



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

AGENDA

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

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

October 24, 2014
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, October 24, 2014, 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.

This meeting will be teleconferenced to the ASRS Tucson office at 7660 East Broadway Boulevard, Suite 108, Tucson, Arizona 85710.

The Agenda for the meeting is as follows:

1. Call to Order; Roll Call; Opening RemarksMr. Kevin McCarthy
Board Chair
2. Approval of the Minutes of the September 26, 2014 Public Meeting and the Amended Minutes of the June 27, 2014 Public Meeting of the ASRS Board (*estimated time 1 minute to 8:36 a.m.*)
.....Mr. Kevin McCarthy

Regarding the following agenda item, notice is hereby given to Trustees of the ASRS Board and the general public that the ASRS Board may vote to go into executive session pursuant to A.R.S. § 38-797.03(B) and Mr. Lenny Tasa-Bennett's request; and according to A.R.S. § 38-431.03(A)(3) for discussion or consultation for legal advice with the attorney(s) of the public body, which will not be open to the public.

3. Approval, Modification, or Rejection of Recommended Administrative Law Judge's Decision Regarding Mr. Lenny Tasa-Bennett's Appeal for Long Term Disability (LTD) Benefits (estimated time 20 minutes to 8:56 a.m.)Ms. Jothi Beljan
Assistant Attorney General
.....Mr. Chris Munns
Attorney General, Solicitor General Section

Regarding the following agenda item, pursuant to A.R.S. § 38-431.03(A)(2), notice is hereby given to Trustees of the ASRS Board and the general public that the ASRS Board may vote to go into executive session, which will not be open to the public, for the purpose of discussion or consideration of records exempt by law from public inspection.

4. Presentation, Discussion, and Appropriate Action Regarding the Office of the Auditor General's ASRS Sunset Review (*estimated time 20 minutes to 9:16 a.m.*) Mr. Paul Matson
..... Mr. Tom Manos
ASRS Trustee

5. Presentation, Discussion and Appropriate Action with Respect to the Possible Implementation and Timing of the 2014 Actuarial Audit Recommendations (*estimated time 20 minutes to 9:36 a.m.*) Mr. Paul Matson
..... Mr. Charlie Chittenden
Actuary, Buck Consultants

6. Presentation, Discussion and Appropriate Action Regarding an Amendment to the Supplemental Retirement Savings Plan (*estimated time 15 minutes to 9:51 a.m.*) Mr. Nicholas Ponder
Government Relations Officer

7. Presentation, Discussion and Appropriate Action Regarding ASRS Proposed Legislation for the 2015 Legislative Session (*estimated time 20 minutes to 10:11 a.m.*) Mr. Nicholas Ponder

8. Presentation, Discussion and Appropriate Action Regarding the 2015 Board Meeting Calendar (*estimated time 5 minutes to 10.16 a.m.*) Mr. Paul Matson

9. Presentation, Discussion, and Appropriate Action Regarding the Director's Report as well as Current Events (*estimated time 5 minutes to 10:21 a.m.*) Mr. Paul Matson
 - A. 2014 Compliance Report
 - B. 2014 Investments Report
 - C. 2014 Operations Report
 - D. 2014 Budget and Staffing Reports
 - E. 2014 Cash Flow Statement
 - F. 2014 Appeals Report
 - G. 2014 Employers Reporting

10. Presentation and Discussion with Respect to Informational Updates from Prior and Upcoming Committee Meetings (*estimated time 15 minutes to 10:36 a.m.*)
 - a. Operations and Audit Committee (OAC) Mr. Jeff Tyne, Chair
The next OAC Meeting will be held on December 9, 2014
 - b. External Affairs Committee (EAC) Mr. Brian McNeal, Chair
..... Mr. Patrick Klein
The next EAC Meeting will be held on November 14, 2014
 - c. Investment Committee (IC) Mr. Tom Connelly, Chair
..... Mr. Gary Dokes
The next IC Meeting will be held on December 1, 2014

11. Board Requests for Agenda Items *(estimated time 1 minute to 10:37 a.m.)*
.....Mr. Kevin McCarthy

12. Call to the PublicMr. 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(G) 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.

