operates.
 - m. A review of the current ASRS strategic plan and new issues, trends and developments affecting the ASRS.
 - n. The structure and model for the management and operation of the ASRS.
 - o. The legal and legislative environment.
 - p. A description and tour of ASRS offices as may be practicable.

Trustee Education Policy

1. Each Trustee is responsible for evaluating their educational needs and obtaining knowledge of specific subject matters. The Director will assist them in obtaining information on conferences or seminars to meet their education needs.
2. Trustees are to attend ongoing educational sessions to stay current on fiduciary responsibilities and are encouraged to attend conferences and seminars relating to:
 - a. Investment issues and trends;
 - b. Pension, healthcare, LTD, and benefits design;
 - c. Fiduciary management of employee benefit trusts;
 - d. Other subjects related to the oversight of the ASRS;
 - e. Training required by the state of Arizona.
3. The Director will periodically provide to the Board information on available conferences and seminars.
4. The Director shall arrange for an annual fiduciary education session for the Board.

Reimbursement of Education Expenses

Payment and/or Reimbursement of travel-related expenses for Trustee orientation and education will be in accordance with the state Travel Policy.

K. STRATEGIC PLANNING POLICY ~~(updated 10/25/2013)~~

General

Strategic planning is essential to ensuring the sound governance, oversight, and management of the ASRS. Since 1998, the ASRS has built its operation around a strategic model based on five organizing principles:

1. Look ahead with clarity of purpose by establishing an agency Vision, Values, Priorities, and Goals
2. Measure performance
3. Initiate strategic initiatives, as needed
4. Construct cost-efficient budgets and an effective workforce; and
5. Implement strong governance practices

The objectives of this policy are to:

1. Ensure that strategic priorities of the ASRS are primarily determined by the Board of Trustees, with active engagement, including recommendations, by the Director and senior staff.
2. Outline the process the ASRS will utilize when developing a Strategic Plan.
3. Describe how the Director will communicate with the Board regarding the agency's progress implementing the plan.

Strategic Planning Policy

The Board and Director will work collaboratively to ensure that:

1. Strategic priorities facing the ASRS over the short, medium, and long-term are identified, discussed, prioritized, and included in the Strategic Plan.
2. Strategic planning discussions remain focused on strategic issues that have been identified, and the strategic direction of the ASRS.
3. Strategies are developed and incorporated into the Strategic Plan to address the short, medium, and long-term priorities that have been identified by the Board.
4. The Board is updated at least annually regarding the agency's progress addressing strategic priorities.
5. Adequate resources are in place to support the successful execution of the Strategic Plan.
6. The agency's governance policy is periodically examined and updated to ensure that sound governance practices are in place.
7. Delineation of authority and autonomy is regularly discussed.

Strategic Planning Development Process

1. In preparation for Board meetings with strategic planning agenda items, the Director will ask the Board Chair for direction on how to proceed in discussing, modifying, or developing strategic priorities.
2. At least once annually, during Board meetings with strategic planning agenda items, the Trustees and Director will determine:
 - a. Which strategic topics they would like discussed during the year.
 - b. The number of Board meetings they would like to devote to strategic planning.
 - c. Preferences for how strategic discussions should be facilitated.
 - d. To facilitate the discussion, the Director will provide Trustees with a recap of:
 - Strategically-focused topics that have been discussed at prior Board and Committee meetings,
 - Strategically focused topics that have been requested by Trustees, but not yet scheduled for discussion,
 - Strategically focused topics that the Director recommends be considered for discussion.
3. Based on Trustee feedback, staff will develop a planning schedule for the upcoming year.
4. During strategic planning sessions, staff will provide background information, if needed, on topic areas that have been scheduled for discussion. This background information could include topical research, performance data, or staff's current analysis of the organization's strengths, weaknesses, opportunities, and threats, or other material requested by Trustees.
5. The Strategic Plan can be modified iteratively over its term or it can be modified only in preparation for a new Strategic Plan.

6. In the final year of the current Strategic Plan, trustees and the Director will focus Board Meetings with strategic planning agenda items on the identification of priorities for the next Strategic Plan.

Strategic Plan Reporting

1. Once the Board has identified its strategic priorities, the Director will work with staff to develop implementation strategies and performance measures for each of the priorities.
2. Staff will report at least annually to the Board on its progress addressing the strategic priorities that have been identified.
3. Trustees or the Director may request that priorities be added or deleted as needed.

L. BOARD CODE OF ETHICS

General

The Board has established the following Code of Ethics for the individual Trustees to comply with applicable state law and its duties of loyalty as fiduciaries for the ASRS.

The Board recognizes that compliance with these requirements is often complex and confusing. Trustees are strongly encouraged to seek the advice of the ASRS legal counsel whenever there is uncertainty regarding the required level of compliance from the Trustee.

State Law

Trustees will adhere, without limitation, to the following state laws as such apply to the conduct of their affairs and to carrying out their duties as trustees and fiduciaries for the ASRS:

1. Conflict of Interest Laws (A.R.S. § 38-503)

Under the conflict of interest laws, Trustees who have a conflict of interest must disclose the interest and refrain from participating in the matter.

A.R.S. § 38-503, provides in pertinent part:

- a. Any public officer or employee of a public agency who has, or whose relative has, a substantial interest in any contract, sale, purchase or service to such public agency shall make known that interest in the official records of such public agency and shall refrain from voting upon or otherwise participating in any manner as an officer or employee in such contract, sale or purchase.
- b. Any public officer or employee who has, or who's relative has, a substantial interest in any decision of a public agency shall make known such interest in the official records of such public agency and shall refrain from participating in any manner as an officer or employee in such decision.

The conflict of interest laws require a Trustee to examine proprietary and pecuniary interests of the Trustee and certain relatives of the Trustee. "Relative" is defined expansively and includes "the spouse, child, child's child, parent, grandparent, brother or sister of the whole or half blood and their spouses and the parent, brother, sister or child of a spouse." (A.R.S. § 38-502)

A Trustee must recognize that even though the Trustee may not have a substantial interest in a decision or a contract, if one of the Trustee's relatives described in A.R.S. § 38-502 has a substantial interest in a decision or a contract, the Trustee must disclose the interest and refrain from participating in the matter. Trustees have an affirmative obligation to become aware of the interests of relatives in matters that may involve the Trustees.

When a Trustee assesses whether the Trustee has a conflict of interest, the Trustee first must evaluate whether the Trustee or any of the Trustee's relatives has a "substantial interest" in the matter under consideration. An interest is "substantial" if it is not defined by statute as "remote" and if it is "any pecuniary or proprietary interest, either direct or indirect," of the Trustee or the Trustee's relatives. (A.R.S. § 38-502) The term "interest" is a pecuniary or proprietary interest, by which a person will gain or lose something, as contrasted with a general sympathy, feeling or bias.

The Legislature has determined that certain interests do not influence a person's decisions or actions impermissibly. The Legislature has defined these interests as "remote interests" and has listed them in A.R.S. § 38-502. Unless the pecuniary or proprietary interest at issue falls within one of the situations statutorily specified by the Legislature to be remote, the interest is substantial and creates a conflict of interest.

To determine whether a "substantial interest" exists, the Trustee should ask these questions:

- a. Will the decision affect, either positively or negatively, an interest of the Trustee or the Trustee's relatives?

- b. Is the interest a pecuniary or proprietary interest?
- c. Is the interest other than one statutorily designated as a remote interest?

If the answer to each of these questions is “yes,” then a substantial interest exists which requires disclosure and nonparticipation by the Trustee.

Any disclosure of a conflict resulting in a Trustee recusing him/herself from a Board or Committee decision, will be recorded in the minutes of that meeting.

2. Gifts and Gratuities

A Trustee will not ask for or accept anything (emolument, gratuity or reward, or any promise thereof) that is not authorized by law for performing the Trustee’s duties.

A Trustee will not use or attempt to use the Trustee’s position to secure valuable things or benefits for the Trustee, unless the benefits are part of the Trustee’s normal compensation.

A Trustee may not receive or agree to receive directly or indirectly compensation other than as provided by law for any service rendered or to be rendered by the Trustee personally in any matter pending before the ASRS.

Trustees are responsible for maintaining the integrity of both the ASRS and the State of Arizona. As a result, no Trustee of the ASRS is permitted to:

- a. Use his or her official position or attendance at a conference, seminar or training for personal gain.
- b. Solicit gifts.
- c. Accept gratuities.
- d. Accept gifts or favors that may appear to be designed to influence the Trustee’s official conduct.
- e. Permit him/herself to be placed under any kind of personal obligation that could lead a person to expect official favors.

The prohibitions in this policy are in effect any time Trustees can be viewed as being on official business for the ASRS or State of Arizona.

3. Contracts for supplies and services (A.R.S. § 38-503)

A Trustee may supply equipment, material, supplies or services to the ASRS **only** pursuant to an award or contract let after public competitive bidding. (A.R.S. § 38-503) The requirement of public competitive bidding is in addition to the disclosure and non-participation requirements of the Conflict of Interest Laws.

4. Disclosure of interests (A.R.S. § 38-509)

When a Trustee determines that the Trustee has a substantial interest in a matter, the Trustee must disclose the interest and withdraw from all participation in the decision or contract.

The Trustees must “maintain for public inspection in a special file all documents necessary to memorialize all disclosures of substantial interest made known pursuant to this article.” (A.R.S. §§ 38-501 to -511)

A Trustee who has a conflict of interest in any ASRS decision or in the award of a contract *must* provide written disclosure of that interest in the ASRS’ special conflict of interest file. (A.R.S. § 38-503). A Trustee may either file a signed written disclosure statement fully disclosing the interest or file a copy of the official minutes of the ASRS which fully discloses the interest. (A.R.S. §§ 38-502, -509)

Having disclosed the conflict of interest and withdrawn from participation in the matter, the Trustee must not communicate about the matter with anyone involved in the decision-making process. (A.R.S. § 38-503)

Code of Ethics

1. New Trustees are required to attend any state-provided Public Service Orientation Ethics Course.
2. Trustees shall maintain the highest ethical conduct at all times consistent with their fiduciary duty to act only for the exclusive benefit of the ASRS members and beneficiaries under state law.
3. The Trustees shall conduct themselves with integrity and exercise care, prudence and diligence in handling the affairs of the ASRS.
4. The Trustees must disclose conflicts of interest and appearance of conflicts of interest as defined under state law with respect to their fiduciary responsibility. Where a conflict of interest does exist, the Trustee must refrain from voting or otherwise participating in any manner with regard to the subject matter of the conflict.
5. The Trustees shall not:
 - a. Deal with assets of the ASRS for their own interest.
 - b. Accept gifts or gratuities prohibited by state law.
 - c. Act in any transaction involving the ASRS on behalf of any party whose interests are adverse to the interests of the ASRS or the members and beneficiaries.
 - d. Receive any monetary or other valuable consideration for their personal account from any party conducting business with the ASRS.

Loyalty Oath

Trustees are required to sign a State of Arizona Loyalty Oath upon their appointment to the ASRS Board. (See Appendix E.)

Political Activities

Though Staff are free to make contributions to a political campaign of a trustee or to any charitable organization associated with or supported by a Trustee, Trustees shall refrain from soliciting campaign or charitable contributions from staff, including but not limited to the purchase of, selling, distributing, or receiving payment for tickets for any political fundraiser, political meeting, or other political event.

M. BOARD PERFORMANCE EVALUATION

General

The Board will conduct an annual performance evaluation of its effectiveness and that of its committees as the governing fiduciary body for the ASRS. This will serve as a means of helping ensure that the Board continues to effectively meet its responsibilities and duties.

Board Evaluation Policy

1. The Board Chair, working with the Director, will be responsible for coordinating and conducting the Board performance evaluation process.
2. The evaluation will focus on the operations and decision-making processes of the Board as well as the outcome of ASRS actions.
3. The Board Chair will provide to each Trustee the performance evaluation forms approved by the Board. The Trustees are to conduct their evaluation in the first quarter of each calendar year, preceding the Director's evaluation.
4. The Board will seek input from the Director with respect to the staff's perception regarding the Board's and Board Committees' performance.
5. The Board may seek input from the Assistant Attorney General regarding an annual evaluation of the Board's compliance with statutory and governance responsibilities.

Board Performance Evaluation Process and Forms

A way for the Board to maintain excellence in governance is to develop a policy of reviewing its own performance on an annual basis. A two-step evaluation process has been adopted:

Part A: Trustee Self-Evaluation

The purpose of having each individual Trustee evaluate him/herself is to encourage introspection and heighten awareness of the important areas of fiduciary responsibility. Trusteeship carries with it both a personal and collective duty to the members and beneficiaries. The "Trustee Self-evaluation" is an abbreviated outline and periodic reminder of what constitutes "good trusteeship."

It is recommended that this self-evaluation be performed annually, by each individual Trustee before the overall board evaluation is performed. Each year, the Board can choose how to handle the results of the evaluations.

The Trustee Self-evaluation is for the personal use of each Trustee to facilitate the full and frank examination of each Trustee's own performance. The form need not be completed or submitted, but rather each Trustee is asked to review the questions as they contemplate their self-evaluation. The objective is for this annual exercise to be helpful to the ASRS and not embarrassing to any individual.

Part B: Overall Board Evaluation

By discussing and developing an overall board evaluation, the Board demonstrates its intention to establish a process for Trustees to evaluate Board performance with candor, objectivity, and a broad perspective. Such an evaluation process presents special challenges, and it may be difficult for Trustees to speak frankly about the performance of the Board as a whole, especially in situations where there is room for improvement.

Notwithstanding this difficulty, the benefits of an annual evaluation will enhance the Board's effectiveness in carrying out the mission of the ASRS.

The "Overall Board Evaluation" form contains elements of "best practices" of public retirement systems and is for the personal use of each Trustee to facilitate the full and frank discussion among the Trustees. The completed form does not need to be submitted to the full Board.

N. DIRECTOR EVALUATION PROCESS

General

The Board has delegated the responsibility of administering the ASRS to the Director and, therefore, understands that an evaluation of the performance of the Director's performance is important. The Board may conduct more frequent performance evaluations of the Director as it deems necessary.

Objectives

The evaluation of the performance of the Director is intended to:

1. Assist the Board in establishing and communicating clear, meaningful goals and performance targets for the Director.
2. Enable the Board to hold the Director accountable for performance.
3. Allow the Director to receive objective and timely feedback to help the Director perform at expected levels.

Evaluation Procedure and Criteria

1. In the first quarter of each calendar year, the Board, working with the Director, will adopt a set of performance goals and evaluation criteria to be used in evaluating the performance of the Director for the upcoming calendar year.
2. The evaluation of the performance of the Director will take place in the first quarter of each calendar year after the Board's self-evaluation is completed and will cover the preceding calendar year.
3. The subject matter addressed in the performance evaluation will include:
 - a. Leadership
 - b. Management/Administration/Budgeting
 - c. Communication
 - d. Policy matters
 - e. Staff development
 - f. Progress toward achieving performance business objectives previously established by the Board for the year
4. Other matters identified by the Board
5. The Director will prepare a written summary report of accomplishments and performance for the Board to use in their discussions of his/her performance.
 - a. The ASRS Human Resource Department will conduct a reverse evaluation of the Director, the results of which will be presented to the Board. Participation in the reverse evaluation is voluntary and anonymous and will include the following staff:
 - b. Deputy Director - Operations
 - c. Assistant Director - External Affairs
 - d. Chief Investment Officer
 - e. Chief of Administrative Services
 - f. Manager of Human Resources
 - g. Manager of Management Support Services
 - h. Assistant Attorney General Representative
6. The Board will reach consensus and provide a report of the Director's performance, and identify areas for improvement, if necessary.
7. The Board will meet with the Director to present and discuss the Board's evaluation of the Director's performance.

Appendix A – Trustee Self Evaluation

It is not necessary to turn this document in, it is to assist board members in contemplating their evaluation.

Review the following statements in relation to your involvement as a Trustee of the ASRS. Rank answers using the following scale: **5 - always, 4 - almost always, 3 - sometimes, 2 - almost never, 1 - never**

| | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| 1. I attend the Board and Committee meetings I am expected to attend. | | | | | |
| 2. I contribute to the discussion in a meaningful and helpful way. | | | | | |
| 3. I fully understand my fiduciary duties and act for the benefit of all members, not merely for a particular constituency. | | | | | |
| 4. I make an effort to be educated on the aspects of the ASRS that I do not understand. | | | | | |
| 5. I comply with state laws and Board policies regarding conflicts of interest. | | | | | |
| 6. I read the materials distributed before the Board meeting so I can constructively participate and make timely decisions. | | | | | |
| 7. I work with the other Trustees and the staff in a collegial way. | | | | | |
| 8. I understand that work requests to staff and outside consultants need to be agreed to by the Board or the Director and I act accordingly. | | | | | |
| 9. I work with the Director in a way that creates an atmosphere of trust and cooperation. | | | | | |
| 10. I understand the Director works for the entire Board and not for individual trustees and I act accordingly. | | | | | |
| 11. I communicate Board governance problems to the Board Chair. | | | | | |
| 12. As a Trustee of the Board, I have re-read Section L “Board Code of Ethics” and Appendix F “Loyalty Oath,” of the Board Governance Policy Handbook and I reaffirm my understanding of these items. | | | | | |

I am most concerned about the following issues: _____

Appendix B – Overall Board Evaluation

Name (optional) _____ Date: _____

This document should be completed and submitted to the Board chair.

Rate the following statements in relation to the overall operation of the Board. Rank answers using the following scale: **5 - always, 4 - almost always, 3 - sometimes, 2 - almost never, 1 - never**

| | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| 1. The Board maintains an effective oversight role with regard to benefits and investments issues. | | | | | |
| 2. The Board knows and understands the ASRS Strategic Plan, and reflects this understanding when addressing key issues throughout the year. | | | | | |
| 3. The Board engages in long-range strategic thinking and planning. | | | | | |
| 4. The Board has achieved the business objectives it set out to accomplish this past year. | | | | | |
| 5. The Board stays abreast of issues and trends affecting the ASRS, using this information to assess and guide the ASRS over the long term. | | | | | |
| 6. The Board conducts a comprehensive evaluation of the Director annually. | | | | | |
| 7. The Board ensures that new Trustees receive a prompt, thorough orientation. | | | | | |
| 8. Board meetings are conducted in a manner that ensures open communication, meaningful participation, and sound resolution of issues. | | | | | |
| 9. The Board meeting agendas are well-balanced, allowing time for the most critical issues. | | | | | |
| 10. The Board and Committee meetings are handled efficiently. | | | | | |
| 11. The Committees are effective, focusing on pertinent topics and allocating reasonable time. | | | | | |
| 12. The Board is well-educated on both benefit and investment issues. | | | | | |
| 13. The Board recognizes its policy-making role and reconsiders and revises policies as necessary. | | | | | |
| 14. The Board is consistently prepared for meetings. | | | | | |
| 15. The Board as a whole, and Trustees as individuals, evaluate their performance on an annual basis. | | | | | |
| 16. The Board reviews and adopts a reasonable operating budget that is followed and monitored throughout the year. | | | | | |
| 17. The Board periodically monitors investment performance and measures it against relevant benchmarks. | | | | | |
| 18. The Board periodically monitors service to members. | | | | | |
| 19. The Board comprehends and respects the difference between its policy-making role and the Director's management role. | | | | | |
| 20. Board goals, expectations, and concerns are promptly, candidly and effectively communicated to the Director. | | | | | |
| 21. The Board anticipates issues and does not often find itself reacting to "crisis" situations. | | | | | |

Identify the three greatest achievements of the Agency with Board support during the past year.

1. _____
2. _____
3. _____

What critical issues need to be addressed by the Board in the future?

What suggestions do you have for improvement of the conduct of Board and Committee meetings and for Board operation and communication?

Appendix C – Director Evaluation

ASRS - Director Performance Evaluation

Name: Paul Matson

Title: Director

This form is to help you evaluate the performance of the Director of the ASRS. In each of the following rating categories, bullet points have been provided to assist you with your evaluation. Please rate the Director using the following scale and place the number on the "Rating" line in each category.

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Leadership: Rating _____

- Establishes and maintains effective and credible relationships affecting the ASRS.
- Projects a positive image as the Director of the ASRS.
- Recognizes the needs and desires of others; treats others with regard, courtesy and respect.
- Maintains a "big picture" outlook and is aware of industry issues.
- Forecasts trends, responds to change and invites innovation.
- Solicits and acts upon ideas of others when needed.
- Stresses the importance of high quality customer service.
- Maintains a well-functioning management team.
- Participates in relevant and worthwhile professional organizations.

General Comments or Examples: (You need not address each point separately.)

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Management/Administration/Budgeting: Rating _____

- Manages all ASRS business functions and activities in accordance with all relevant laws, Board policies and goals
- Develops reasonable budgets, communicates them to the Board, and operates within budgetary limits
- Ensures the efficient and effective functioning of the ASRS through delegation
- Follows up on Board directives to ensure proper implementation

General Comments or Examples: (You need not address each point separately.)

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Communication: Rating _____

- Keeps the Board and staff informed and communicates effectively with them
- Organizes ideas and information logically
- Speaks clearly and concisely, using understandable terminology
- Effectively and politely communicates with the members
- Professionally communicates with entities affecting the ASRS

General Comments or Examples: (You need not address each point separately.)

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Policy Matters: Rating _____

- Periodically reviews policies and makes recommendations for changes to the Board
- Accurately interprets Board policies and concerns, and develops a consistent direction for the staff to follow
- Initiates changes in day-to-day operations to conform to established Board policies
- Acts creatively to evaluate and recommend new initiatives or policies

General Comments or Examples: (You need not address each point separately.)