13. The next public ASRS Board meeting is scheduled for Friday, December 5, 2014, at 8:30 a.m., at 3300 N. Central Avenue, in the 10th Floor Board room, Phoenix, Arizona.

The balance of the meeting and possible executive session will take place in the 14th floor conference room.

Regarding the following agenda item, pursuant to A.R.S. § 38-431.03(A)(3), notice is hereby given to Trustees of the ASRS Board and the general public that the ASRS Board may vote to go into executive session, which will not be open to the public, for the purpose of discussion or consultation for legal advice with the attorney of the public body, which will not be open to the public.

14. Presentation and Discussion Regarding Trustee Fiduciary Education *(estimated time 30 minutes to 11:17 a.m.)*Ms. Jothi Beljan

15. 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 7660 East Broadway Boulevard, Suite 108, 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 October 17, 2014

ARIZONA STATE RETIREMENT SYSTEM

Gayle Williams Date
Board Administrator

Paul Matson Date
Director

Agenda Item #2



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MINUTES

PUBLIC MEETING ARIZONA STATE RETIREMENT SYSTEM BOARD

Friday, September 26, 2014
8:30 a.m., Arizona Time

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 8:31 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. Mike Smarik, Vice-chair
Mr. Brian McNeil
Mr. Jeff Tyne
Mr. Marc Boatwright (via phone)
Mr. Tom Connelly
Mr. Tom Manos

Absent: Professor Dennis Hoffman
Dr. Richard Jacob

A quorum was present for the purpose of conducting business.

2. Approval of the Minutes of the August 22, 2014 Public Meeting of the ASRS Board

Motion: Mr. Tom Manos moved to approve the Minutes of the August 22, 2014 Public Meeting of the ASRS Board. Mr. Jeff Tyne seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

3. Presentation, Discussion and Appropriate Action Regarding Outcomes of the ASRS Strategic Plan for Fiscal Year 2014

Mr. Anthony Guarino, Deputy Director and Chief Operations Officer provided an overview of the Five-year Strategic Plan, approved by the Board in March, 2014. Mr. Guarino led a review of the following five plan priorities and their outcomes for the first reporting period: Ensure Plan Sustainability; Optimize Risk Management; Optimize Investment Organization and Strategies;

Ensure Outstanding Customer Service; and ensure High Productivity.

Mr. Guarino explained that the report in the meeting packet outlines objectives and performance measures of each Strategic Priority and its Outlook. The report also contains the data analysis and documented actions used by staff to assess the progress of each priority.

Mr. Paul Matson, Director, Mr. Guarino, Mr. Dave King, Assistant Director Member Services, and Ms. Sara Orozco, Manager Strategic Planning and Analysis, discussed each Strategic Priority and its Outlook.

4. Presentation, Discussion, and Appropriate Action Regarding Investment Compensation Plan

Mr. McCarthy tabled this agenda item and stated the discussion will be expanded to compensation for the Agency in general, including the impacts of Personnel Reform. These discussions will take place through an Ad Hoc Board Committee chaired by Mr. Tom Manos. Other Trustees on the Committee will be Mr. Tom Connelly, Professor Dennis Hoffman, Mr. Brian McNeil, and Mr. McCarthy.

The Committee will bring their discussion and their recommendations to the full Board.

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

Mr. Matson asked Mr. Kent Smith to provide an update of the call center phone problems of late. Mr. Smith reported the ASRS worked with AZNET and the cause of the problem has been identified as a bad hardware drive. AZNET will work with the ASRS to replace that drive.

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

a. Operations and Audit Committee (OAC)

Mr. Jeff Tyne, said the next OAC meeting will be held on October 7, 2014 at 10:30 a.m. in the 14th floor conference room.

b. External Affairs Committee (EAC)

Mr. Brian McNeil said the next EAC meeting will be held on October 6, 2014 at 10:30 a.m. in the 14th floor conference room.

c. Investment Committee (IC)

Mr. Tom Connelly, Chair, said the next IC meeting, held on October 20, 2014 at 2:30 p.m. in the 14th floor conference room.

7. Board Requests for Agenda Items

No requests were made.

8. Call to the Public

No members of the public requested to speak.

9. The next ASRS Board meeting is scheduled for Friday, October 24, 2014, at 8:30 a.m., at 3300 N. Central Avenue, 10th Floor Board room, Phoenix, Arizona.

10. Adjournment of the ASRS Board

Mr. Kevin McCarthy adjourned the September 26, 2014, Board meeting at 10:32 a.m.

ARIZONA STATE RETIREMENT SYSTEM

Gayle Williams
Board Administrator

Date

Paul Matson
Director

Date

DRAFT



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*Paul Matson
Director*

AMENDED MINUTES PUBLIC MEETING ARIZONA STATE RETIREMENT SYSTEM BOARD

**Friday, June 27, 2014
8:30 a.m., Arizona Time**

The Arizona State Retirement System (ASRS) Board met in the 10th Floor Board Room, 3300 N. Central Avenue, Phoenix, Arizona. Mr. Tom Manos, Chair of the ASRS Board, called the meeting to order at 8:33 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. Tom Manos, Chair
Mr. Mike Smarik, Vice-chair
Mr. Brian McNeil
Professor Dennis Hoffman
Mr. Jeff Tyne
Dr. Richard Jacob
Mr. Tom Connelly

Absent: Mr. Kevin McCarthy
Mr. Marc Boatwright

A quorum was present for the purpose of conducting business.

2. Approval of the Minutes of the May 23, 2014 Public Meeting and Executive Session of the ASRS Board

Motion: Professor Dennis Hoffman moved to approve the Minutes of the May 23, 2014 Public Meeting and Executive Session of the ASRS Board. Mr. Tom Connelly seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

3. Approval, Modification, or Rejection of Administrative Law Judge's Recommended Decision Regarding Ms. Alice Schireman's Appeal of Survivor Benefits

Ms. Diana Day, Assistant Attorney General, Solicitor General Section, was present for agenda items #3, #4 and #5, to provide legal advice to the Board, if requested.

Mr. Charles Grube, Assistant Attorney General, Senior Agency Counsel, provided an explanation of Ms. Alice Schireman's appeal, stating Ms. Schireman appealed the denial of survivor benefits on the account of her husband, Mr. Alvin Schireman, after ASRS staff determined there were no remaining

benefits payable. The appeal was heard by the Office of Administrative Hearings, which upheld the Director's determination that there were no survivor benefits payable on Mr. Alvin Schireman's ASRS account. Mr. Grube explained to the Board their options of: 1) accepting the ruling of the Administrative Law Judge, 2) rejecting the ruling of the Administrative Law Judge, or 3) modifying the ruling of the Administrative Law Judge.

Ms. Schireman addressed the Board telephonically regarding her appeal. Mr. Manos asked the Board for further questions regarding the appeal; but there were none.

Motion: Mr. Tom Connelly moved to accept the ruling of the Administrative Law Judge to uphold the ASRS Director's determination that there were no survivor benefits payable on Mr. Alvin Schireman's ASRS account. Professor Dennis Hoffman seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

4. Approval, Modification, or Rejection of Administrative Law Judge's Recommended Decision Regarding Mr. Arthur Gross' Appeal of His Calculated Retirement Benefit

Mr. Grube, summarized the appeal of Mr. Gross, stating the appeal was regarding Mr. Gross' retirement benefit calculation. Mr. Gross believed the ASRS should utilize only his most recent eleven months of earned salary in his benefit calculation and not salary data associated with his purchase of previous service.