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Staff Development: Rating _____

- Creates an atmosphere that fosters teamwork, creativity and participation
- Communicates clear standards of performance for the executive staff
- Keeps informed and follows state personnel policies and procedures
- Encourages professional development of staff
- Addresses succession planning for key positions within the ASRS

General Comments or Examples: (You need not address each point separately.)

5 - Outstanding, 4 - Above Average, 3 - Satisfactory, 2 - Needs Improvement, 1 - Unacceptable

Progress Toward Achieving Business Objectives: Rating _____

[Previously and mutually identified goals and objectives listed here.]

1. _____
2. _____
3. _____
4. _____
5. _____

General Comments or Examples: (You need not address each point separately.)

Significant Overall Accomplishments:

Areas Needing Improvement:

Overall Rating: _____

Appendix D – General Investment Consultants

The primary role of the ASRS general consultant(s) is to provide independent ASRS fund(s) investment reporting and performance measurement, financial market commentary and macro strategic/tactical investment advice. The general consultant attends Board and IC meetings as available/applicable, and participates in asset class committee meetings. Though not a designated asset class committee consultant, the general consultant will ensure asset class compliance with the ASRS asset allocation policy, be informed of asset class committee investment decisions, and as applicable, provide broad perspectives on opportunistic and public markets-related topics.

The general consultant will be evaluated, and interviewed by the IC, Director and CIO; the IC will make the selection and recommendation to the Board for approval. The general consultant will be hired and terminated by the Board, report to the IC and Board and, through the direction of the IC Chair, Director or CIO, be engaged at the request of the Board, IC, Director or CIO. In the event a backup general consultant is needed, a selection will be made by the IC from the approved pool of project consultants and recommended to the Board for approval.

Appendix E – Trustee Fiduciary Liability and Coverage

The liability of the Board of Trustees and its individual members in the conduct of their duties and responsibilities is established under state law as follows:

1. The Board as a whole and its individual members are not liable for any act or failure to act that is made in good faith within the scope of their responsibilities under state law. (A.R.S. § 38-791)
2. An individual member of the Board is immune from civil liability and is not subject to suit directly or by way of contribution for any act or omission resulting in any damage or injury if the member was acting in good faith and within the scope of the member's official capacity, unless the damage or injury was caused by willful and wanton or grossly negligent conduct of the member. "Official capacity" means any decision or act taken by a member of the Board to further the purpose for which the Board is established. (A.R.S. §§ 38-717 and 41-621)
3. The state and the ASRS are immune from liability for losses arising out of a judgment against the Trustees for willful and wanton conduct resulting in punitive or exemplary damages. (A.R.S. § 41-621) Liability for such damages would be the responsibility of the Trustees personally.
4. The Arizona Department of Administration is required by statute to provide coverage to the Board and to individual Trustees under the state's risk management program (A.R.S. §§ 41-621 to -625) "against all liability for acts or omissions of any nature by members of the board while acting in an authorized governmental or proprietary capacity and within the course and scope of their employment or authority." (A.R.S. § 38-717)

Under the state's risk management program, the Board and the Trustees receive the same coverage that the state itself receives. (A.R.S. § 41-621)

Under the state's risk management program the Board and the Trustees have coverage for "liability for acts or omissions of any nature while acting in authorized governmental or proprietary capacities and in the course and scope of employment or authorization except as provided by this chapter." (A.R.S. § 41-621)

Under the state's risk management program the Board and the Trustees also have coverage for "[o]ther exposure to loss where insurance may be required to protect this state and its departments, agencies, boards and commissions and all officers, agents and employees acting in the course and scope of employment or authorization except as prescribed by this chapter." (A.R.S. § 41-621)

According to A.R.S. § 41-621 acts or omissions of a Trustee would be "within the course and scope of employment or authorization" if they:

- a. Occur while performing duties or functions that the Trustees are authorized to perform.
- b. Occur "substantially within" the authorized time and space limits of a Trustee's authorization.
- c. Are done (or not done) at least in part to serve the Arizona State Retirement System.

Under the state's risk management program, the Attorney General's Office will defend the Board and the Trustees. The Attorney General may retain outside counsel to defend the Board and the Trustees. (A.R.S. § 41-621)

Under the state's risk management program all attorneys' fees, court costs and litigation expenses will be paid from the permanent liability loss revolving fund of the Department of Administration. (A.R.S. § 41-622) A settlement or judgment, except for punitive damages, also will be paid from this fund. (Id. and A.R.S. § 41-621)

If a Trustee is sued based on conduct outside the course and scope of a Trustee's authorization, the state is not obligated to provide coverage for that conduct. (A.R.S. § 41-621) If the conduct is clearly outside the course and scope, the state will deny coverage. (A.R.S. § 41-621) If there is a question whether the Trustees' acts were within their official capacity, the state may reserve the right to refuse to pay any judgment and will then hire outside counsel to represent the Trustees.

Losses arising from contractual breaches are not covered under the state's risk management program. (A.R.S. § 41-621)

Appendix F – Loyalty Oath

STATE OF ARIZONA

LOYALTY OATH

§38-231. Officers and employees required to take loyalty oath; form; classification; definition

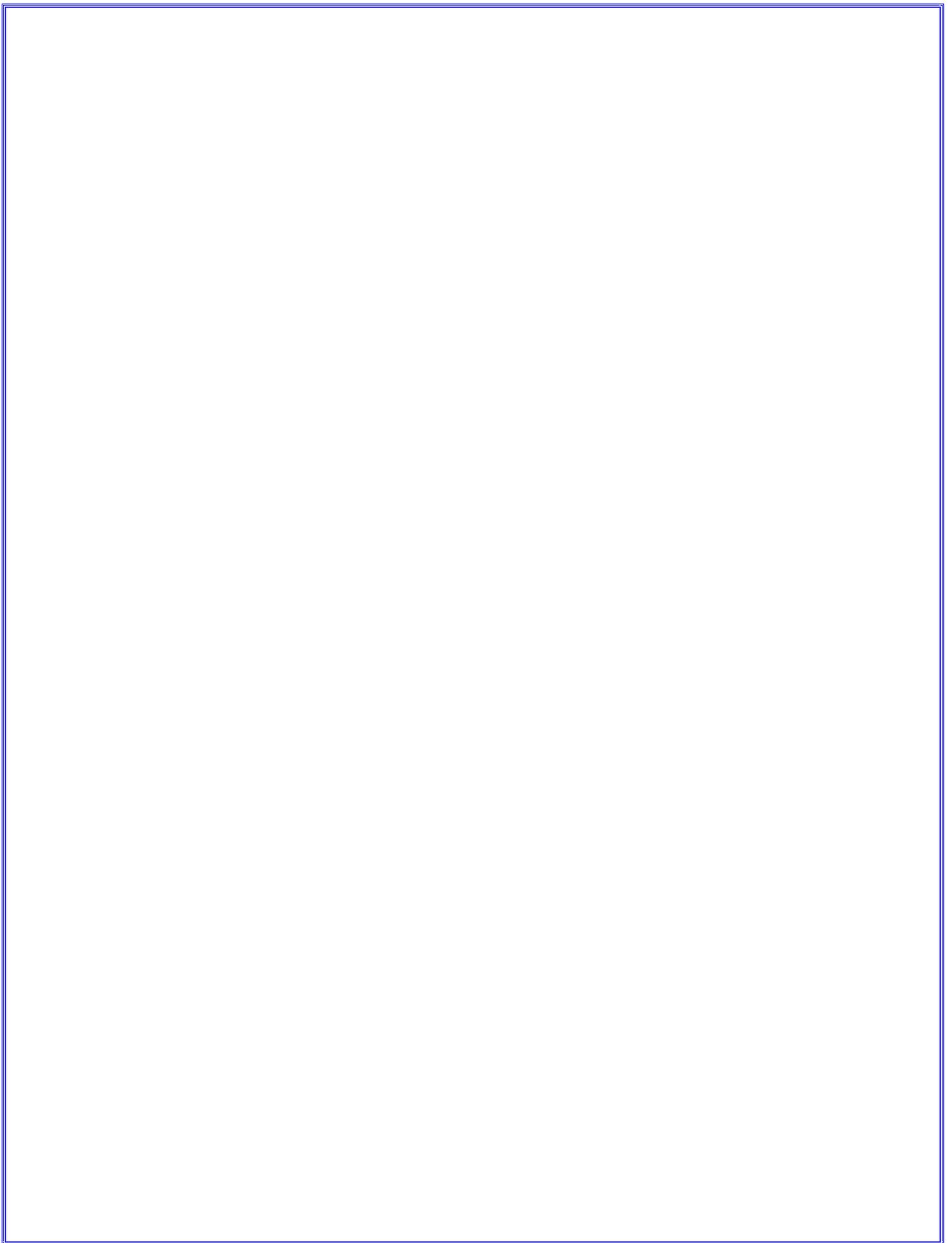
- A. In order to ensure the statewide application of this section on a uniform basis, each board, commission, agency and independent office of this state, and of any of its political subdivisions, and of any county, city, town, municipal corporation, school district and public educational institution, shall completely reproduce this section so that the form of written oath or affirmation required in this section contains all of the provisions of this section for use by all officers and employees of all boards, commissions, agencies and independent offices.
- B. any officer or employee who fails to take and subscribe to the oath or affirmation provided by this section within the time limits prescribed by this section is not entitled to any compensation until the officer or employee does so take and subscribe to the form of oath or affirmation prescribed by this section.
- C. any officer or employee having taken the form of oath or affirmation prescribed by this section, and knowingly at the time of subscribing to the oath or affirmation, or at any time thereafter during the officer's or employee's term of office or employment, does commit or aid in the commission of any act to overthrow by force, violence or terrorism as defined in section 13-2301 the government of this state or of any of its political subdivisions, or advocates the overthrow by force, violence or terrorism as defined in section 13-2301 of the government of this state or of any of its political subdivisions, is guilty of a class 4 felony and, on conviction under this section, the officer or employee is deemed discharged from the office or employment and is not entitled to any additional compensation or any other emoluments or benefits which may have been incident or appurtenant to the office or employment.
- D. Any of the persons referred to in article XVIII, section 10, Constitution of Arizona, as amended, relating to the employment of aliens, are exempted from any compliance with this section.
- E. In addition to any other form of oath or affirmation specifically provided by law for an officer or employee, before any officer or employee enters upon the duties of the office or employment, the officer or employee shall take and subscribe the following oath or affirmation:

State of Arizona, County of _____ I, _____ (type or print name) do solemnly swear (or affirm) that I will support the Constitution of the United States and the Constitution and laws of the State of Arizona, that I will bear true faith and allegiance to the same and defend them against all enemies, foreign and domestic, and that I will faithfully and impartially discharge the duties of the office of THE ARIZONA DEPARTMENT OF ADMINISTRATION according to the best of my ability, so help me God (or so I do affirm).

_____(Signature of officer or employee)

_____(Date)

- F. For the purposes of this section, "officer or employee" means any person elected, appointed or employed, either on a part-time or full-time basis, by this state or any of its political subdivisions or any county, city, town, municipal corporation, school district, public educational institution or any board, commission or agency of any county, city, town, municipal corporation, school district or public educational institution



Agenda Item #10

Director's Report

10a - Investments

10b - Operations

10c - Budget & Staffing

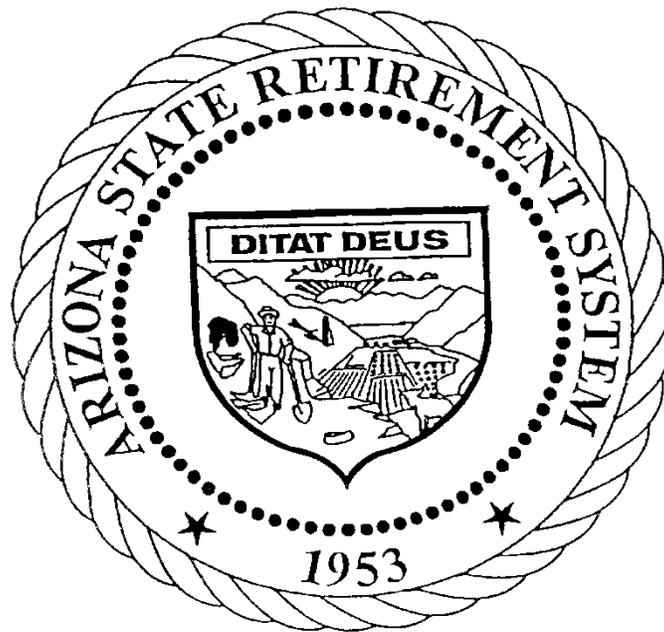
**10d - Cash Flow
Statement**

10e - Appeals

**10f - Employers
Reporting**

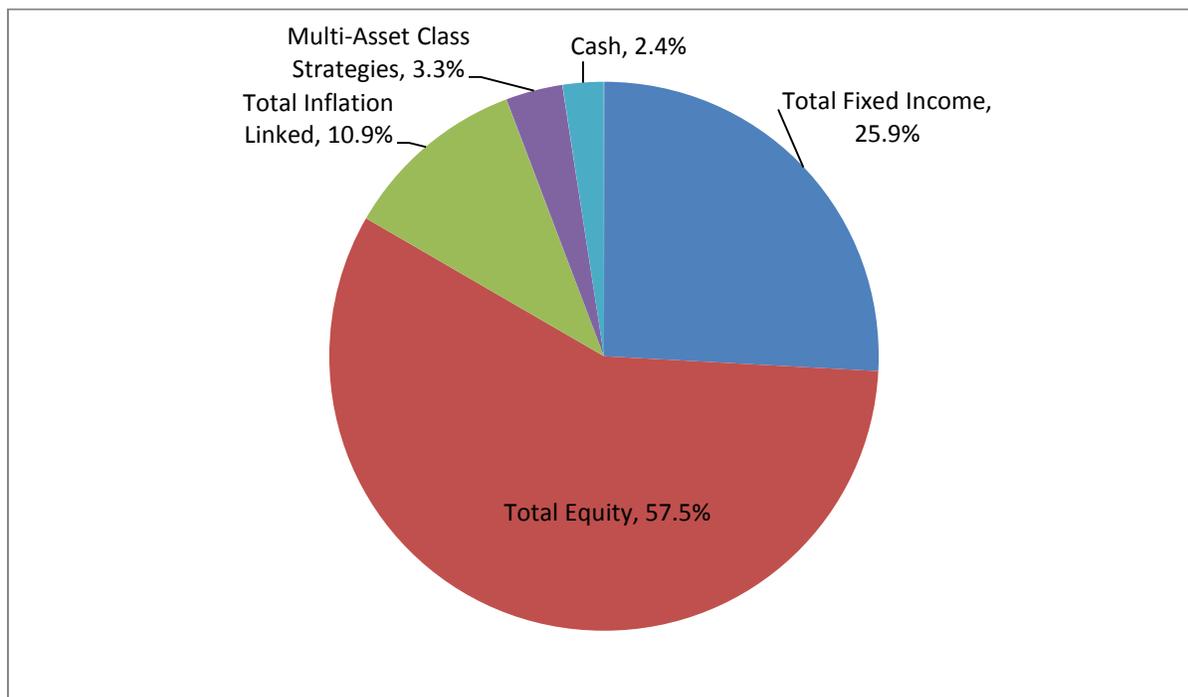
Agenda Item #10a

Director's Report Investments

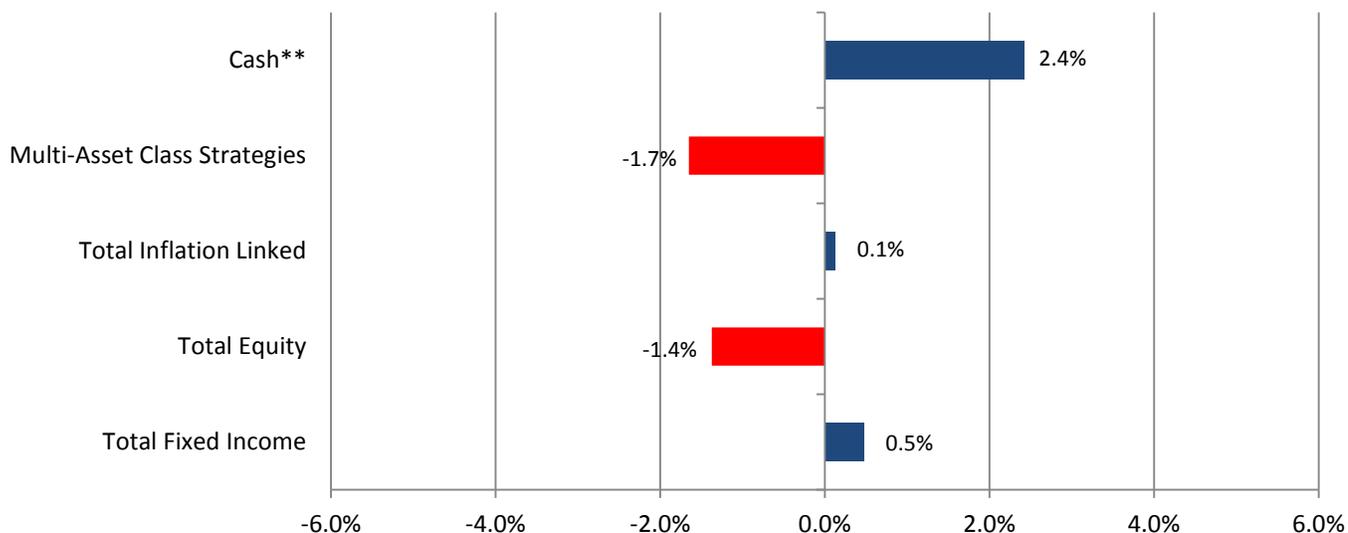


TOTAL FUND POSITIONING 01/29/2016

ACTUAL PORTFOLIO



ACTUAL PORTFOLIO VS. INTERIM SAA POLICY *



*The Interim SAA Policy is prorated thusly: Real Estate was prorated to domestic equity, international equity and fixed income, Private Equity was prorated to domestic equity, and Private Debt was prorated to core fixed income and U.S. high yield. All Private asset classes' market values are reported on a quarter-lag and adjusted to include the current quarter's cash flows.

**Cash represents assetized cash which is exposed via futures to ASRS public markets asset class, and unassetized cash which represents monies needed to cover external and internal cash flows.