A secondary issue arose during the course of the appeal when the ASRS discovered it had mistakenly calculated Mr. Gross' retirement benefit utilizing a thirty-six month calculation based on Mr. Gross' most recent membership date instead of the appropriate sixty month calculation. The ASRS discovered a solution to this secondary issue which would allow Mr. Gross a thirty-six month calculation, rendering a higher retirement benefit. Mr. Grube then explained the Board's options.

Mr. Gross addressed the Board stating he originally had a question regarding the method used to calculate his average monthly salary and then praised staff for responding to his questions and explaining and clarifying the process to him. Mr. Gross asked the Board to accept the staff-offered solution, which is a modification to the Administrative Law Judge's decision.

Ms. Jenna Orozco responded to Trustee questions and explained the staff-offered solution. Ms. Orozco explained the ASRS could offer Mr. Gross an increased benefit by reallocating his service purchase of Other Public Service to the purchase of his Forfeited Service instead. This method would increase his overall service and also allow the ASRS to calculate his benefit based on a thirty-six month calculation.

~~**Motion:** Dr. Richard Jacob moved to accept modification of the Administrative Law Judge ruling based on Mr. Gross' current service credit with the ASRS. Mr. Gross' current earned service credit is April 12, 2013 through February 18, 2014, with the Arizona Department of Corrections as noted in ASRS Exhibit U which makes Mr. Gross eligible for an average monthly compensation calculation pursuant to A.R.S. § 38-711(5)(c), the definition applicable to post July 1, 2011 ASRS members. Mr. Gross is not eligible for an average monthly compensation pursuant to A.R.S. § 38-711(5)(a) because he currently has reinstated ASRS service credit from February 1986 through July 1990, as noted in the hearing transcript, page 27, lines 22-25 and page 28, lines 1-17, not pre-January 1984 forfeited service as required by A.R.S. § 38-711(5)(a). Mr. Mike Smarik seconded the motion.~~

Motion: Dr. Richard Jacob moved that the Board accept the ruling of the Administrative Law Judge with the alteration as suggested by staff. Mr. Mike Smarik seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

5. Approval, Modification, or Rejection of Administrative Law Judge's Recommended Decision Regarding Mr. Adam Morris' Appeal of Requested Contributions Not Withheld

Mr. Grube explained Mr. Morris' appeal. Mr. Morris contacted the ASRS about receiving ASRS service credit and associated benefits for his employment period with Glendale Elementary School District. The ASRS issued Contributions Not Withheld (CNW) invoices for some of the time and Mr. Morris appealed, requesting to purchase the remainder of the time. Because neither Mr. Morris nor the District were able to supply records to substantiate Mr. Morris' hours, the ASRS declined the additional service purchase. The appeal was heard by the Office of Administrative Hearings, which upheld the Director's determination there was insufficient documentation to issue additional CNW invoices. The Judge noted in Conclusion of Law No. 6 the ASRS method in determining CNWs was favorable to the Appellant. Mr. Grube then explained the Board's options.

Neither Mr. Morris nor a representative were present at the Board meeting. There were no questions from the Trustees.

Motion: Professor Dennis Hoffman moved to accept the ruling of the Administrative Law Judge to uphold the ASRS Director's determination there was insufficient documentation to issue additional CNW invoices. Mr. Brian McNeil seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

6. Presentation, Discussion and Appropriate Action Regarding the Actuarial Audits of the
a. Pension Plan and Health Benefit Supplement Program
b. Long Term Disability (LTD) Plan
c. System

Mr. Paul Matson, Director, introduced the item by explaining the ASRS conducts an actuarial audit every five years. The most recent audit of the June 30, 2013 actuarial valuations was completed by Gabriel Roeder Smith & Company (GRS). Mr. Ryan Falls, Senior Consultant & Actuary, GRS, explained their audit process and presented their findings. Additionally, Mr. Charlie Chittenden, Buck Consultants, the contracted ASRS Actuary, provided Buck's response to the audit.