| Account Manager | Account Manager Style | Fixed Income | | Equity | | Inflation Linked | Multi-Asset | Total | Pct of Fund |
|-------------------------------|--|-----------------|-----------------|-----------------|------------------|------------------|-----------------|---|-------------------|
| | | Active | Enh/Passive | Active | Enh/Passive | | | | |
| State Street B&T: Boston | Tactical Cash (non-assetized) | | | | | | | 0 | 0.00% |
| | | | | | | | | Tactical Cash Policy Range: 0% - 3% | 0.00% |
| | Operating Cash (non-assetized) | | 24,925,611 | | | | | 24,925,611 | 0.08% |
| | Operating Cash (assetized) | | 763,896,313 | | | | | 763,896,313 | 2.35% |
| | Cash Total | | | | | | | \$788,943,835 | 2.43% |
| | | | | | | | | Cash Policy: 0% | 0.00% |
| Blackrock: San Francisco | Treasuries (Long Duration) | | 370,803,883 | | | | | 370,803,883 | 1.14% |
| | Treasuries (Long Duration) Total | | | | | | | \$370,803,883 | 1.14% |
| | | | | | | | | Treasuries (Long Duration) Policy Range: 0% - 10% | 0.00% |
| Blackrock: San Francisco | Passive (Intermediate Gov Credit) | | 24,633,086 | | | | | 24,633,086 | 0.08% |
| ASRS: Phoenix | Enhanced Passive F2 | | 1,896,819,051 | | | | | 1,896,819,051 | 5.84% |
| Blackrock: San Francisco | Passive (US Debt Index) | | 1,562,692,169 | | | | | 1,562,692,169 | 4.81% |
| | Core Fixed Income Total | | | | | | | \$3,484,144,305.70 | 10.72% |
| | Interest Rate Sensitive | | | | | | | \$3,854,948,188.44 | 11.86% |
| | | | | | | | | Interest Rate Sensitive: 11% | 11.00% |
| Columbia: Minneapolis | Active | 665,578,756 | | | | | | 665,578,756 | 2.05% |
| JP Morgan: Indianapolis | Active | 332,786,432 | | | | | | 332,786,432 | 1.02% |
| | High Yield Fixed Income Total | | | | | | | \$998,378,944 | 3.07% |
| | | | | | | | | High Yield Fixed Income Policy | 4.00% |
| | Opportunistic Debt | 1,162,882,158 | | | | | | \$1,162,882,158 | 3.58% |
| | | | | | | | | Opportunistic Debt Policy: | 0.00% |
| | Private Debt Total | 2,385,216,690 | | | | | | \$2,385,216,690 | 7.34% |
| | | | | | | | | Total Private Debt: 8% - 12% | 10.00% |
| | Fixed Income Total | | | | | | | \$8,401,425,980 | 25.86% |
| | | | | | | | | Total Fixed Income Policy Range: 18% - 35% | 25.00% |
| LSV: Chicago | Active (Value) | | | 653,680,803 | | | | 653,680,803 | 2.01% |
| ASRS: Phoenix | Passive E2 | | | | 4,641,248,286 | | | 4,641,248,286 | 14.28% |
| ASRS: Phoenix | Enhanced Passive E7 | | | | 572,289,835 | | | 572,289,835 | 1.76% |
| ASRS: Phoenix | Enhanced Passive E8 | | | | 553,996,789 | | | 553,996,789 | 1.71% |
| ASRS: Phoenix | Risk Factor Portfolio | | | | 531,767,287 | | | 531,767,287 | 1.64% |
| | Large Cap Equity Total | | | | | | | \$6,953,384,997 | 21.40% |
| | | | | | | | | Large Cap Policy | 20.00% |
| Wellington: Boston | Active (Core) | | | 248,849,357 | | | | 248,849,357 | 0.77% |
| ASRS: Phoenix | Passive E3 (Growth) | | | | 373,016,663 | | | 373,016,663 | 1.15% |
| ASRS: Phoenix | Passive E4 (Value) | | | | 328,341,986 | | | 328,341,986 | 1.01% |
| | Mid Cap Equity Total | | | | | | | \$950,208,006 | 2.92% |
| | | | | | | | | Mid Cap Policy | 3.00% |
| TimesSquare: New York | Active (Growth) | | | 321,873,081 | | | | 321,873,081 | 0.99% |
| DFA: Santa Monica | Active (Value) | | | 244,968,227 | | | | 244,968,227 | 0.75% |
| ASRS: Phoenix | Passive E6 | | | | 298,238,998 | | | 298,238,998 | 0.92% |
| | Small Cap Equity Total | | | | | | | \$865,080,306 | 2.66% |
| | | | | | | | | Small Cap Policy | 3.00% |
| | U.S. Equity Total | | | | | | | \$8,768,673,309 | 26.99% |
| | | | | | | | | US Equity Policy Range: 16% - 36% | 26.00% |
| Brandes: San Diego | Active (Value) | | | 530,251,498 | | | | 530,251,498 | 1.63% |
| American Century | Active (EAFE) | | | 520,570,380 | | | | 520,570,380 | 1.60% |
| Trinity Street | Active (EAFE) | | | 297,544,289 | | | | 297,544,289 | 0.92% |
| Thompson Siegel Walmsley | Active (EAFE) | | | 275,185,897 | | | | 275,185,897 | 0.85% |
| Blackrock: San Francisco | Passive (EAFE) | | | | 3,673,889,200 | | | 3,673,889,200 | 11.31% |
| | Large Cap Developed Non-US Equity Total | | | | | | | \$5,298,062,044 | 16.31% |
| | | | | | | | | Large Cap Developed Policy | 17.00% |
| AQR: Greenwich | Active (EAFE SC) | | | 91,012,536 | | | | 91,012,536 | 0.28% |
| DFA: Santa Monica | Active (EAFE SC) | | | 93,855,819 | | | | 93,855,819 | 0.29% |
| Franklin Templeton: San Mateo | Active (EAFE SC) | | | 199,467,160 | | | | 199,467,160 | 0.61% |
| Blackrock: San Francisco | Passive (EAFE SC) | | | | 232,370,864 | | | 232,370,864 | 0.72% |
| | Small Cap Developed Non-US Equity Total | | | | | | | \$616,708,765 | 1.90% |
| | | | | | | | | Small Cap Developed Policy | 2.00% |
| William Blair: Chicago | Active (EM) | | | 312,178,092 | | | | 312,178,092 | 0.96% |
| Eaton Vance: Boston | Active (EM) | | | 235,167,016 | | | | 235,167,016 | 0.72% |
| LSV: Chicago | Active (EM) | | | 97,700,764 | | | | 97,700,764 | 0.30% |
| Blackrock: San Francisco | Passive (EM) | | | | 272,157,571 | | | 272,157,571 | 0.84% |
| | Emerging Markets Equity Total | | | | | | | \$917,203,444 | 2.82% |
| | | | | | | | | Emerging Markets Policy | 5.00% |
| | Non-US Equity Total | | | | | | | \$6,831,974,253 | 21.03% |
| | | | | | | | | Non-US Equity Policy Range: 14% - 34% | 24.00% |
| | Private Equity Total | | | 2,590,087,280 | | | | \$2,590,087,280 | 7.97% |
| | | | | | | | | Private Equity Policy Range: 6% - 10% | 8.00% |
| | Opportunistic Equity | | | 492,400,373 | | | | \$492,400,373 | 1.52% |
| | | | | | | | | Opportunistic Equity Policy: | 0.00% |
| | Equity Total | | | | | | | \$18,683,135,216 | 57.50% |
| | | | | | | | | Total Equity Policy Range: 48% - 65% | 68.00% |
| Gresham: New York | Commodities Total | | | | | 201,172,941 | | 201,172,941 | 0.62% |
| | | | | | | | | \$201,172,941 | 0.62% |
| | | | | | | | | Commodities Policy Range: 0% - 4% | 2.00% |
| | Real Estate Total | | | | | 2,829,321,631 | | \$2,829,321,631 | 8.71% |
| | | | | | | | | Real Estate Policy Range: 8% - 12% | 10.00% |
| | Infrastructure Total | | | | | 316,552,365 | | \$316,552,365 | 0.97% |
| | | | | | | | | Infrastructure Policy Range: 0% - 3% | 0.00% |
| | Farmland & Timber Total | | | | | 182,760,272 | | \$182,760,272 | 0.56% |
| | | | | | | | | Farmland & Timber Policy Range: 0% - 3% | 0.00% |
| | Inflation Linked Total | | | | | | | \$3,529,807,209 | 10.86% |
| | | | | | | | | Inflation Linked Policy Range: 10% - 16% | 12.00% |
| Bridgewater | Multi-Asset Class Strategies | | | | | | 1,087,458,825 | 1,087,458,825 | 3.35% |
| | | | | | | | | \$1,087,458,825 | 3.35% |
| | | | | | | | | Multi-Asset Class Policy Range: 0% - 12% | 5.00% |
| | TOTAL Amounts | \$4,546,477,792 | \$4,643,892,023 | \$7,205,679,660 | \$11,477,455,566 | \$3,529,807,209 | \$1,087,458,825 | \$32,490,771,064 | Total Fund |
| | TOTAL Percent | 13.99% | 14.29% | 22.18% | 35.33% | 10.86% | 3.35% | | |

| Asset Class | Actual Portfolio | SAAP Target (Range) | Interim SAA* Adj Policy | Actual - Interim SAA** | | Policy Band check Actual - Adj Policy |
|---|------------------------|---------------------|-------------------------|------------------------|-------------------------|---------------------------------------|
| | | | | % diff | \$ diff | |
| Tactical Cash | 0.00% | 0% (0-3%) | 0.00% | 0.00% | | |
| Cash | 2.43% | 0.00% | 0.00% | 2.43% | 788,943,835 | |
| Interest Rate Sensitive | 11.86% | 11% | 13.34% | -1.47% | | |
| High Yield | 3.07% | 4% | 4.71% | -1.64% | | |
| Opportunistic Debt | 3.58% | 0% | 0.00% | 3.58% | \$1,162,882,158 | |
| Private Debt | 7.34% | 10% (8-12%) | 7.34% (5-9%) | 0.00% | | |
| Total Fixed Income | 25.86% | 25% (18-35%) | 25.39% (18-35%) | 0.47% | \$152,806,572 | OK |
| Large Cap | 21.40% | 20% | 20.53% | 0.87% | \$282,351,744 | |
| Mid Cap | 2.92% | 3% | 3.00% | -0.08% | -\$24,515,126 | |
| Small Cap | 2.66% | 3% | 3.00% | -0.34% | -\$109,642,826 | |
| US Equity | 26.99% | 26% (16-36%) | 26.53% (17-37%) | 0.46% | \$148,193,792 | OK |
| Developed Large Cap | 16.31% | 17% | 17.37% | -1.07% | -\$347,098,125 | |
| Developed Small Cap | 1.90% | 2% | 2.00% | -0.10% | -\$33,106,656 | |
| Emerging Markets | 2.82% | 5% | 5.00% | -2.18% | -\$707,335,110 | |
| Non-US Equity | 21.03% | 24% (14-34%) | 24.37% (14-34%) | -3.35% | -\$1,087,539,890 | OK |
| Private Equity | 7.97% | 8% (6-10%) | 7.97% | 0.00% | \$0 | OK |
| Opportunistic Equity | 1.52% | 0% | 0.00% | 1.52% | \$492,400,373 | |
| Total Equity | 57.50% | 58% (48-65%) | 58.88% (49-66%) | -1.38% | -\$446,945,725 | OK |
| Commodities | 0.62% | 2% (0-4%) | 2.03% | -1.41% | -\$457,037,590 | OK |
| Real Estate | 8.71% | 10% (8-12%) | 8.71% | 0.00% | \$0 | OK |
| Infrastructure | 0.97% | 0% (0-3%) | 0.00% | 0.97% | \$316,552,365 | OK |
| Farmland & Timber | 0.56% | 0% (0-3%) | 0.00% | 0.56% | \$182,760,272 | OK |
| Opportunistic IL | 0.00% | 0% | 0.00% | 0.00% | \$0 | |
| Total Inflation Linked | 10.86% | 12% (10-16%) | 10.73% (9-13%) | 0.13% | \$42,275,047 | OK |
| Multi-Asset Strategies*** | 3.35% | 5% (0-12%) | 5% (0-12%) | -1.65% | -\$537,079,729 | OK |
| Total | 100.00% | 100% | 100.00% | 0.00% | \$0 | |
| | | | | | | Internally Managed Portfolios: |
| | | | | | | \$8,663,951,608 |
| | | | | | | 27% |
| *Interim SAA includes a proration of unfunded Private Equity, Private Debt, and Real Estate | | | | | | |
| **Private Equity is prorated to domestic equity; Real Estate is prorated to equity, commodities, and fixed income; Private Debt is prorated to Interest Rate Sensitive and High Yield | | | | | | |
| Opportunistic definitions: | | | | | | |
| An investment in a category that is not included in the ASRS Asset Allocation policy and represents an investment opportunity that is tactical in nature. | | | | | | |
| Opportunistic investments have a 0% target (0%-10% range), regardless of asset class. | | | | | | |
| Total Opportunistic | | | | | | |
| Opportunistic Debt | \$1,162,882,158 | 3.6% | | | | |
| Opportunistic Equity | \$492,400,373 | 1.5% | | | | |
| Opportunistic IL | \$0 | 0.0% | | | | |
| | \$1,655,282,531 | 5.1% | | | | |



| | Benchmark | Market Value (\$mil.) | 1 Mth | 3 Mth | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inception Date |
|-----------------------------------|---|-----------------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------------|
| US EQUITY LARGE CAP | | | | | | | | | | |
| E2 MODEL | S&P 500 INDEX (DAILY) | 4,641 | -5.00 | -6.24 | -0.71 | 11.24 | 10.88 | 6.52 | 7.15 | 04-01-1997 |
| Excess | | | -0.04 | -0.06 | -0.04 | -0.06 | -0.03 | 0.04 | 0.07 | |
| LSV ASSET MANAGEMENT | LSV CUSTOM INDEX | 654 | -6.30 | -8.43 | -6.05 | 10.05 | 10.25 | 6.14 | 9.76 | 01-01-2003 |
| Excess | | | -1.42 | -2.43 | -2.47 | 1.39 | 1.09 | 1.17 | 1.88 | |
| E7 | MSCI USA High Dividend Yield Index | 572 | -1.95 | -2.32 | 1.97 | 11.49 | | | 11.69 | 08-01-2012 |
| Excess | | | -0.09 | -0.14 | -0.20 | -0.05 | | | -0.03 | |
| E8 | MSCI USA Minimum Volatility Index | 554 | -1.47 | -1.23 | 4.58 | 13.28 | | | 13.01 | 08-01-2012 |
| Excess | | | -0.08 | -0.11 | -0.10 | 0.15 | | | 0.33 | |
| TOTAL US EQUITY LARGE CAP | S&P 500 INDEX (DAILY) | 6,422 | -4.58 | -5.68 | -0.50 | 11.31 | 10.77 | 6.47 | 7.27 | 06-01-2002 |
| Excess | | | 0.39 | 0.51 | 0.16 | 0.01 | -0.14 | -0.01 | 0.65 | |
| US EQUITY MID CAP | | | | | | | | | | |
| WELLINGTON MANAGEMENT COMPANY LLP | S&P 400 MIDCAP INDEX (DAILY) | 249 | -8.28 | -11.83 | -5.13 | 10.25 | 9.23 | 7.73 | 10.09 | 07-01-2002 |
| Excess | | | -2.59 | -3.44 | 1.57 | 2.22 | 0.28 | 0.80 | 1.03 | |
| E3 MODEL | S&P/CITIGROUP 400 GROWTH | 373 | -5.87 | -7.98 | -4.57 | 8.63 | 9.64 | 8.11 | 7.81 | 12-01-2000 |
| Excess | | | -0.04 | -0.13 | -0.10 | -0.01 | 0.16 | 0.49 | 0.50 | |
| E4 MODEL | S&P/CITIGROUP 400 VALUE | 328 | -5.57 | -9.09 | -9.16 | 7.22 | 8.28 | 6.40 | 8.90 | 07-01-2002 |
| Excess | | | -0.01 | -0.03 | -0.05 | -0.07 | -0.10 | 0.24 | 0.17 | |
| TOTAL US EQUITY MID CAP | S&P 400 MIDCAP INDEX (DAILY) | 950 | -6.41 | -9.42 | -6.30 | 8.45 | 8.86 | 6.98 | 9.02 | 06-01-2002 |
| Excess | | | -0.72 | -1.02 | 0.39 | 0.41 | -0.10 | 0.05 | 0.62 | |
| US EQUITY SMALL CAP | | | | | | | | | | |
| DIMENSIONAL FUND ADVISORS EQFD | DFA BLENDED BENCHMARK | 245 | -6.44 | -9.77 | -8.94 | 6.44 | 7.48 | 5.55 | 10.58 | 09-01-1998 |
| Excess | | | -0.56 | -1.46 | -1.63 | -1.38 | -1.57 | -0.47 | 0.76 | |
| E6 | S&P 600 SMALL CAP (DAILY) | 298 | -6.20 | -8.27 | -4.49 | 9.16 | 9.98 | | 6.57 | 02-01-2007 |
| Excess | | | -0.03 | -0.00 | 0.20 | 0.03 | -0.05 | | 0.33 | |
| TIMESQUARE CAPITAL MANAGEMENT | TIMESQUARE BLENDED BENCHMARK | 322 | -9.14 | -9.45 | -6.16 | 7.68 | 10.01 | 8.91 | 10.22 | 04-01-2005 |
| Excess | | | 1.70 | 2.53 | 3.85 | 0.00 | 1.45 | 2.49 | 2.38 | |
| TOTAL US EQUITY SMALL CAP | ASRS SMALL CAP CUSTOM INDEX | 865 | -7.38 | -9.14 | -6.46 | 7.68 | 9.09 | 6.66 | 9.12 | 06-01-2002 |
| Excess | | | -1.21 | -0.87 | -1.77 | -1.44 | -0.94 | -0.04 | 0.72 | |



| | Benchmark | Market Value (\$mil.) | 1 Mth | 3 Mth | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inception Date |
|--|--|-----------------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|-------------------|
| TOTAL US EQUITY | COMBINED DOMESTIC EQUITY INDEX | 8,237 | -5.09 | -6.50 | -1.57 | 10.67 | 10.46 | 6.79 | 10.95 | 07-01-1975 |
| Excess | | | 0.16 | 0.32 | 0.58 | 0.14 | -0.07 | 0.03 | -0.06 | |
| INTERNATIONAL DEVELOPED LARGE CAP | | | | | | | | | | |
| BRANDES INVESTMENT PARTNERS INT EQ | BRANDES CUSTOM INDEX | 530 | -5.38 | -8.95 | -3.82 | 4.00 | 2.57 | 2.48 | 8.08 | 10-01-1998 |
| Excess | | | 1.85 | 0.96 | 4.61 | 3.18 | 0.84 | -0.42 | 2.90 | |
| AMERICAN CENTURY | MSCI EAFE NET (BLENDED) | 521 | -7.31 | -9.04 | -5.10 | | | | -7.06 | 07-01-2014 |
| Excess | | | -0.08 | 0.86 | 3.33 | | | | 3.66 | |
| BGI EAFE INDEX | MSCI EAFE NET (BLENDED) | 3,713 | -7.24 | -9.91 | -8.22 | 0.92 | 1.86 | | 6.16 | 07-01-2009 |
| Excess | | | -0.01 | -0.01 | 0.22 | 0.10 | -0.00 | | -0.02 | |
| THOMSON, SIEGEL & WALMSLEY | MSCI EAFE NET (BLENDED) | 275 | -7.41 | -9.87 | -5.77 | | | | -8.82 | 07-01-2014 |
| Excess | | | -0.18 | 0.04 | 2.66 | | | | 1.90 | |
| TRINITY STREET | MSCI EAFE NET (BLENDED) | 298 | -7.43 | -10.22 | -4.52 | | | | -9.78 | 07-01-2014 |
| Excess | | | -0.20 | -0.32 | 3.92 | | | | 0.94 | |
| TOTAL INTERNATIONAL DEVELOPED LARGE CAP | MSCI EAFE NET (BLENDED) | 5,337 | -7.09 | -9.75 | -7.19 | 0.91 | 1.74 | | | 09-01-2009 |
| Excess | | | 0.15 | 0.15 | 1.24 | 0.10 | -0.13 | | | |
| INTERNATIONAL DEVELOPED SMALL CAP | | | | | | | | | | |
| AQR CAPITAL | MSCI EAFE SMALL CAP NET (BLENDED) | 91 | -7.81 | -5.93 | 3.71 | | | | 6.90 | 06-01-2013 |
| Excess | | | 0.06 | 1.23 | 2.90 | | | | 2.14 | |
| BLACKROCK EAFE SMALL CAP | MSCI EAFE SMALL CAP NET (BLENDED) | 234 | -7.85 | -7.15 | 0.87 | 5.78 | 4.48 | | 9.19 | 06-01-2010 |
| Excess | | | 0.02 | 0.01 | 0.06 | 0.03 | -0.15 | | -0.11 | |
| DIMENSIONAL FUND ADVISORS INTL SC | MSCI EAFE SMALL CAP NET (BLENDED) | 94 | -8.00 | -9.84 | -5.70 | 2.53 | 1.56 | 2.56 | 3.93 | 09-01-2005 |
| Excess | | | -0.13 | -2.67 | -6.51 | -3.22 | -3.07 | -0.73 | -1.05 | |
| FRANKLIN TEMPLETON INVESTMENTS | MSCI EAFE SMALL CAP NET (BLENDED) | 199 | -7.97 | -10.78 | -2.70 | 3.12 | | | 4.75 | 04-01-2011 |
| Excess | | | -0.11 | -3.61 | -3.51 | -2.63 | | | 0.43 | |
| TOTAL INTERNATIONAL DEVELOPED SMALL CAP | MSCI EAFE SMALL CAP NET (BLENDED) | 619 | -7.90 | -8.59 | -1.21 | 4.68 | 4.80 | | 6.42 | 10-01-2009 |
| Excess | | | -0.04 | -1.42 | -2.02 | -1.08 | 0.17 | | -0.54 | |
| INTERNATIONAL EMERGING MARKETS | | | | | | | | | | |
| BLACKROCK EMERGING MARKETS | MSCI EMF NET (BLENDED) | 280 | -6.54 | -12.19 | -21.08 | -9.42 | -5.76 | | -4.64 | 10-01-2010 |
| Excess | | | -0.05 | -0.05 | -0.17 | -0.28 | -0.39 | | -0.37 | |
| EATON VANCE EMERGING MARKET EQUITY | MSCI EMF NET (BLENDED) | 241 | -4.18 | -10.01 | -19.43 | -8.88 | -5.09 | | -4.26 | 12-01-2010 |



| | Benchmark | Market Value (\$mil.) | 1 Mth | 3 Mth | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inception Date |
|---|---------------------------------------|-----------------------|--------------|---------------|---------------|--------------|--------------|-------------|--------------|-------------------|
| Excess | | | 2.30 | 2.13 | 1.48 | 0.26 | 0.29 | | 0.17 | |
| LSV EMERGING MARKET EQUITY | MSCI EMF NET (BLENDED) | 100 | -6.82 | -14.83 | -24.88 | -10.68 | -6.00 | | -4.76 | 12-01-2010 |
| Excess | | | -0.33 | -2.70 | -3.97 | -1.54 | -0.63 | | -0.33 | |
| WILLIAM BLAIR & COMPANY | MSCI EMF NET (BLENDED) | 320 | -7.00 | -11.29 | -21.78 | -5.60 | -1.72 | | -2.32 | 11-01-2010 |
| Excess | | | -0.51 | 0.85 | -0.87 | 3.54 | 3.66 | | 2.53 | |
| TOTAL INTERNATIONAL EMERGING MARKETS | MSCI EMF NET (BLENDED) | 942 | -6.14 | -11.63 | -21.35 | -8.55 | -4.72 | | -4.07 | 10-01-2010 |
| Excess | | | 0.35 | 0.51 | -0.44 | 0.59 | 0.65 | | 0.19 | |
| TOTAL INTERNATIONAL EQUITY | INTERNATIONAL EQUITY INDEX | 6,898 | -7.03 | -9.91 | -9.27 | -1.03 | 0.40 | 1.72 | 5.53 | 04-01-1987 |
| Excess | | | 0.09 | 0.22 | 1.34 | 0.13 | -0.01 | -0.55 | 0.33 | |
| <u>RISK FACTOR PORTFOLIO</u> | | | | | | | | | | |
| RISK FACTOR PORTFOLIO | | 532 | -5.38 | -6.29 | -0.50 | | | | 9.40 | 06-01-2013 |
| TOTAL EQUITY W/ RISK FACTOR OVERLAY | MSCI WORLD NET (BLENDED) | 15,667 | -5.97 | -7.99 | -5.26 | 5.83 | 6.67 | 4.87 | 5.96 | 01-01-1998 |
| Excess | | | 0.02 | 0.10 | -0.18 | 0.01 | 0.52 | 0.53 | 0.81 | |
| TOTAL EQUITY W/O RISK FACTOR | MSCI WORLD NET (BLENDED) | 15,135 | -5.99 | -8.05 | -5.42 | 5.77 | 6.64 | 4.85 | 5.95 | 01-01-1998 |
| Excess | | | -0.00 | 0.05 | -0.33 | -0.05 | 0.48 | 0.51 | 0.80 | |
| <u>CORE FIXED INCOME</u> | | | | | | | | | | |
| BGI US DEBT FD | Barclays Aggregate (Daily) | 1,568 | 1.45 | 0.86 | -0.02 | | | | 3.09 | 05-01-2014 |
| Excess | | | 0.07 | 0.07 | 0.14 | | | | 0.18 | |
| F2 MODEL | Barclays Aggregate (Daily) | 1,897 | 1.34 | 0.82 | 0.22 | 2.47 | 3.79 | 4.93 | 5.40 | 10-01-2000 |
| Excess | | | -0.04 | 0.03 | 0.38 | 0.32 | 0.28 | 0.27 | 0.17 | |
| BGI GOVT/CRDTBD INDEX | Barclays Gov/Credit Int (Daily) | 25 | 1.28 | 0.72 | 0.82 | 1.77 | 2.88 | | 4.46 | 11-01-2008 |
| Excess | | | 0.05 | 0.09 | 0.19 | 0.14 | 0.13 | | 0.11 | |
| TOTAL CORE FIXED INCOME | Barclays Aggregate (Daily) | 3,489 | 1.39 | 0.84 | 0.13 | 2.32 | | | 2.06 | 01-01-2013 |
| Excess | | | 0.01 | 0.06 | 0.29 | 0.18 | | | 0.21 | |
| <u>LONG DURATION TREASURIES</u> | | | | | | | | | | |
| BLACKROCK LONG GOV BONDS | Barclays Treasury Long (Daily) | 371 | 4.93 | 4.07 | | | | | 5.14 | 09-01-2015 |
| Excess | | | -0.09 | -0.07 | | | | | -0.03 | |
| LONG DURATION TREASURIES | Barclays Treasury Long (Daily) | 371 | 4.93 | 4.07 | | | | | 5.14 | 09-01-2015 |
| Excess | | | -0.09 | -0.07 | | | | | -0.03 | |
| <u>HIGH YIELD FIXED INCOME</u> | | | | | | | | | | |



| | Benchmark | Market Value (\$mil.) | 1 Mth | 3 Mth | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inception Date |
|---|---|-----------------------|--------------|---------------|---------------|---------------|---------------|-------------|--------------|-------------------|
| COLUMBIA MANAGEMENT INV. ADVISORS, LLC | Barclays Corp High Yield (Daily) | 666 | -0.66 | -3.66 | -1.94 | 2.91 | 5.66 | | 7.75 | 10-01-2009 |
| Excess | | | 0.95 | 2.56 | 4.68 | 2.22 | 1.42 | | 0.72 | |
| JP MORGAN HIGH YIELD | Barclays Corp High Yield (Daily) | 333 | -1.28 | -6.53 | -5.86 | | | | 1.23 | 07-01-2013 |
| Excess | | | 0.33 | -0.31 | 0.76 | | | | 0.45 | |
| TOTAL HIGH YIELD FIXED INCOME | Barclays Corp High Yield (Daily) | 998 | -0.87 | -4.63 | -3.29 | 2.22 | 5.02 | | 7.15 | 10-01-2009 |
| Excess | | | 0.74 | 1.58 | 3.33 | 1.52 | 0.78 | | 0.12 | |
| TOTAL PUBLIC FIXED INCOME | ASRS CUSTOM FIXED INCOME BENCHMARK | 4,858 | 1.18 | -0.07 | -0.23 | 0.99 | 3.28 | 4.79 | 8.22 | 07-01-1975 |
| Excess | | | 0.67 | 1.65 | 4.14 | 1.39 | 1.09 | 0.78 | | |
| MULTI-ASSET CLASS STRATEGIES | | | | | | | | | | |
| BRIDGEWATER ASSOCIATES GBLB TAA | BRIDGEWATER CUSTOM BENCHMARK | 1,105 | 0.65 | -1.07 | -0.58 | 7.45 | 8.89 | 7.92 | 8.23 | 01-01-2004 |
| Excess | | | 0.64 | -1.10 | -3.24 | 0.44 | 1.56 | 2.47 | 2.16 | |
| TOTAL MULTI-ASSET CLASS STRATEGIES | MULTI ASSET CUSTOM INDEX | 1,105 | 0.65 | -1.07 | -2.15 | 6.05 | 7.45 | 6.72 | 7.15 | 01-01-2004 |
| Excess | | | 0.64 | -1.10 | -3.60 | -0.53 | 0.37 | 1.38 | 1.18 | |
| GLOBAL INFLATION LINKED | | | | | | | | | | |
| GRESHAM | Bloomberg Commodity Index Total Return | 201 | -2.92 | -13.44 | -24.71 | -18.69 | -12.87 | | -7.90 | 09-01-2010 |
| Excess | | | -1.24 | -1.82 | -1.35 | -0.28 | 1.06 | | 1.31 | |
| TOTAL GLOBAL INFLATION LINKED | Bloomberg Commodity Index Total Return | 201 | -2.92 | -13.44 | -24.71 | -18.66 | -12.90 | | -7.84 | 02-01-2010 |
| Excess | | | -1.24 | -1.82 | -1.35 | -0.25 | 1.04 | | 0.29 | |
| CASH ASSETIZATION | | | | | | | | | | |
| TOTAL CASH ASSETIZATION | CASH ASSETIZATION CUSTOM INDEX | 764 | -2.41 | -4.30 | -4.99 | | | | -4.99 | 02-01-2015 |
| Excess | | | 0.00 | 0.83 | 5.55 | | | | 5.55 | |
| TOTAL PUBLIC MARKET | | 22,621 | -4.05 | -5.99 | -4.28 | 4.23 | 5.55 | | 7.64 | 10-01-2009 |

ASRS Long Term Disability Assets
Investment Managers Performance Summary



| | Benchmark | Market Value (\$mil.) | 1 Mth | 3 Mth | YTD | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inception Date |
|--|--|-----------------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------------|
| LTD | | | | | | | | | | | |
| BLACKROCK - US DEBT FUND B | Barclays Aggregate (Daily) | 27.7 | 1.46 | 0.84 | 1.46 | -0.11 | 2.16 | 3.55 | | 3.51 | 01-01-2011 |
| Excess | | | 0.08 | 0.06 | 0.08 | 0.05 | 0.01 | 0.04 | | 0.04 | |
| BLACKROCK - US HIGH YIELD FUND B | Barclays Corp High Yield (Daily) | 16.8 | -1.44 | -6.05 | -1.44 | -7.00 | 0.51 | 4.01 | | 4.43 | 01-01-2011 |
| Excess | | | 0.17 | 0.16 | 0.17 | -0.38 | -0.18 | -0.23 | | -0.19 | |
| BLACKROCK-LTD-EM BD INDX FD B | JPM GBI-EM Global Diversified Index | 4.7 | 0.33 | -4.30 | 0.33 | -15.63 | -10.82 | | | -10.36 | 01-01-2013 |
| Excess | | | -0.02 | -0.29 | -0.02 | -0.72 | -0.76 | | | -0.77 | |
| BLACKROCK - RUSSELL 1000 FUND B | RUSSELL 1000 (DAILY) | 66.8 | -5.37 | -6.77 | -5.37 | -1.76 | 10.94 | 10.70 | | 11.03 | 01-01-2011 |
| Excess | | | 0.01 | 0.01 | 0.01 | 0.06 | 0.00 | 0.02 | | 0.02 | |
| BLACKROCK - RUSSELL 2000 FUND B | RUSSELL 2000 (DAILY) | 13.7 | -8.77 | -10.49 | -8.77 | -9.71 | 6.30 | 7.44 | | 7.26 | 01-01-2011 |
| Excess | | | 0.03 | 0.07 | 0.03 | 0.21 | 0.19 | 0.19 | | 0.19 | |
| BLACKROCK - EAFE INDEX FUND B | MSCI EAFE NET (BLENDED) | 25.4 | -7.24 | -9.94 | -7.24 | -8.47 | 0.68 | 1.63 | | 2.08 | 01-01-2011 |
| Excess | | | -0.01 | -0.03 | -0.01 | -0.03 | -0.13 | -0.23 | | -0.23 | |
| BLACKROCK EAFE SMALL CAP FUND B | MSCI EAFE SMALL CAP NET (BLENDED) | 6.9 | -7.82 | -7.16 | -7.82 | 0.82 | 5.79 | 4.51 | | 4.59 | 01-01-2011 |
| Excess | | | 0.04 | 0.01 | 0.04 | 0.01 | 0.03 | -0.13 | | -0.12 | |
| BLACKROCK MSCI EMERGING MARKETS FUND B | MSCI EMF NET (BLENDED) | 9.4 | -6.52 | -12.25 | -6.52 | -21.16 | -9.47 | -5.80 | | -6.21 | 01-01-2011 |
| Excess | | | -0.04 | -0.11 | -0.04 | -0.25 | -0.34 | -0.42 | | -0.41 | |
| BGI-LTD- R ESTATE FD | WILSHIRE RESI (DAILY) | 20.7 | -3.98 | -2.47 | -3.98 | -6.18 | 8.83 | 10.38 | 5.80 | 7.10 | 01-01-2005 |
| Excess | | | -0.12 | 0.17 | -0.12 | -0.48 | -0.43 | -0.79 | -0.48 | -0.46 | |
| BLACKROCK DJ UBS COMM FUND B | Bloomberg Commodity Index Total Return | 4.2 | -1.65 | -11.79 | -1.65 | -23.60 | -18.66 | -14.23 | | -13.84 | 01-01-2011 |
| Excess | | | 0.03 | -0.17 | 0.03 | -0.23 | -0.26 | -0.30 | | -0.29 | |
| LONG TERM DISABILITY - CASH | 91 DAY TREASURY BILL (DAILY) | 2.2 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.03 | 1.28 | 2.58 | 07-01-1995 |
| Excess | | | 0.01 | -0.03 | 0.01 | -0.04 | -0.05 | -0.05 | 0.06 | -0.05 | |
| TOTAL LTD | LTD POLICY INDEX | 198.5 | -4.35 | -6.20 | -4.35 | -5.61 | 4.24 | 5.53 | 4.05 | 5.63 | 07-01-2002 |

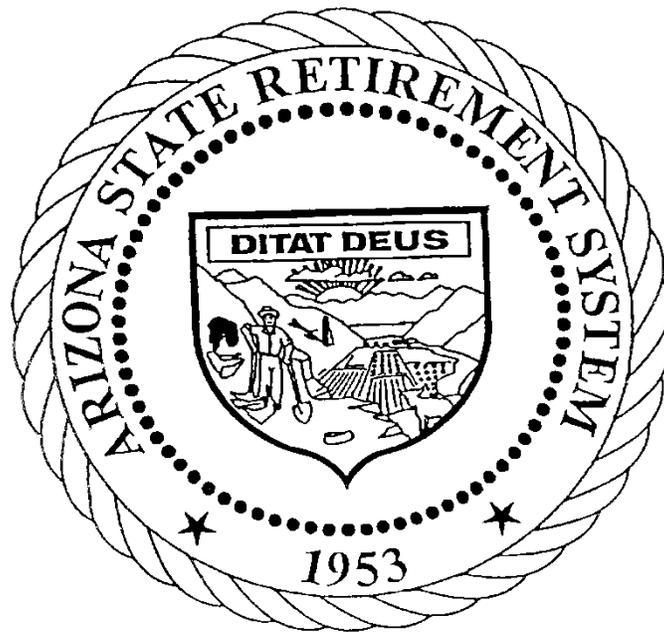
Long Term Disability (LTD)

Friday, January 29, 2016

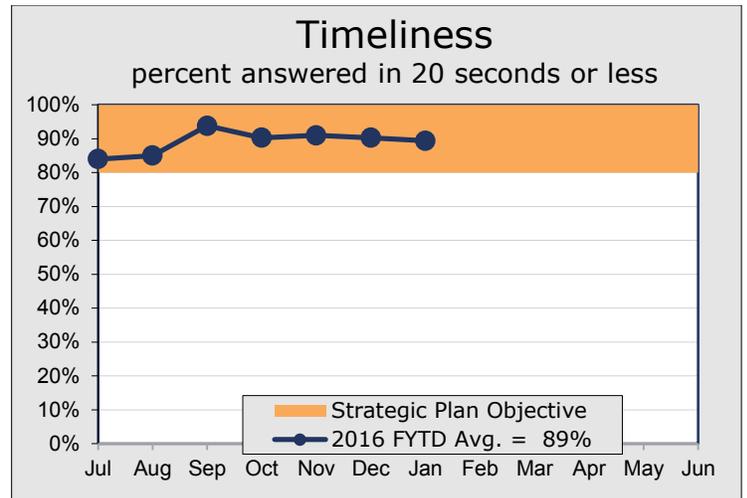
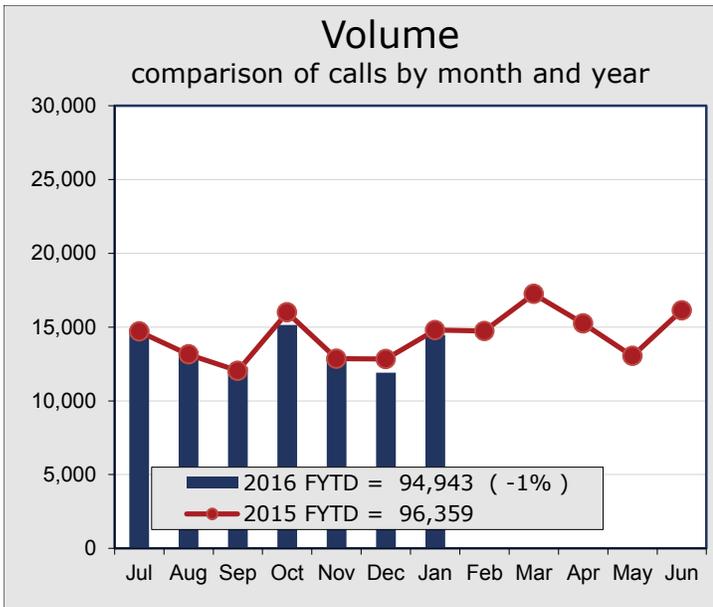
| Account Manager | Account Manager Style | Fixed Income | Equity | Inflation Linked | Total | Pct of Fund | Target (Range) |
|--------------------------|-------------------------------------|---------------------|---------------------|--------------------|----------------------|---------------|---------------------|
| StateStreet B&T: Boston | Cash | \$2,202,068 | | | \$2,202,068 | 1.13% | |
| BlackRock: San Francisco | Fixed Core (Passive) | \$27,527,570 | | | \$27,527,570 | 14.16% | 13% |
| BlackRock: San Francisco | Fixed High Yield (Passive) | \$16,420,005 | | | \$16,420,005 | 8.44% | 8% |
| BlackRock: San Francisco | Emerging Market Debt (Passive) | \$4,607,021 | | | \$4,607,021 | 2.37% | 4% |
| | | | | | | 24.97% | 25% (15-35%) |
| BlackRock: San Francisco | Russell 1000 (Passive) | | \$65,132,246 | | \$65,132,246 | 33.50% | 34% |
| BlackRock: San Francisco | Russell 2000 (Passive) | | \$13,179,007 | | \$13,179,007 | 6.78% | 6% |
| | | | | | | 40.28% | 40% (33-45%) |
| BlackRock: San Francisco | EAFE (Passive) | | \$25,137,091 | | \$25,137,091 | 12.93% | 14% |
| BlackRock: San Francisco | EAFE SC (Passive) | | \$6,824,163 | | \$6,824,163 | 3.51% | 3% |
| BlackRock: San Francisco | Emerging Markets (Passive) | | \$9,129,578 | | \$9,129,578 | 4.70% | 6% |
| | | | | | | 21.13% | 23% (16-28%) |
| BlackRock: San Francisco | Dow Jones UBS Commodities (Passive) | | | \$4,141,585 | \$4,141,585 | 2.13% | 4% (1-7%) |
| BlackRock: San Francisco | US Real Estate (Passive) | | | \$20,140,276 | \$20,140,276 | 10.36% | 8% (6-10%) |
| | | | | | | 12.49% | 12% (8-16%) |
| | TOTAL Amounts | \$50,756,664 | \$119,402,086 | \$24,281,861 | \$194,440,611 | | |
| | TOTAL Percent | 26.10% | 61.41% | 12.49% | | | |
| | Actual Portfolio | 26.10% | 61.41% | 12.49% | | | |
| | Policy | 25% (15-35%) | 63% (53-70%) | 12% (8-16%) | | | |

Agenda Item #10b

Director's Report Operations

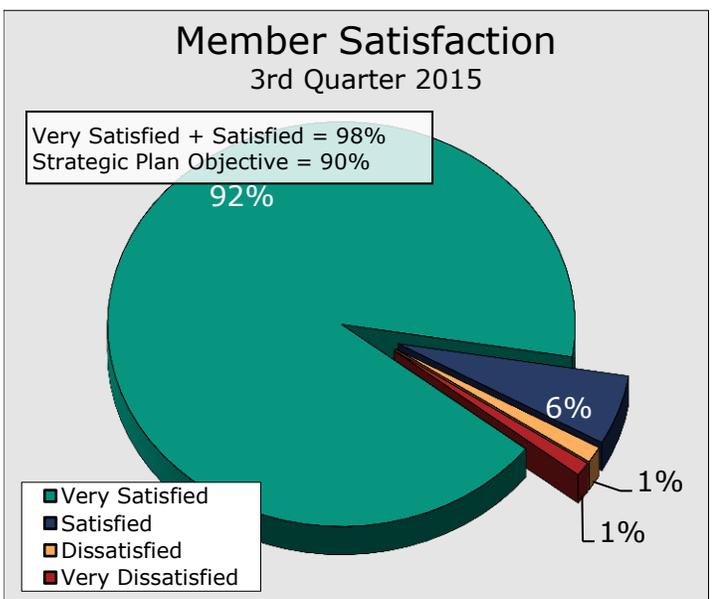
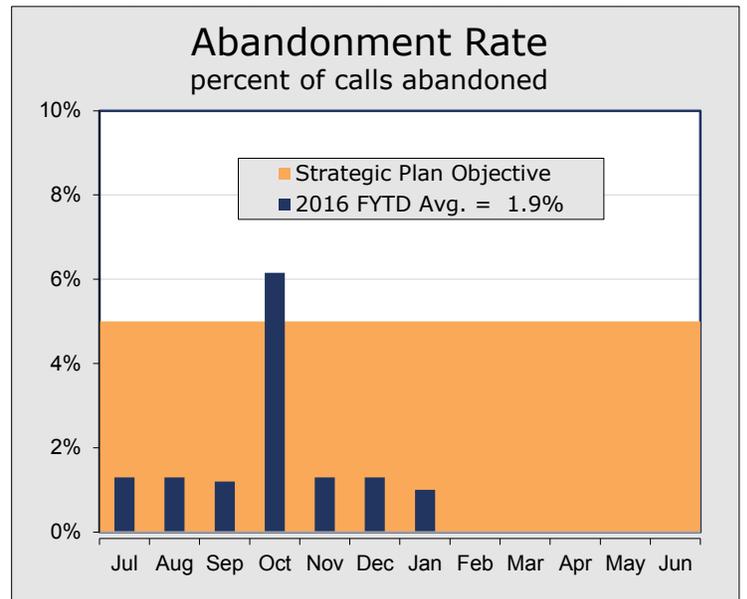
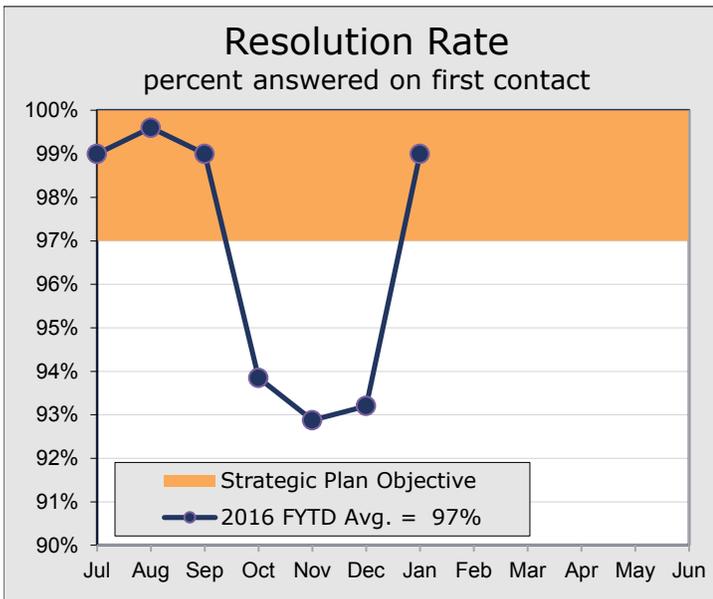


Member Advisory Center: Phone

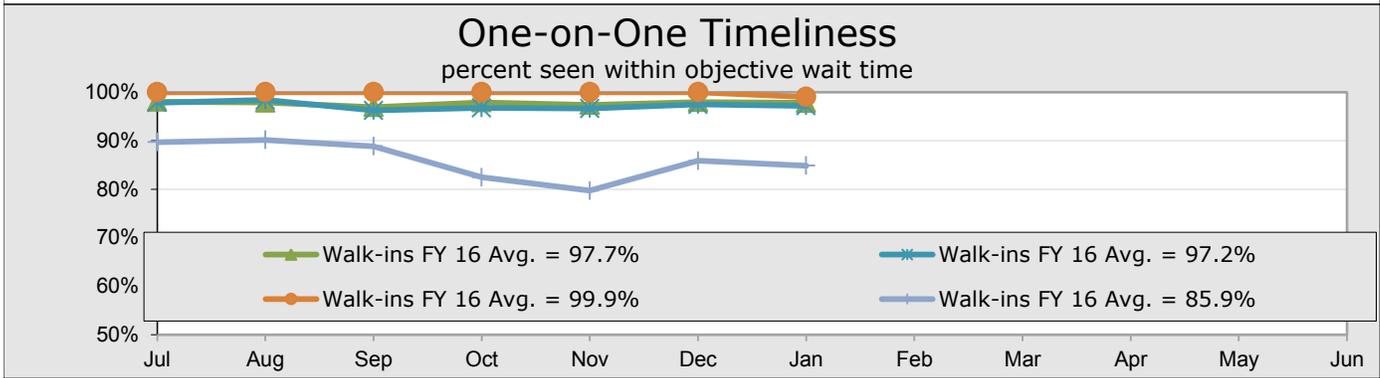
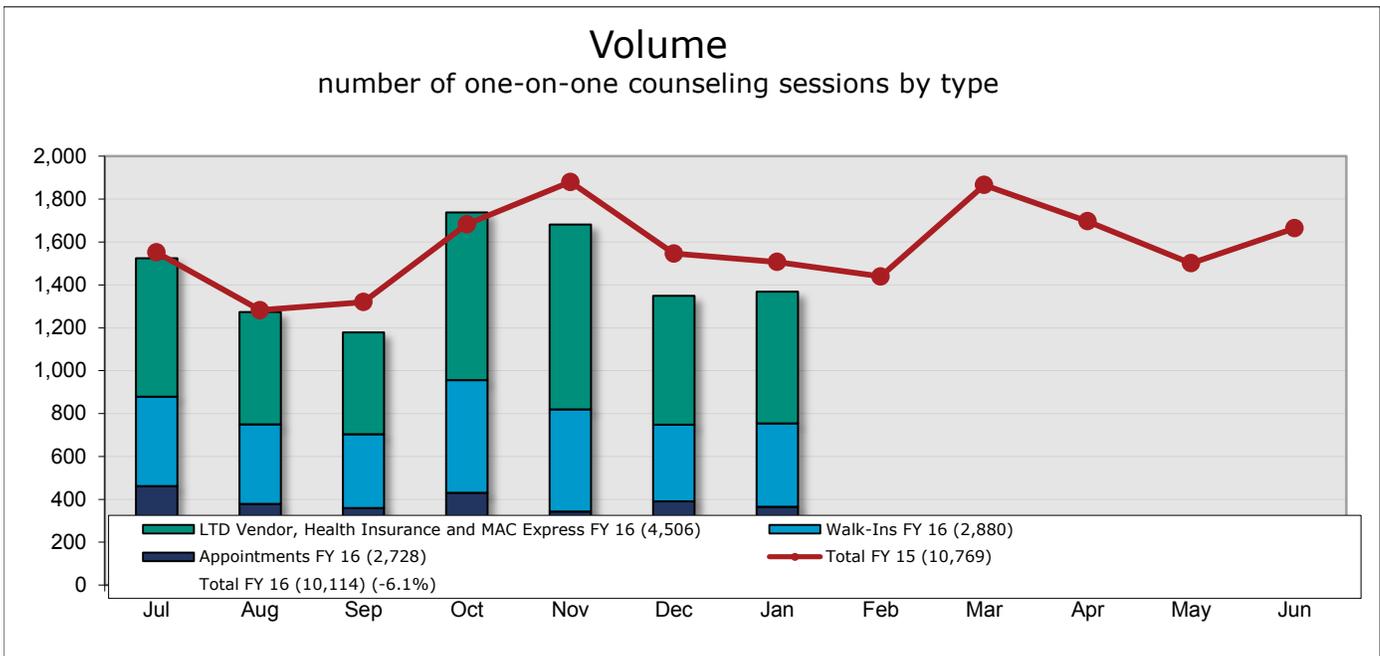


Timeliness (average wait time in seconds)

| Month | 2016 FYTD Avg. |
|-------|----------------|
| Jul | 20 |
| Aug | 20 |
| Sep | 7 |
| Oct | DNA |
| Nov | DNA |
| Dec | DNA |
| Jan | DNA |
| Feb | |
| Mar | |
| Apr | |
| May | |
| Jun | |

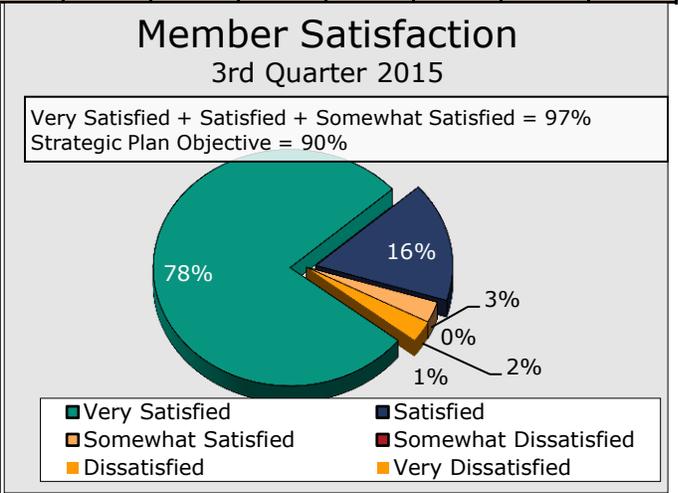
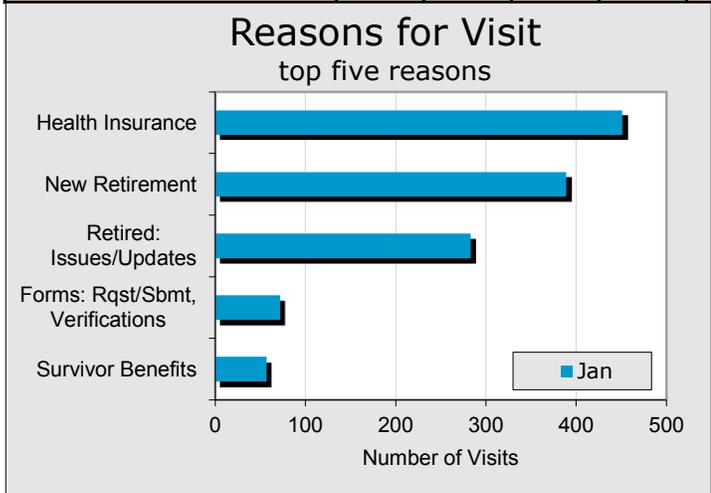


Member Advisory Center: One-on-One

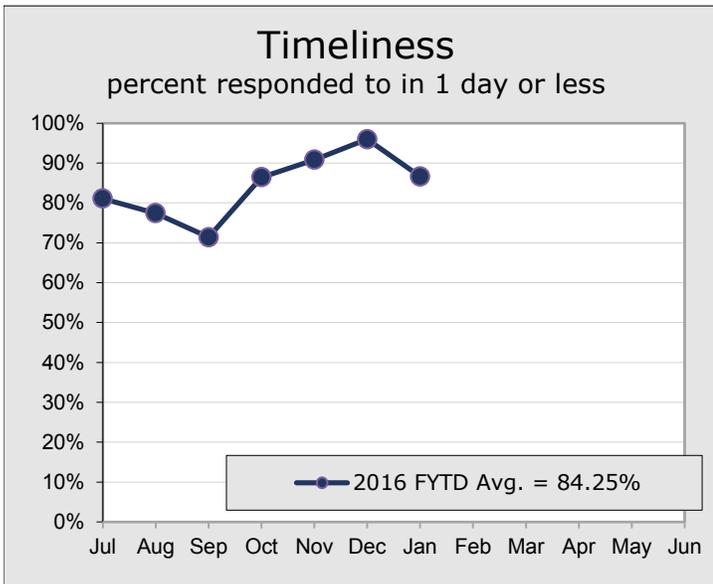
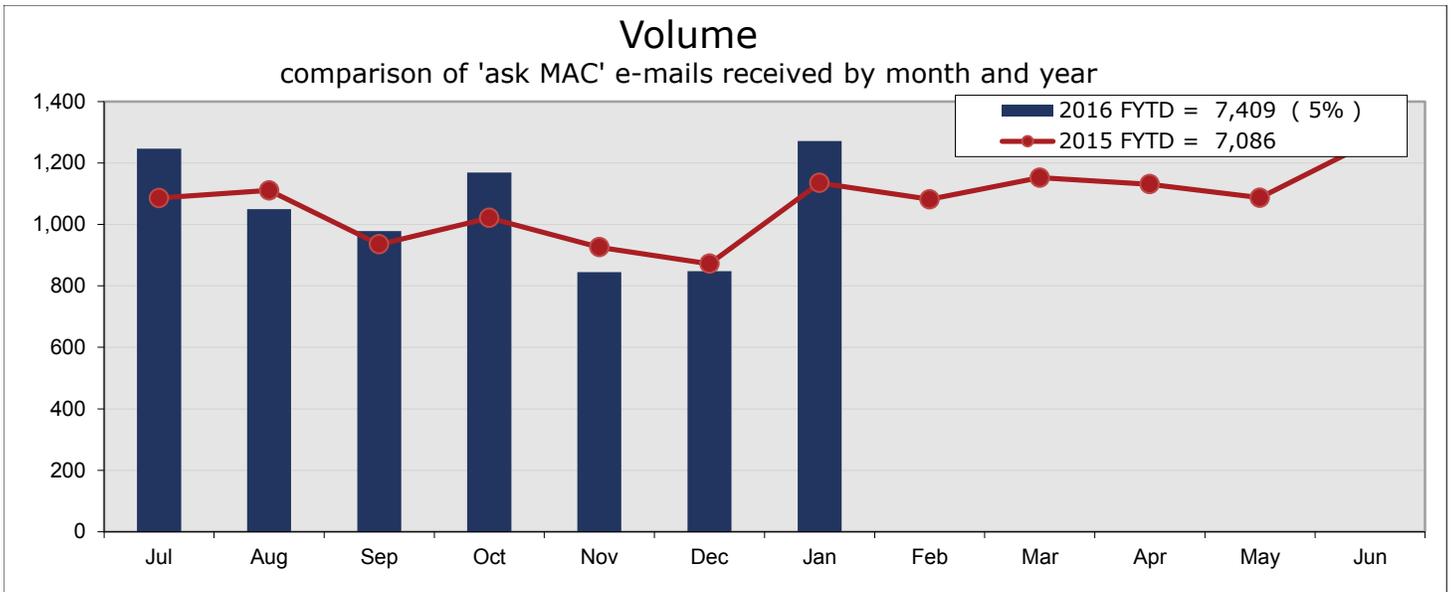


Timeliness (average wait time in minutes)

| | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Appointments | 0 | 0 | 1 | 0 | 1 | 1 | 1 | | | | | |
| Walk-Ins | 5 | 5 | 7 | 5 | 5 | 4 | 7 | | | | | |
| Reception/MAC Express | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| Health Insurance | 5 | 5 | 7 | 8 | 9 | 6 | 8 | | | | | |
| LTD Vendor | 0 | 0 | 0 | n/a | n/a | n/a | n/a | | | | | |

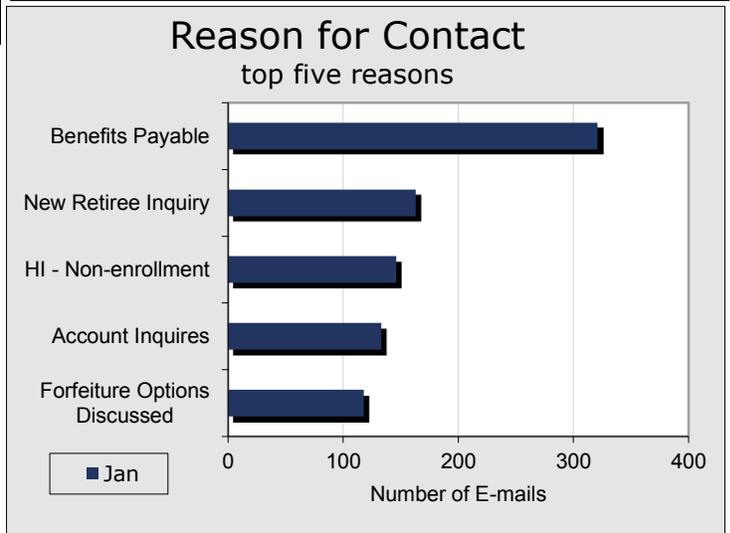
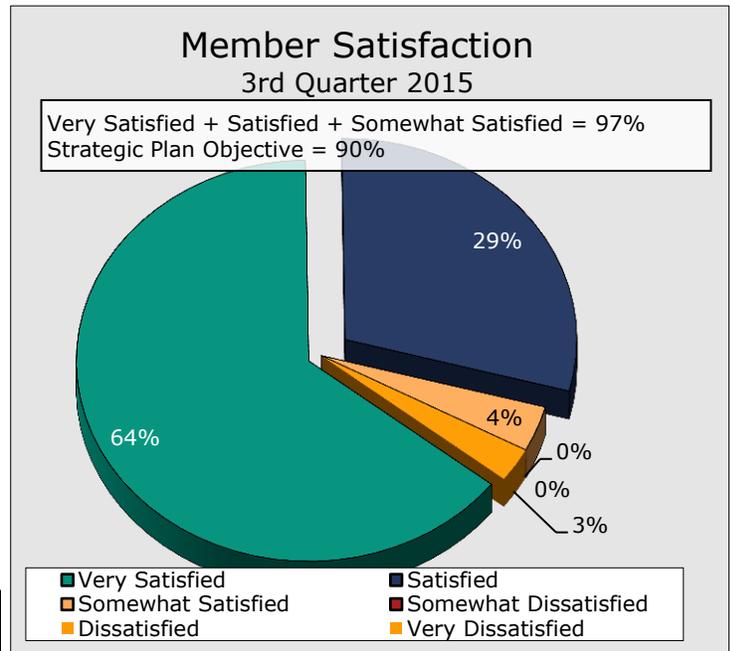


Member Advisory Center: E-Mail



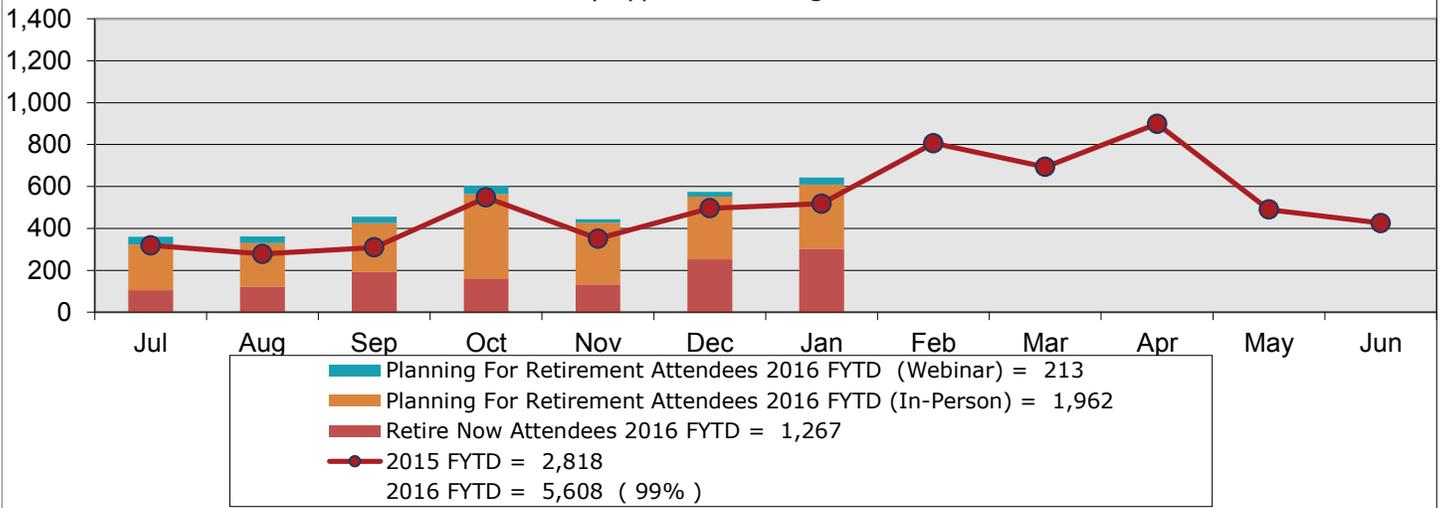
Timeliness (average response in hours)

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 15 | 18 | 20 | 10 | 8 | 7 | 13 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |



Outreach Education and Benefit Estimates

Total Meeting Attendees by type of meeting

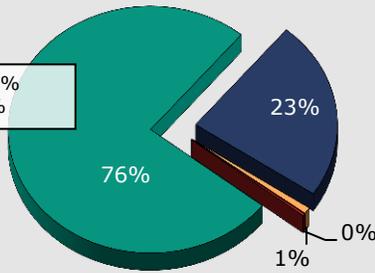


Member Satisfaction

Planning for Retirement Meetings 3rd Quarter 2015

Very Satisfied + Satisfied = 99%
Strategic Plan Objective = 90%

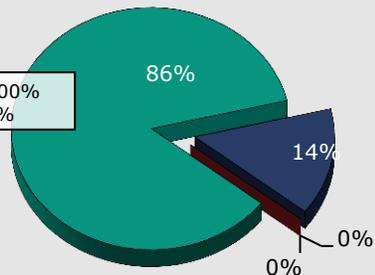
- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



Retire Now Meetings 1st Quarter 2015

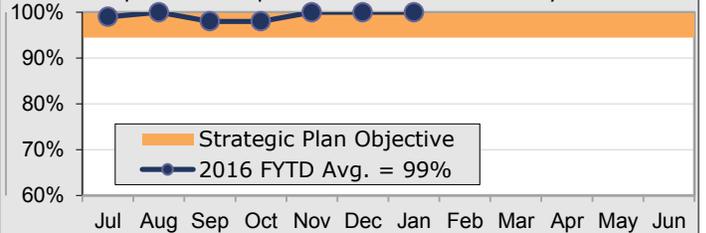
Very Satisfied + Satisfied = 100%
Strategic Plan Objective = 90%

- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



Benefit Estimate Timeliness

percent completed within 3 business days



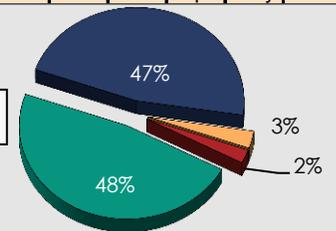
Benefit Estimate Timeliness (average TAT in days)

| Month | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Average TAT (days) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

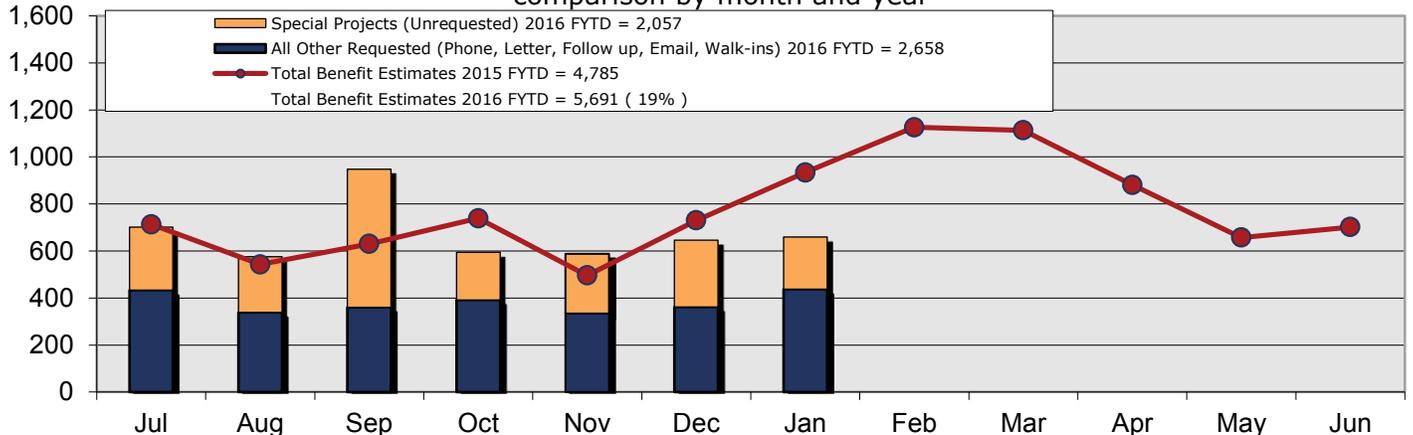
Benefit Estimates 3rd Quarter 2015

Very Satisfied + Satisfied = 95%
Strategic Plan Objective = 90%

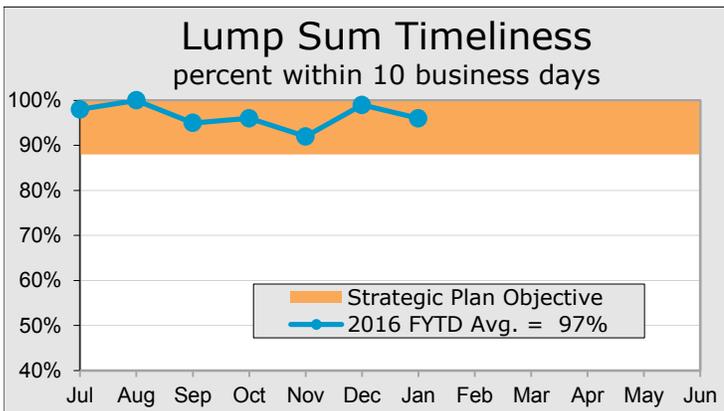
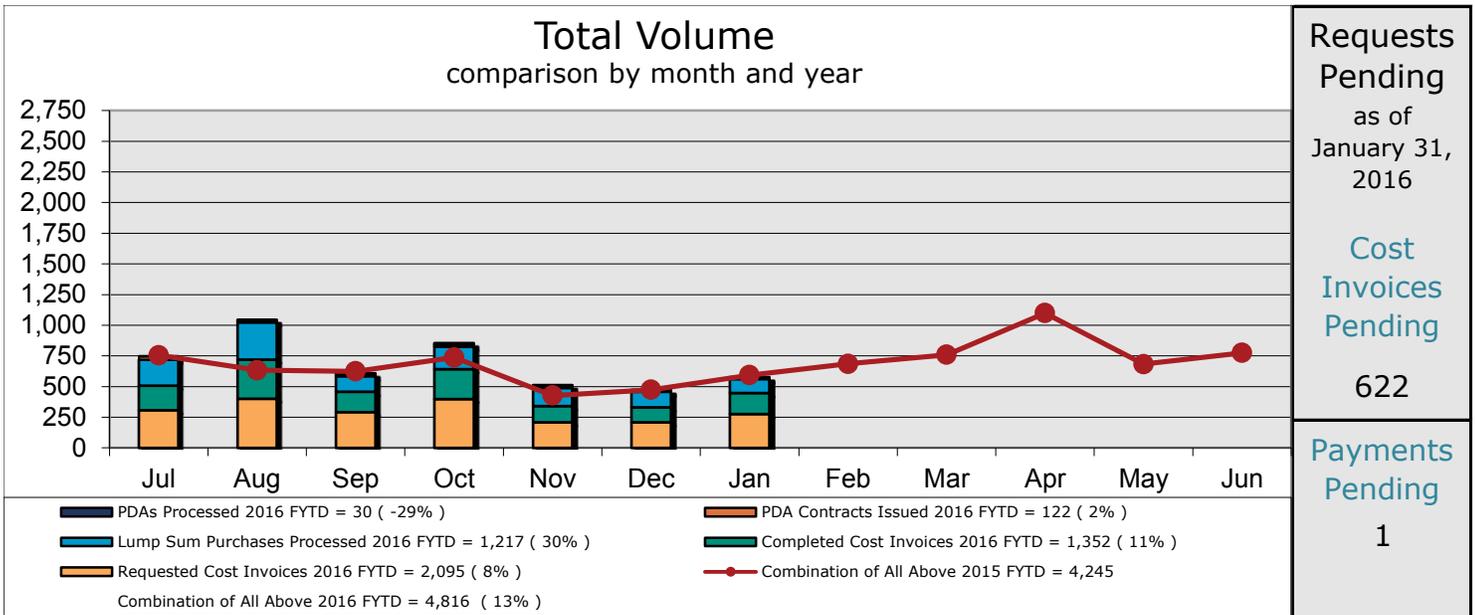
- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



Benefit Estimate Volume comparison by month and year

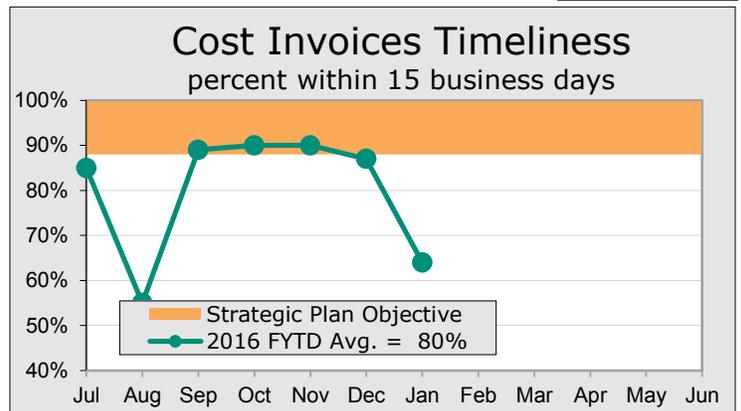


Service Purchase



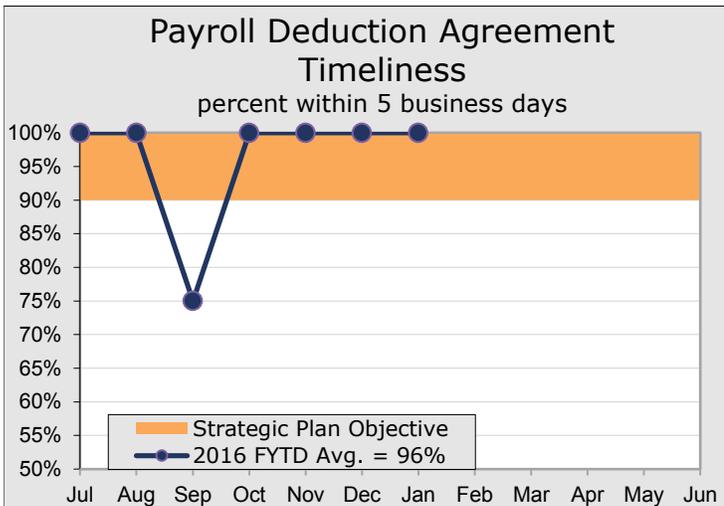
Timeliness (average turnaround time in business days)

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2 | 2 | 2 | 2 | 3 | 3 | 2 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |



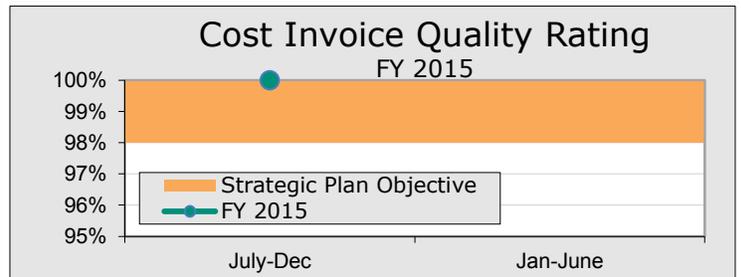
Timeliness (average turnaround time in business days)

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 9 | 11 | 6 | 8 | 8 | 11 | 11 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |



Timeliness (average turnaround time in business days)

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 2 | 3 | 1 | 1 | 1 | 1 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |

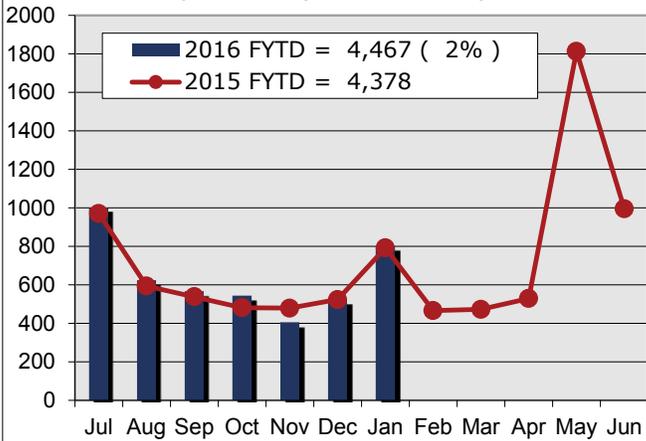


Member Satisfaction 3rd Quarter 2015

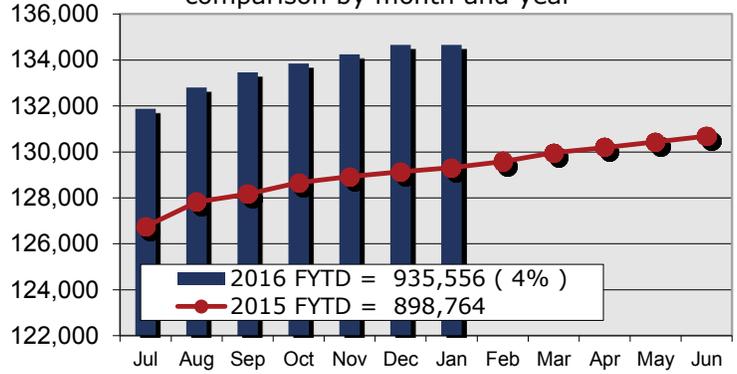
Data not Available

New Retiree and Pension Payroll

First Payment Volume comparison by month and year



Pension Volume comparison by month and year



Pension Payment (percent disbursed by 1st of the months)

| | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|--|--|--|
| 100% | 100% | 100% | 100% | 100% | 100% | 100% | | | | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | | | |

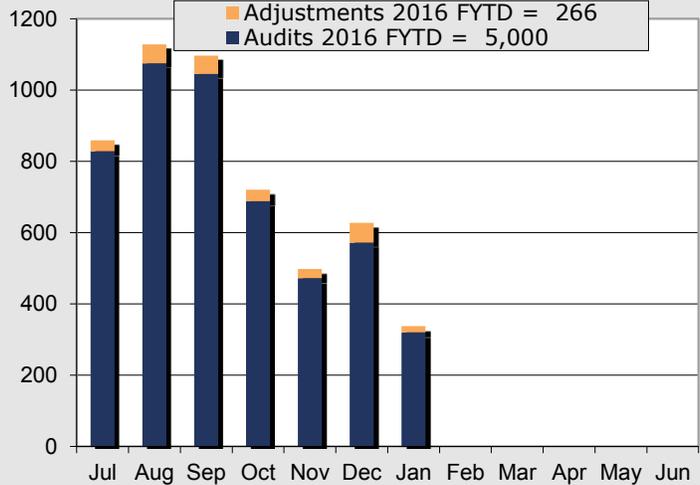
First Payment Timeliness percent disbursed in 10 business days



First Payment Timeliness (average turnaround time in days)

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| 5 | 6 | 6 | 7 | 10 | 8 | 5 | | | | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | | | |

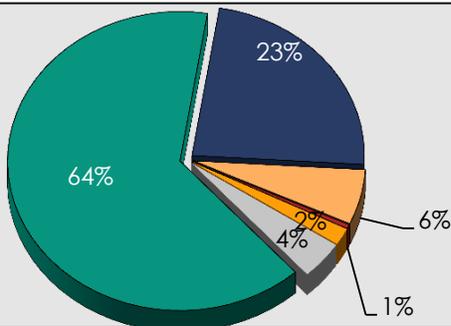
Audits & Adjustments comparison by month and year



Member Satisfaction

3rd Quarter 2015

Very Satisfied + Satisfied + Somewhat Satisfied = 93%
Strategic Plan Objective = 90%



- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Somewhat Dissatisfied
- Dissatisfied
- Very Dissatisfied

Adjustments Timeliness

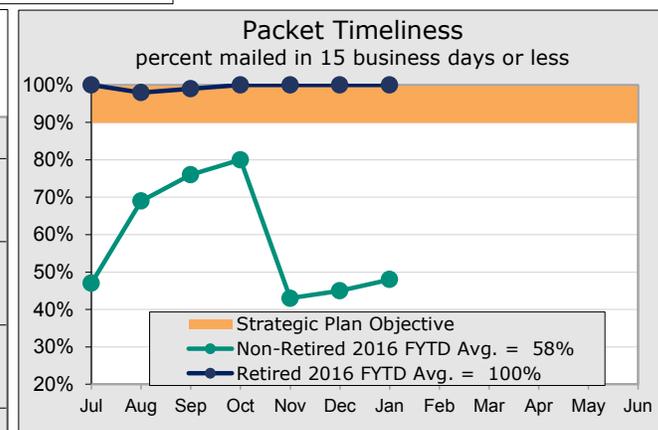
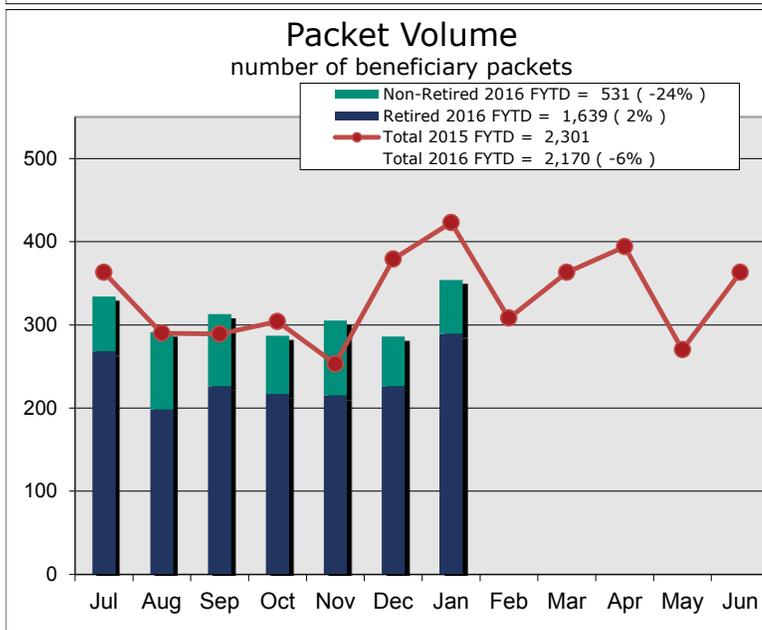
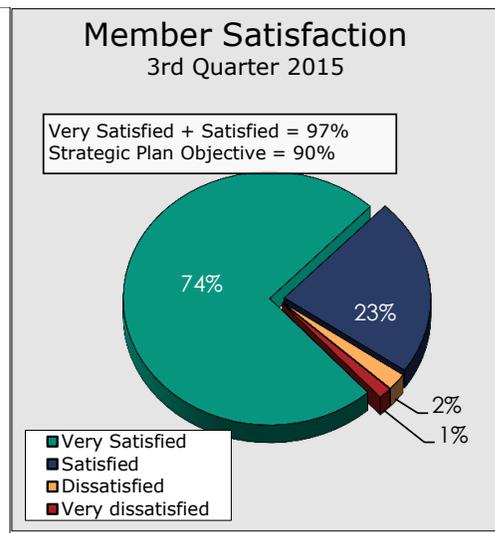
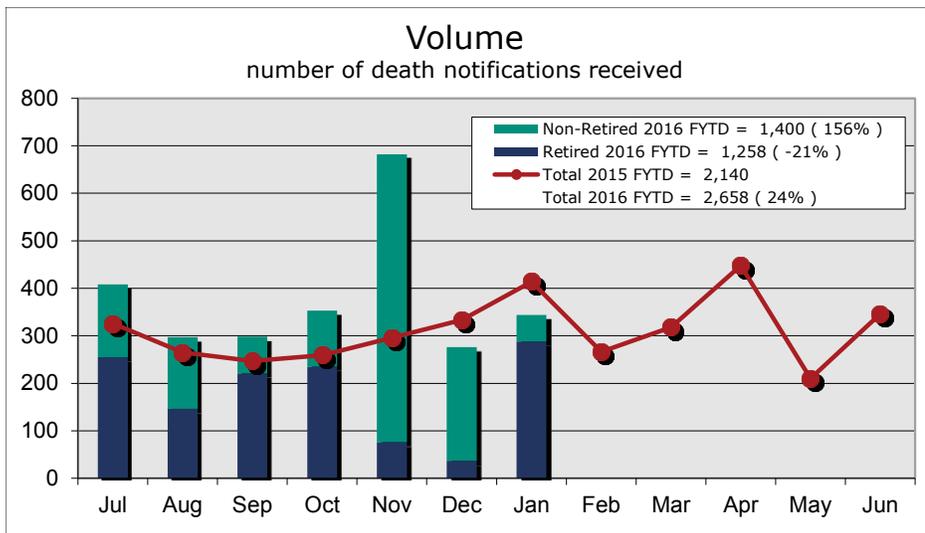
Percent completed in 20 business days



Adjustments Timeliness (average turnaround time in days)

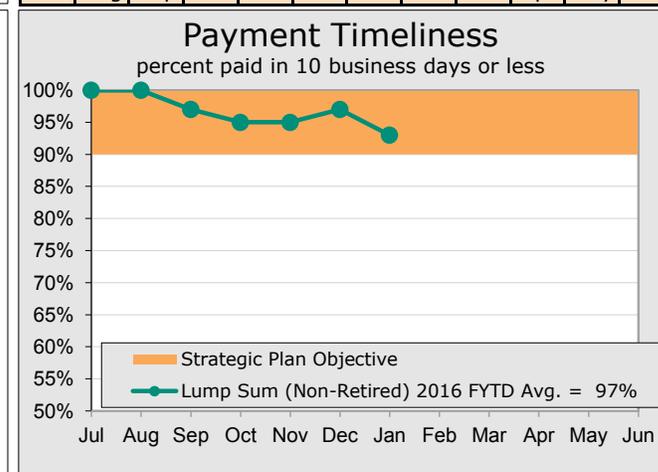
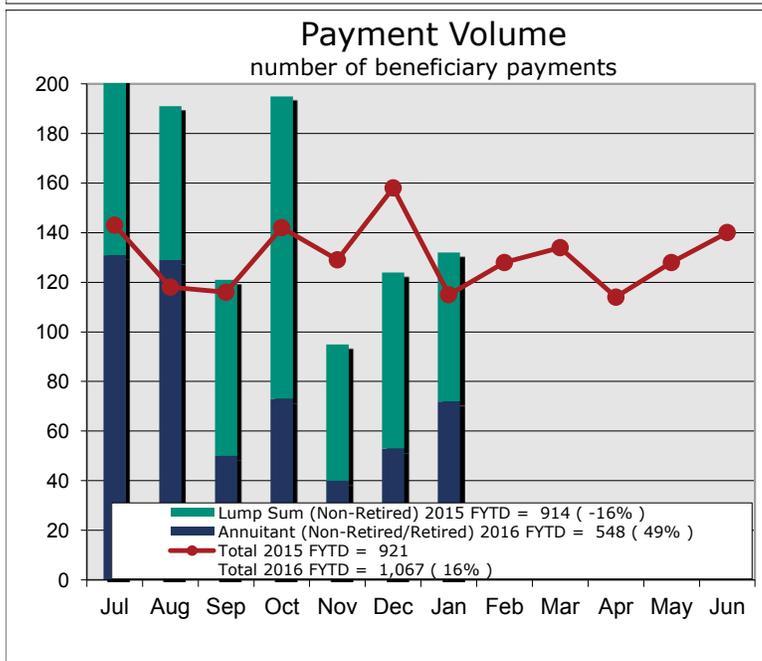
| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| 4 | 5 | 2 | 3 | 4 | 11 | 4 | | | | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | | | |

Survivor Benefits



Packet Timeliness (average TAT in days)

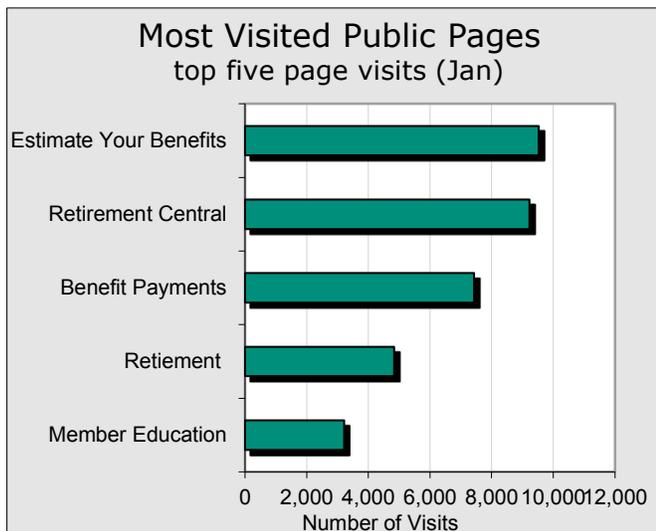
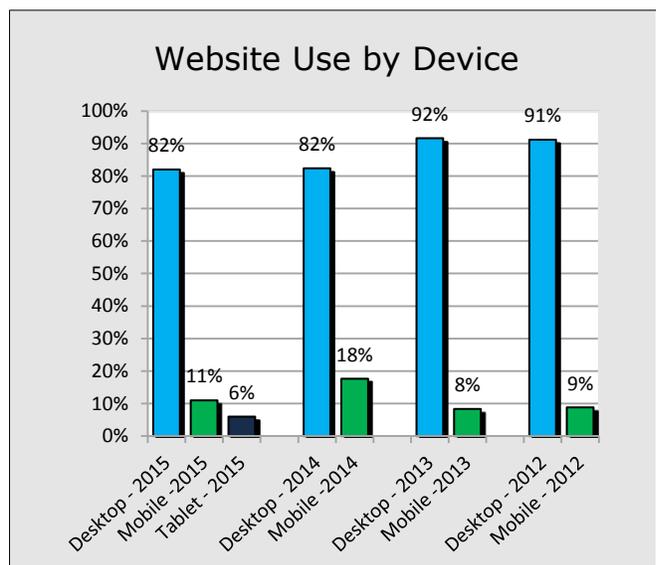
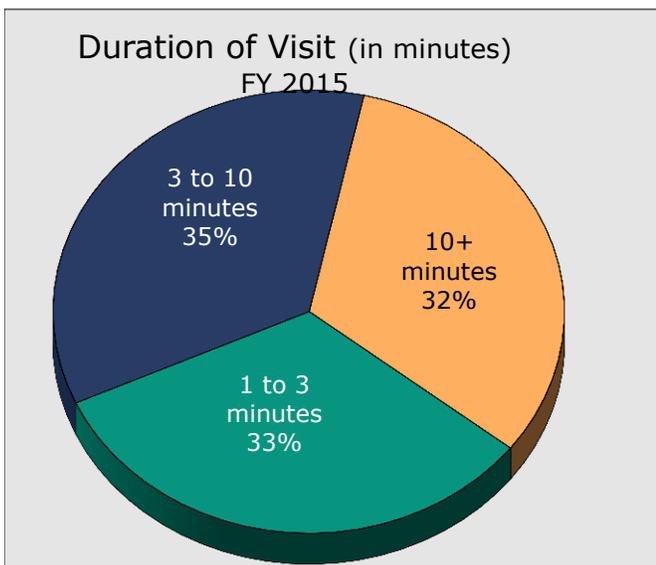
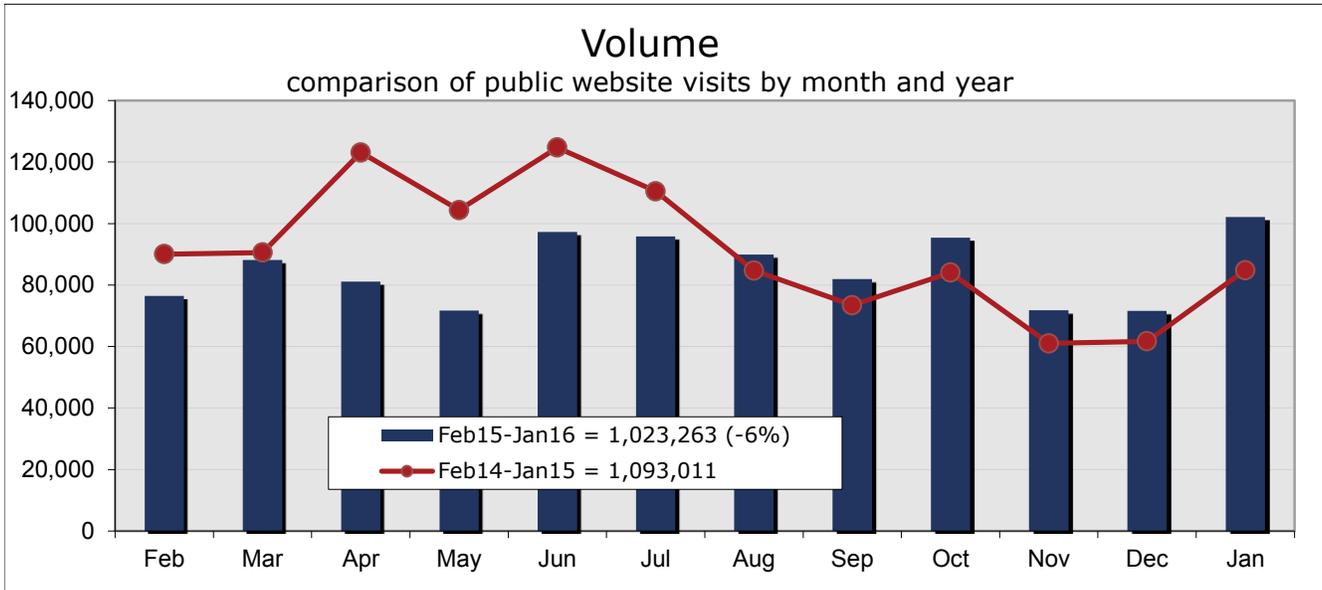
| | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Non Retired | | | | | | | | | | | |
| 40 | 40 | 22 | 7 | 20 | 157 | 86 | | | | | |
| Retired | | | | | | | | | | | |
| 2 | 2 | 2 | 2 | 3 | 3 | 2 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |



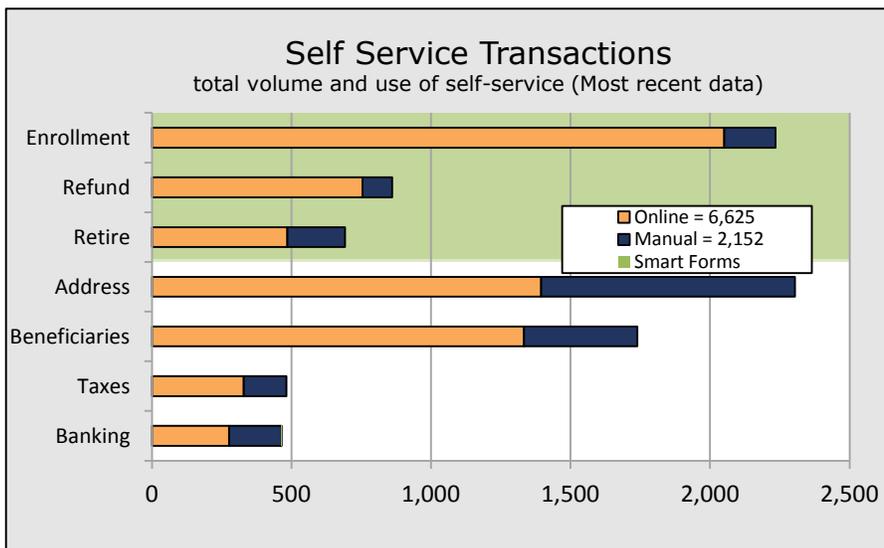
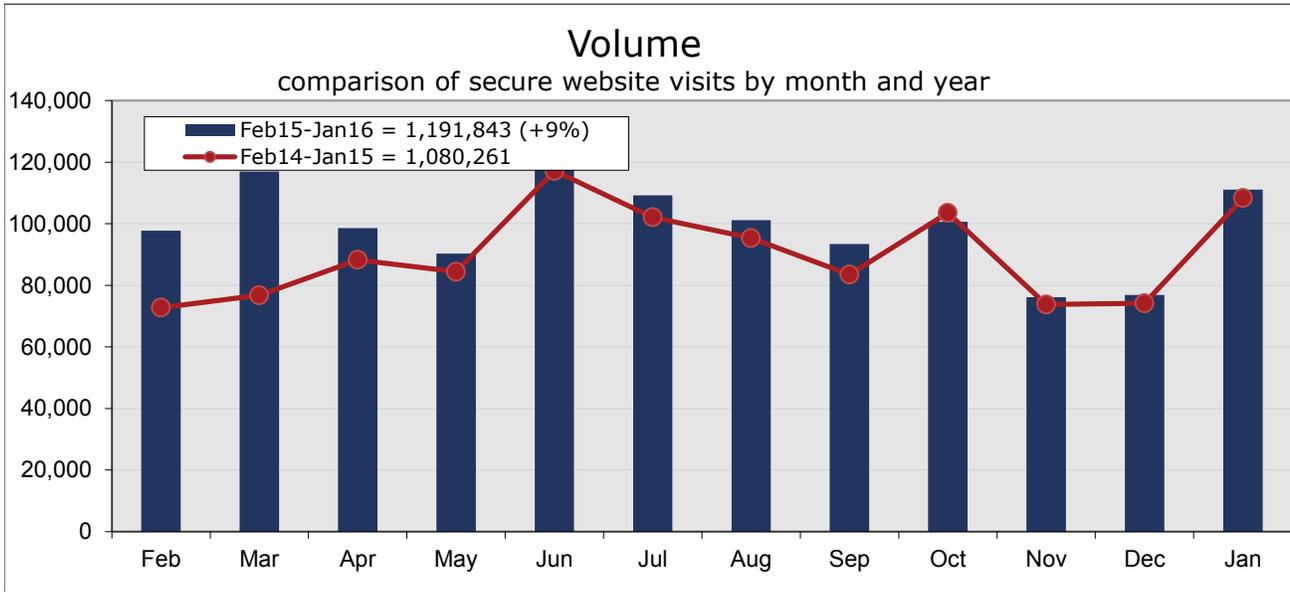
Payment Timeliness (average TAT in days)

| | | | | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lump Sum (Non-Retired) | | | | | | | | | | | |
| 4 | 3 | 5 | 5 | 5 | 5 | 7 | | | | | |
| Annuity (Retired and Non-Retired) | | | | | | | | | | | |
| 3 | 2 | 4 | 3 | 2 | 3 | 3 | | | | | |
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |

Public Website: www.azasrs.gov



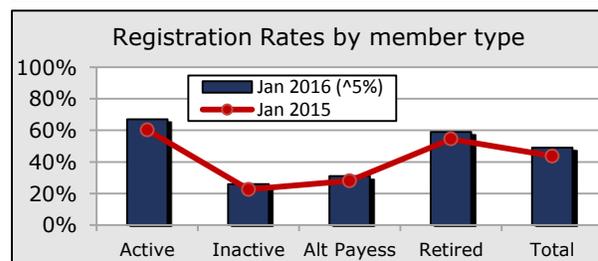
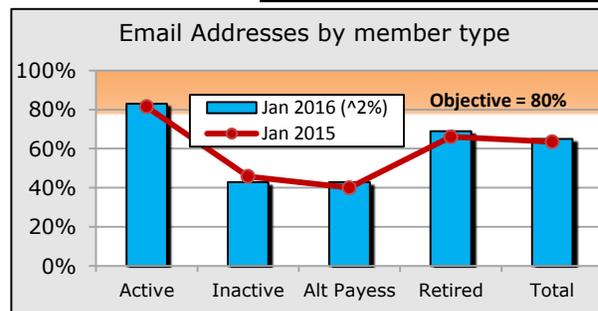
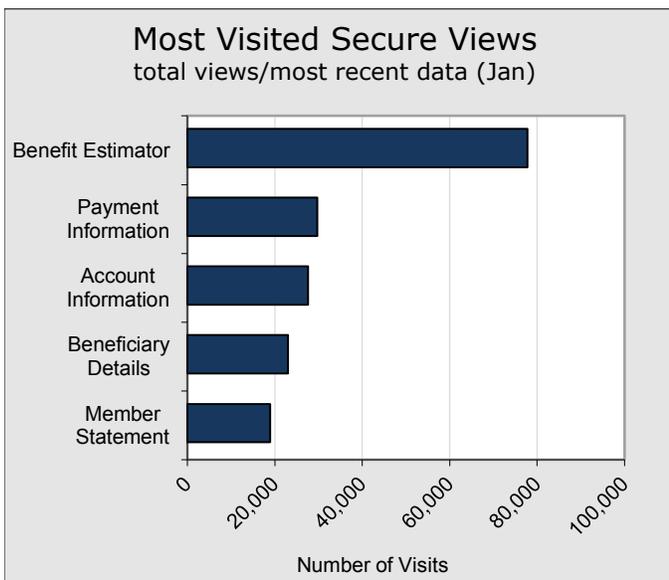
Secure Website: secure.azasrs.gov



Historical Comparison of Online Usage

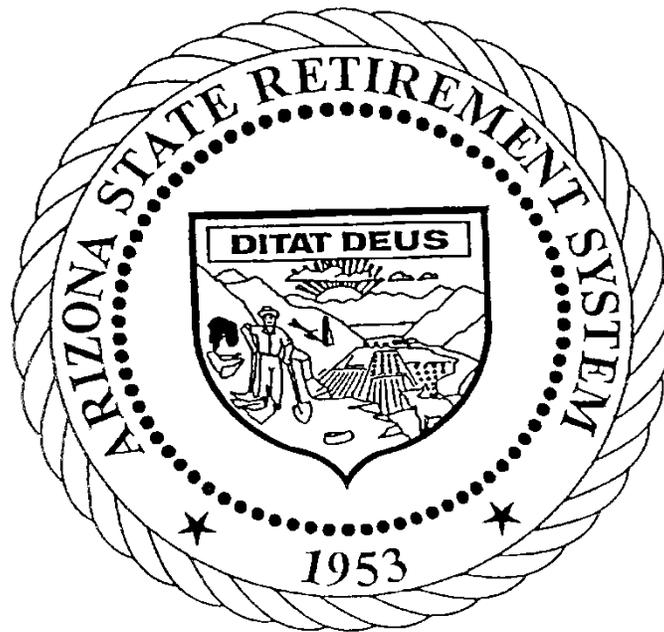
| | This month | 12mo Min | 12mo Max | 12mo Avg | Objective |
|-------|------------|----------|----------|----------|-----------|
| Enrol | 92% | 89% | 97% | 93% | 99% |
| Ref | 88% | 88% | 98% | 92% | 90% |
| Ret | 70% | 67% | 73% | 70% | 90% |
| Add | 70% | 70% | 86% | 76% | 75% |
| Bene | 77% | 52% | 87% | 74% | 75% |
| Tax | 68% | 67% | 91% | 79% | 75% |
| DD | 60% | 41% | 60% | 54% | 75% |

Total online this month: **75%**



Agenda Item #10c

Director's Report Budget & Staffing



Arizona State Retirement System
FY 2016 Appropriated Budget
(as of January 31, 2016)

| | APPROPRIATIONS FISCAL YEAR 2016 | EXPENDED YTD | % EXPENDED |
|--|------------------------------------|----------------------|---------------|
| OPERATING BUDGET | | | |
| Personal Services | \$ 13,091,900 | \$ 7,040,300 | 53.78% |
| Employee Related Expenses | \$ 5,063,500 | \$ 2,699,300 | 53.31% |
| Professional & Outside Services | \$ 1,292,400 | \$ 796,600 | 61.64% |
| Travel | \$ 79,900 | \$ 57,700 | 72.22% |
| Other Operating Expenses | \$ 2,732,800 | \$ 879,800 | 32.19% |
| Equipment | \$ 651,100 | \$ 179,700 | 27.60% |
| Operating Subtotal | \$ 22,911,600 | \$ 11,653,400 | 50.86% |
| OTHER APPROPRIATIONS | | | |
| Long Term Disability Administration | \$ 2,800,000 | \$ 798,300 | 28.51% |
| Oracle Forms and Reports Modernization (Yr. 3) | \$ 2,270,000 | \$ 468,800 | 20.65% |
| TOTAL FY 2016 Appropriated Funds | \$ 27,981,600 | \$ 12,920,500 | 46.17% |

| | APPROPRIATIONS | EXPENDED PRIOR YEARS | EXPENDED CURRENT YEAR | % EXPENDED |
|--|----------------|-------------------------|--------------------------|---------------|
| PRIOR YEAR APPROPRIATIONS (NON-LAPSING) | | | | |
| FY 2015 - Oracle Forms and Reports Modernization (Yr. 2) | \$ 4,484,500 | \$ 1,463,600 | \$ 272,300 | 38.71% |
| FY 2011 - HB 2389 - ASRS Plan Design Changes | \$ 1,341,700 | \$ 1,247,100 | \$ - | 92.95% |
| FY 2011 - ASRS Operating Budget | \$ 20,570,100 | \$ 19,901,200 | \$ - | 96.75% |

Budget Summary for Fiscal Year 2016 As of January 31, 2016

Operating Budget

The operating budget information on the previous page is based on funding approved by the Board and the Legislature for fiscal year July 1, 2015 through June 30, 2016. These ASRS operating expenses are distinguished from other areas of ASRS spending authority: such as expenditures for investment management and benefits payments. Administrative salaries and employee benefits, supplies, equipment and ongoing operational costs associated with information and financial systems for the ASRS Board and ASRS employees are funded from the operating budget. Expenditures to date include fifteen pay periods (57.7% of the annual payrolls) of fiscal year 2016.

Other Appropriations

Other appropriations, which are considered part of the annual budget, represent other appropriations for specific programs or services authorized by the Board and the Legislature.

- **Long Term Disability Administration Fund**
The amount appropriated for the administration costs of the LTD program.

- **Oracle Forms and Reports Modernization**
The amount appropriated (non-lapsing) for the third year of the software modernization project.

Non-Lapsing Appropriations for Legislative Initiatives

The amount appropriated by the Legislature for the implementation of:

- FY 2015 - Oracle Forms and Reports Modernization (Yr. 2)
- FY 2011 - HB 2389 - ASRS Plan Design Changes
- FY 2011 - ASRS Operating Budget and LTD Admin
 - HB 2024, Section 93 modified the FY 2011 ASRS appropriations to be non-lapsing appropriations. The ASRS has the ability to utilize the unspent portion of these appropriations in ensuing fiscal years.

Explanation of Columns

- 1) The *Appropriations* column represents funds that have been approved by the Legislature and the ASRS Board for FY 2016, and includes prior year legislative appropriations.

- 2) The *Expended* column represents the expenditures to date.

- 3) The *% Expended* column identifies the portion of each line item that has been expended to date. This column is intended to be a guide to the rate of spending during the fiscal year.

ASRS FISCAL YEAR 2016, CONTINUOUSLY APPROPRIATED REPORT

(with summarized Appropriated Expenses)

| DESCRIPTION | EXPENDED YTD as of 1/31/16 | ESTIMATED ANNUAL EXPENSES (Projections updated quarterly) | EST. ANNUAL EXPENSES AS % OF TOTAL AUM | EST. ANNUAL EXPENSES PER MEMBER |
|--|-------------------------------|--|--|---------------------------------------|
| Custodial Banking, Security Lending and Master Cash STIF Fees | 1,426,000 | 3,077,000 | | |
| Internal Investment Management (Salaries and Benefits) | 908,000 | 1,751,000 | | |
| <u>Public Markets</u> | | | | |
| External Investment Management Fees | 17,037,000 | 61,302,000 | | |
| Transactional and Other Fees | 1,547,000 | 2,110,000 | | |
| <u>Private Markets</u> | | | | |
| Private Debt and Equity Management Fees | 14,238,000 | 46,000,000 | | |
| Private Debt and Equity Performance Incentive and Other Fees | 20,239,000 | 60,000,000 | | |
| Real Estate, Farmland and Timber and Infrastructure Management Fees | 10,626,000 | 25,000,000 | | |
| Real Estate, Farmland and Timber and Infrastructure Performance Incentive and Other Fees | 25,896,000 | 35,000,000 | | |
| Opportunistic Debt and Equity Management Fees | 3,820,000 | 10,000,000 | | |
| Opportunistic Debt and Equity Performance Incentive and Other Fees | 3,708,000 | 5,000,000 | | |
| Investment Management Expenses | \$ 99,445,000 | \$ 249,240,000 | 0.751% | \$ 445.95 |
| Investment Consulting Services | 1,493,000 | 4,354,000 | | |
| Investment Related Legal Services | 539,000 | 1,175,000 | | |
| Investment Electronic Information Services | 1,035,000 | 2,376,000 | | |
| External Financial Consulting Services | - | 110,000 | | |
| Investment Related Consulting, Legal and Information Services | \$ 3,067,000 | \$ 8,015,000 | 0.024% | \$ 14.34 |
| Rent | 752,000 | 1,505,000 | 0.005% | \$ 2.69 |
| Actuarial Consulting Fees | 55,000 | 925,000 | 0.003% | \$ 1.66 |
| Retiree Payroll (Disbursement Administration) | 1,526,000 | 3,715,000 | 0.011% | \$ 6.65 |
| Total Continuously Appropriated Expenses | \$ 104,845,000 | \$ 263,400,000 | 0.793% | \$ 471.28 |
| *Total Current Year Appropriated Expenses | \$ 13,192,800 | \$ 28,981,600 | 0.087% | \$ 51.85 |
| <small>* Includes estimated prior year non-lapsing appropriations of \$1,000,000 related to the Oracle Forms and Reports Modernization Project</small> | | | | |
| Total Expenses (Continuously Appropriated and Appropriated) | \$ 118,037,800 | \$ 292,381,600 | 0.880% | \$ 523.14 |

ASRS Estimated Total Market Value of Assets Under Management (AUM) as of September 30, 2015

\$ 33,208,020,000

ASRS Total Membership as of June 30, 2015

558,900

Continuously Appropriated Expenses for FY 2016 Estimated Expenditures

The Arizona State Retirement System (ASRS) investment and administrative costs are expended in accordance with Arizona Revised Statutes (A.R.S.), Title 38, Chapter 5, Article 2, Section 38-721. A.R.S. Section 38-721, Subsection C, lists specific expenditures that are continuously appropriated and are allowable in the amount deemed necessary by the Board.

These specific expenditures are described below:

1. Investment management fees and related consulting fees necessary to meet the Board's investment objectives

Internal Investment management

- ASRS Investment Management Division staff base salaries and employer portion of staff benefits and payroll taxes.

External investment management fees

- Public Markets
 - External investment management fees (public).
 - Management fees (public) year-to-date expenditure amounts reflect the fees due for the first quarter and ten percent of the fees due for the second quarter of FY 2016.
 - Transactional and other fees include foreign taxes and commissions on derivatives and other incidental costs.
- Private Markets
 - Private Debt and Equity, Real Estate, Farmland and Timber and Infrastructure and Opportunistic Debt and Equity investment management fees.
 - Performance incentive fees include performance incentives and carried interest, which are only paid upon successful performance of the manager after other return hurdles are met. Other fees are the ASRS proportional share of the transactional and operational cost of the underlying investment structure. Each of these fees is only paid if earned or incurred, and therefore may vary each quarter.
 - Management and performance incentive fees year-to-date expenditure amounts reflect the fees due for the first quarter of FY 2016.

Consulting fees

- Includes investment related consulting and legal fees, electronic information services and subscriptions, custodial banking administrative fees, external auditing service fees.

2. Rent

- Costs associated with rent as tenants for occupancy in the 3300 Tower in Phoenix and in the satellite office in Tucson.

3. Actuarial consulting fees

- Costs associated with actuarial services related to plan design, administration and valuations.

4. Retiree Payroll

- Costs associated with administering retiree pension benefits and disbursements, including third-party payroll administration fees, postage and benefit related consulting fees and the beginning phase of the ASRS Benefit Disbursement project.

The report includes projected expenditures for the current fiscal year. Actual expenditures are reported monthly and estimated annual expenses are reviewed and adjusted quarterly. The estimated annual expenses reflected were last updated as of the close of the quarter ending September 30, 2015.

**Arizona State Retirement System
Staffing Report
(January 31, 2016)**

| ASRS by Division | 252 Full Time Equivalents (FTEs) | New Hires | New Exits | Vacancies | Vacancy Rate |
|--|----------------------------------|------------|------------|--------------|---------------|
| Administrative Services Division (ASD) | 16 | 0.0 | 0.0 | 1.25 | 7.81% |
| Director's Office (DIR) | 15 | 1.0 | 0.0 | 0.0 | 0.00% |
| External Affairs (EAD) | 3 | 0.0 | 0.0 | 0.0 | 0.00% |
| Financial Services (FSD) | 62 | 0.0 | 2.0 | 10.50 | 16.94% |
| Technology Services (TSD) | 52 | 0.0 | 0.0 | 6.0 | 11.54% |
| Internal Audit (IAD) | 6 | 0.0 | 0.0 | 1.75 | 29.17% |
| Investment Management (IMD) | 12 | 0.0 | 0.0 | 2.0 | 16.67% |
| Member Services (MSD) | 86 | 0.0 | 0.0 | 8.75 | 10.17% |
| | 252 | 1.0 | 2.0 | 30.25 | 12.00% |

| Turnover | January 2016 New Hires | January 2016 Exits | Total Exits (Last 12 Months) | Annualized Turnover % |
|----------|------------------------|--------------------|------------------------------|-----------------------|
| | 1.0 | 2.0 | 31 | 13.38% |

Recruitments

Beginning February 2015, all ASRS recruitments were placed on hold until further notice due to the State of Arizona Hiring Freeze. Specific ASRS positions are critical to the core functions and operations of the agency and if left unfilled will negatively impact the agency's ability to meet goals and objectives. Recruitment for these "mission critical" positions may proceed after hiring supervisors complete and submit appropriate justification documents and upon approval of the agency director. In some instances, these additional steps have extended the recruitment turnaround time and contributed to the yellow or red status of some business units as noted on the following pages. We continue to work within the State of Arizona Hiring Freeze guidelines implemented February 2015.

- Five positions are under recruitment – FSD Controller, FSD-BA Pension Calculations Specialist II, MSD Employer Relations Officer, MSD Retirement Advisor Supervisor, and TSD Software Engineer
- Four recruitments have not yet commenced – FSD Financial Reporting Analyst, FSD-BA Fiscal Services Specialist III, MSD Retirement Advisor Senior (Tucson) and TSD Information Security Engineer
- Two positions have been filled with future start dates – FSD-CA Fiscal Services Specialist III (start date: 02/29/2016), IMD Portfolio Manager-Public Equity (start date: 02/22/2016)

Impact of Staffing (Vacancies, Recruitments, Internal Transfers) on ASRS Operational Performance

| Agency Divisions | Services and Functions | Staffing Impact | Comments |
|--|--|-----------------|--|
| Impact of Staffing on ASRS Operations: Green = Normal risk Yellow = Greater than normal risk Red = Negative impact | | | |
| MSD | MAC (Call Center) | ● ○ ○ | |
| MSD | One-on-one Counseling (Appointments/Walk-ins) | ● ○ ○ | |
| MSD | E-mail and Written Correspondence | ● ○ ○ | |
| MSD | Outreach Education | ● ○ ○ | |
| MSD | Tucson: Appointments/Walk-ins/Outreach | ● ○ ○ | |
| MSD | Benefit Estimates | ● ○ ○ | |
| MSD | Employer Relations | ● ○ ○ | |
| MSD | Health Insurance/LTD Benefits Administration and Communication | ● ○ ○ | |
| MSD | Survivor Benefit Processing | ● ○ ○ | |
| MSD | Refund Processing | ● ○ ○ | |
| MSD | New Retiree Processing | ● ○ ○ | |
| MSD/FSD | Service Purchase Processing | ○ ● ○ | The Service Purchase process is going through a modernization project which is requiring significant staffing resources. Greater than normal risk will remain until the Service Purchase project is completed. |

Impact of Staffing (Vacancies, Recruitments, Internal Transfers) on ASRS Operational Performance

| Agency Divisions | Services and Functions | Staffing Impact | Comments |
|--|--|--|---|
| Impact of Staffing on ASRS Operations: Green = Normal risk Yellow = Greater than normal risk Red = Negative impact | | | |
| FSD | Monthly Pension Payroll Processing | ● ○ ○ | |
| FSD | New Retiree Processing | ○ ○ ● | During January 2016, the New Retirees strategic objectives were met however the pension audit objectives were not met. Six positions are vacant and six FTEs are in training. Recruitment for one position is under way and a temporary resource has been requested. Negative impact will remain until the vacant positions have been filled and the six recently hired FTEs are fully trained. |
| FSD | Survivor Benefit Processing | ● ○ ○ | |
| FSD | Records Management (data processing/imaging) | ● ○ ○ | The mailroom and printing team are meeting work expectations with Imaging staff assistance. Review and analysis of missing member data including an outreach plan to employers regarding missing member enrollments are on hold until the new Records Management Supervisor has been fully trained. |
| FSD | LTD/Health Benefit Supplement Processing | ○ ● ○ | One Fiscal Services Specialist III is in training. Greater than normal risk of meeting the strategic goals and objectives will remain until training is complete. |
| FSD | Transfer Processing | ● ○ ○ | |
| FSD | General Accounting | ○ ● ○ | General Accounting did not meet strategic objectives. One critical position, Controller, is vacant and two positions were recently filled. Greater than normal risk will remain until the Controller position is filled and all positions have been fully trained. |
| FSD | Contribution Collections and Posting | ○ ● ○ | The Contribution Accounting team has one recently hired FTE who is in training and one FTE is starting 02/29/2016. Greater than normal risk will remain until the new FTEs are fully trained. |

Impact of Staffing (Vacancies, Recruitments, Internal Transfers) on ASRS Operational Performance

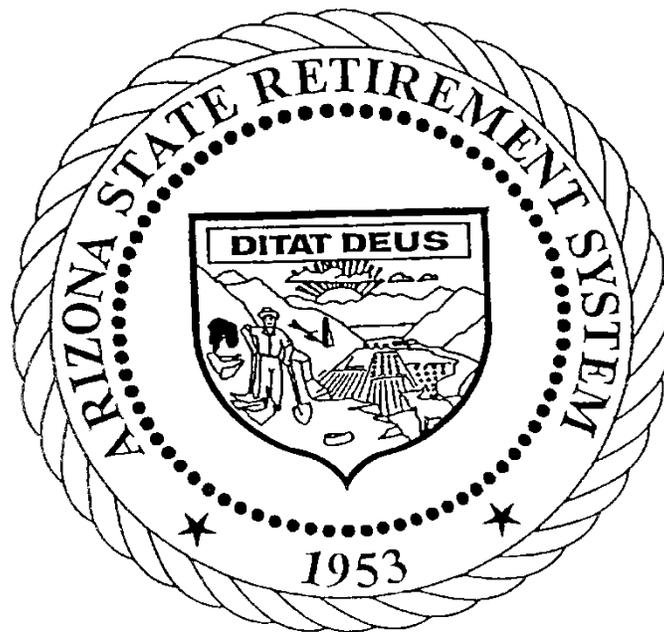
| Agency Divisions | Services and Functions | Staffing Impact | Comments |
|---|---|-----------------|--|
| Impact of Staffing on ASRS Operations: Green = Normal risk Yellow = Greater than normal risk Red = Negative impact | | | |
| TSD | Network Support | ○●○ | The Network Support team continues to struggle to meet the business needs and their strategic objectives due to insufficient staffing. The Information Security Officer recruitment has been completed and will start February 2016. The recruitment for the remaining vacant security positions will resume in February 2016. Greater than normal risk will remain until all positions are filled and staff is fully trained. |
| TSD | Business Applications Development and Support | ●○○ | The planned workload requires a complement of 44 total resources (31 FTEs and 13 external resources). Our current complement of resources for January 2016 was 45 (30 FTEs and 15 external resources). We are currently recruiting for one full time Software Engineer and one external system tester resource. |
| IMD | Investment Management | ●○○ | |
| DIR | Board/Executive Staff Support | ●○○ | |
| DIR | Strategic Planning/Analysis | ●○○ | |
| DIR | Strategic Communications | ●○○ | |
| DIR | Public Affairs | ●○○ | |
| IA | Internal Audit | ●○○ | |
| EA | Rule Writing | ●○○ | |

Impact of Staffing (Vacancies, Recruitments, Internal Transfers) on ASRS Operational Performance

| Agency Divisions | Services and Functions | Staffing Impact | Comments |
|---|---------------------------|--|---|
| Impact of Staffing on ASRS Operations: Green = Normal risk Yellow = Greater than normal risk Red = Negative impact | | | |
| EA | Legislative Relations |  | |
| ASD | Human Resources |  | |
| ASD | Training and Development |  | Training and Development is unable to meet all current business needs and future training requests have been postponed due to limited staffing. Greater than normal risk will remain until vacant positions are filled and fully trained. |
| ASD | Contracts and Procurement |  | In January 2016 strategic objectives were met. One Sr. Procurement Officer is in training. Greater than normal risk will remain until the employee is fully trained. |
| ASD | Facilities Management |  | |
| ASD | Budget Administration |  | |

Agenda Item #10d

Director's Report Cash Flow Statement



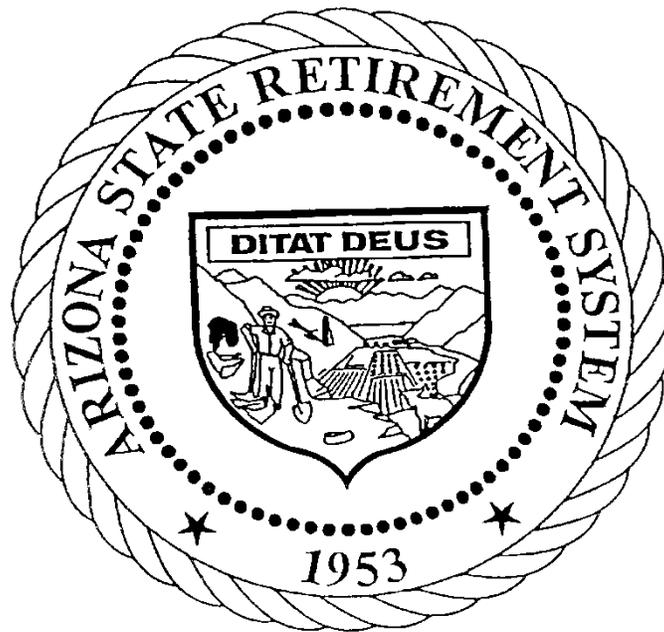
ARIZONA STATE RETIREMENT SYSTEM
COMBINED STATEMENT OF CHANGES IN TOTAL FUND CASH
FOR THE MONTH ENDED JANUARY 31, 2016

| | Retirement Plan Fund | Retirement System Fund | Health Benefit Supplement Fund | Long-Term Disability Fund | Current Period January | Fiscal 2016 YTD January | Fiscal 2015 YTD January |
|--|----------------------------|------------------------------|--------------------------------------|---------------------------------|---------------------------|----------------------------------|----------------------------------|
| ADDITIONS | | | | | | | |
| Contributions | | | | | | | |
| Member contributions | \$ 77,624,876 | \$ 3,090 | \$ - | \$ 820,642 | \$ 78,448,608 | \$ 583,631,404 | \$ 585,680,513 |
| Employer contributions | 71,703,216 | 3,090 | 3,419,741 | 820,892 | 75,946,940 | 579,707,494 | 584,533,226 |
| Alternative contributions (ACR) | 1,749,503 | - | 24,802 | 11,447 | 1,785,752 | 13,997,968 | 14,384,929 |
| Transfers from other plans | 98,259 | - | - | - | 98,259 | 1,166,513 | 295,610 |
| Purchased service | 1,824,423 | - | - | - | 1,824,423 | 16,041,781 | 14,065,246 |
| TOTAL CONTRIBUTIONS | 153,000,276 | 6,181 | 3,444,543 | 1,652,981 | 158,103,981 | 1,194,545,160 | 1,198,959,523 |
| DEDUCTIONS | | | | | | | |
| Investment management fees | 813,490 | - | - | - | 813,490 | 32,613,317 | 37,076,198 |
| Custody fees | - | - | - | - | - | - | 355,000 |
| Consultant and legal fees | 445,909 | - | - | - | 445,909 | 3,016,078 | 2,676,393 |
| Internal investment activity expense | 498,864 | - | - | - | 498,864 | 2,142,852 | 2,279,863 |
| Retirement and disability benefits | 225,104,791 | 3,141,329 | 8,126,163 | 5,156,234 | 241,528,516 | 1,704,755,161 | 1,640,737,608 |
| Survivor benefits | 3,059,735 | 37,644 | - | - | 3,097,379 | 22,162,388 | 21,549,139 |
| Refunds to withdrawing members, including interest | 18,425,199 | - | - | - | 18,425,199 | 155,400,596 | 147,697,400 |
| Administrative expenses | 1,853,300 | - | - | 1,301 | 1,854,601 | 15,554,181 | 17,374,388 |
| Transfers to other plans | 50,758 | - | - | - | 50,758 | 679,563 | 342,210 |
| Other | 34 | - | - | - | 34 | 15,315 | 6,715 |
| TOTAL DEDUCTIONS | 250,252,081 | 3,178,973 | 8,126,163 | 5,157,534 | 266,714,751 | 1,936,339,449 | 1,870,094,915 |
| INCREASE (DECREASE) | (97,251,804) | (3,172,792) | (4,681,619) | (3,504,554) | (108,610,769) | (741,794,289) | (671,135,392) |
| From securities lending activities: | | | | | | | |
| Security loan program | 489,744 | - | - | - | 489,744 | 3,559,126 | 2,310,892 |
| Security loan interest expense / (Rebate) | (148,193) | - | - | - | (148,193) | (1,006,137) | (145,251) |
| * Net income from securities lending activities | 637,936 | - | - | - | 637,936 | 4,565,263 | 2,456,144 |
| Capital Calls / (Distributions) | | | | | | | |
| Farmland and Timber | - | - | - | - | - | 11,665,010 | 45,442,161 |
| Infrastructure | - | - | - | - | - | - | - |
| Opportunistic Debt | 12,850,774 | 131,145 | 584,166 | - | 13,566,085 | 97,177,465 | 144,385,962 |
| Opportunistic Equity | 88,901 | 895 | 3,954 | - | 93,750 | 26,357,948 | 28,555,839 |
| Private Debt | 25,781,972 | 246,045 | 1,175,300 | - | 27,203,317 | 665,295,954 | 243,899,003 |
| Private Equity | (8,416,340) | - | (371,090) | - | (8,787,430) | 41,233,920 | 141,437,541 |
| Real Estate | 19,672,369 | 191,748 | 891,718 | - | 20,755,836 | 342,121,324 | (78,009,586) |
| TOTAL Capital Calls | 49,977,675 | 569,834 | 2,284,049 | - | 52,831,558 | 1,183,851,621 | 525,710,920 |
| NET INCREASE (DECREASE) | \$ (146,591,543) | \$ (3,742,626) | \$ (6,965,668) | \$ (3,504,554) | \$ (160,804,390) | \$ (1,921,080,647) | \$ (1,194,390,169) |

* Securities lending activities reported on a one month lag.

Agenda Item #10e

Director's Report Appeals



OUTSTANDING ASRS APPEALS

| Date Received | Appeals | Issues/Questions Regarding | Status/Comments |
|---------------|--|---|--|
| 04/16/2012 | Arizona State University | Appellant is disputing an ASRS employer termination incentive program invoice in the amount of \$1,149,000. | ASU appealed to the AZ Court of Appeals 02/12/2014. Case No. CA-CV 14-0083. Final Opinion issued on 05/05/2015 reversing the Superior Court's decision affirming the ruling of the ASRS Board. ASU Application for Attorneys' Fees in the amount of \$114,493.00 denied on 7/24/2015. Arizona Supreme Court declined to review the case on 10/27/2015. ASU filed Motion for Judgment requesting interest in Superior Court on 12/7/2015. |
| 07/14/2014 | Richard K. Hillis & Sharon Di Giacinto | Appealing the ASRS determination that a Domestic Relations Order term is unacceptable. | Board upheld Administrative Law Judge Decision on 01/30/2015. Appellant filed Notice of Appeal on 02/02/2015 with the AZ Superior Court, Case No. LC2015-000048. Oral Argument held 07/29/2015. Superior Court Decision in favor of the ASRS issued on 9/25/15. Appellant Di Giacinto appealed to AZ Court of Appeals on 9/30/2015. ASRS Answering Brief due 3/23/2016. |
| 12/17/2014 | The Griffin Foundation | Appellant is appealing the ASRS determination that the Appellant owes contributions from October 2010 to present for its employees. | OAH hearing held on 05/14/2015 and 07/09/2015. ASRS Board accepted the Administrative Law Judge Decision on 12/4/2015. Appellant Griffin Foundation filed an appeal to Maricopa County Superior Court on 1/11/2016. |
| 08/24/2015 | Amy Smith | Appealing an overpayment in the amount of \$2,136.56. | ALJ Decision affirming ASRS decision issued on 12/7/2015. ASRS Board accepted ALJ Decision on 1/29/2016. |
| 09/02/2015 | Donald Smith | Appealing ASRS calculation method of his Domestic Relations Order. | ALJ Decision affirming ASRS decision issued on 11/10/2015. ASRS Board accepted ALJ Decision on 1/29/2016. |
| 10/05/2015 | Cynthia Odom | Appealing ASRS determination on return to work requirements. | On 1/15/2016, Appellant withdrew her appeal and request for a hearing. The ASRS filed a Notice of Withdrawal with OAH, and OAH vacated the hearing. |

Information as of February 9, 2016. Updates are noted in bold font.

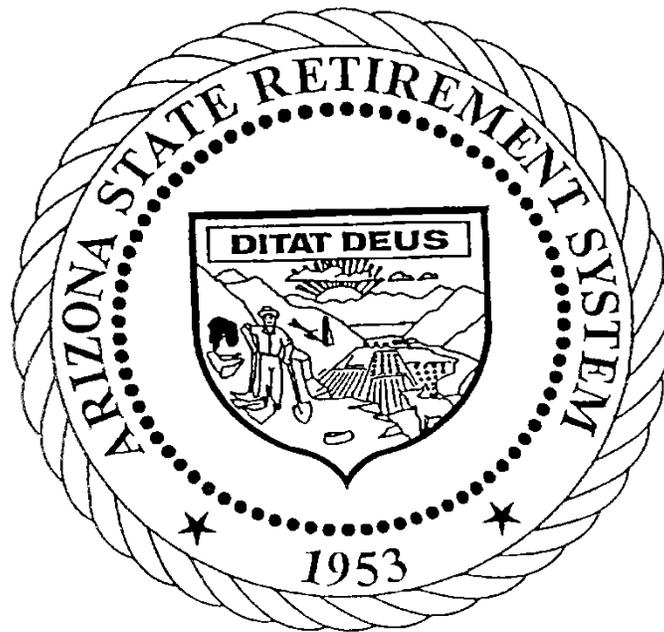
OUTSTANDING ASRS APPEALS

| | | | |
|------------|-----------------|--|--|
| 10/21/2015 | Cathy Davis | Appealing ASRS decision regarding her retirement date. | OAH hearing held on 12/23/2015. ALJ Decision affirming ASRS decision issued on 1/21/2016. Decision on 2/26/2016 Board agenda. |
| 12/28/2015 | Valerie Fields | Appealing ASRS decision regarding service purchase credit. | OAH hearing scheduled for 2/22/2016. |
| 1/20/2016 | Travis Benton | Requesting an IRS 1099-R Form prior to February 1, 2016. | OAH hearing scheduled for 3/14/2016. |
| 1/28/2016 | Mary Jo Kuzmick | Appealing ASRS decision regarding retirement date. | OAH hearing scheduled for 3/15/2016. |

Information as of February 9, 2016. Updates are noted in bold font.

Agenda Item #10f

Director's Report Employers Reporting





ARIZONA STATE RETIREMENT SYSTEM

3300 NORTH CENTRAL AVENUE • PO BOX 33910 • PHOENIX, AZ 85067-3910 • PHONE (602) 240-2000
4400 EAST BROADWAY BOULEVARD • SUITE 200 • TUCSON, AZ 85711-3554 • PHONE (520) 239-3100
TOLL FREE OUTSIDE METRO PHOENIX AND TUCSON 1 (800) 621-3778
WEB ADDRESS: WWW.AZASRS.GOV

Paul Matson
Director

MEMORANDUM

TO: Mr. Kevin McCarthy, Chair, Arizona State Retirement System (ASRS) Board
FROM: Mr. Paul Matson, Director
DATE: February 11, 2016
RE: Delinquent Employers

As of February 11, 2016, the following employers have failed to remit contributions by a date certain. These employers have received a letter advising them that the ASRS will initiate collection procedures unless they contact us within five days:

| | |
|--|-------------------|
| ELFRIDA FIRE DISTRICT | 1,200.00* |
| STARSHINE ACADEMY | 18,000.00* |
| CAURUS ACADEMY | 7,200.00* |
| DESTINY SCHOOL (CHARTER) | 12,000.00* |
| INTELLI-SCHOOL CHARTER | 7,500.00* |
| NORTHERN AZ ACADEMY FOR CAREER DEVELOPMENT | 23,000.00* |
| SEQUOIA PATHWAY ACADEMY | 74,000.00* |
| AMERICAN HERITAGE ACAD (CHART SCH) | 41,000.00* |
| PARK VIEW MIDDLE SCHOOL | 10,000.00* |
| SEQUOIA CHOICE SCHOOL, LLLP | 72,000.00* |
| SEQUOIA VILLAGE SCHOOL | 25,000.00* |
| SEQUOIA CHARTER SCHOOL | 174,000.00* |
| PATHFINDER ACADEMY | 62,000.00* |
| SEQUOIA RANCH SCHOOL | 70,000.00* |
| SEQUOIA SCH FOR DEAF AND HARD OF HEARING | 16,000.00* |
| REDWOOD ELEM ACADEMY | 18,000.00* |
| AZ CONSERVATORY FOR ARTS & ACADEMICS | <u>45,000.00*</u> |
| | \$675,900.00* |

Additionally, the following employer has filed for Chapter 11 Bankruptcy Protection and are delinquent in their ASRS contributions:

| | |
|-----------------------|------------------------|
| LUZ ACADEMY OF TUCSON | <u>\$ 18,600.00</u> |
| Total | <u>\$ 694,500.00 *</u> |

Agenda Items

#11–14

**Note: There are no
materials for these
agenda items**

Agenda Item #15

Note: Materials are currently not available for this item and will be provided when they become available.