The Audit Summary of Findings was: "Based on our review of the census data, experience study documents, liability replication, liability calculations for a sample of members, and the actuarial valuation reports, we believe the June 30, 2013 actuarial valuations of the ASRS retirement programs are reasonable, are based on appropriate assumptions and methods, and the reports generally comply with the Actuarial Standards of Practice."

Mr. Falls offered his recommendations, stating the ASRS has very sound actuarial valuations and appropriate assumptions. Mr. Falls, Mr. Chittenden and Mr. Matson answered questions from the Trustees regarding the recommendations.

Mr. Matson outlined further Board meeting discussions, stating that at a meeting before this November, when the June 30, 2014 actuarial valuation is presented, the Board will discuss the audit recommendations and the implementation time frame. Mr. Matson indicated that several pro forma analyses would likely be presented including PUC vs. EAN.

7. Presentation, Discussion, and Appropriate Action Regarding ASRS Investment Program Updates

Mr. Gary Dokes, Chief Investment Officer, addressed the Board regarding ASRS investment program updates for the period ending May 31, 2014, highlighting specific areas of interest and concern. Mr. Dokes presented information on the following items: ASRS Fund Positioning, IMD Investment House Views – June 2014, Asset Class Committee Activities, Tactical Portfolio Positioning, Strategic Asset Allocation (SAA) Policy Implementation, IMD Projects, and Research and Initiatives.

8. Presentation, Discussion, and Appropriate Action Regarding Independent Reporting, Monitoring, and Oversight of the ASRS Investment Program Q1/2014

Mr. Allan Martin, Consultant, NEPC, addressed the Board regarding NEPC’s independent reporting, monitoring, and oversight of the ASRS Investment Program including Total Fund performance through March 31, 2014.

The Total Fund Performance for the period ending March 31, 2014 is:

	Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception (6/30/75)
Total Fund	2.3%	13.8%	9.6%	15.9%	7.0%	10.0%
Interim SAA Policy*	2.4%	13.9%	9.5%	15.7%	6.9%	9.8%
Excess Return	-0.1%	-0.1%	0.1%	0.2%	0.1%	0.2%

*Interim SAA Policy: 25% S&P 500/5% S&P 400/5% S&P 600/14% MSCI EAFE/3% MSCI EAFE Small Cap/6% MSCI, Emerging Markets/6% Russell 2000 (lagged one quarter)/15% Barclays Capital Aggregate/5% Barclays Capital High, Yield/4% JP Morgan GBI-EM Global Diversified/2% S&P/LSTA Levered Loan Index + 250 basis points (lagged one quarter)/6% NCREIF ODCE (lagged one quarter)/4% Dow Jones/UBS Commodities Index,

Note: Interim SAA Policy includes a proration of 1% Private Equity, 1% Private Debt, and 2% Real Estate, which are unfunded. Private Equity was prorated to domestic equity; Real Estate was prorated to domestic equity and fixed income; Private Debt was prorated to fixed income.

9. Presentation, Discussion, and Appropriate Action Regarding Board Elections

Mr. Tom Manos introduced the item, reminding Trustees the Board Governance Policy Handbook requires an annual election of the Board Chair and Vice-chair. Mr. Manos stated he came to the decision not to remain Chair, believing it is good governance for the Chair and Vice-chair to rotate occasionally. Mr. Manos said that in the three years he has been Chair, he has been more than satisfied with some of the changes the Board has made.

Motion: Mr. Tom Manos moved to nominate Mr. Kevin McCarthy as ASRS Board Chair with his term to begin July 1, 2014. Mr. Mike Smarik seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

Motion: Mr. Tom Connelly moved to nominate Mr. Mike Smarik to continue serving as ASRS Board Vice-chair. Professor Dennis Hoffman seconded the motion.

By a vote of 7 in favor, 0 opposed, 0 abstentions, and 2 excused, the motion was approved.

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

Mr. Matson commented the ASRS is restructuring the Securities Lending Program and stated that after taking ourselves out of the market because of the previous potential risks, staff created a program structure with a lower risk profile.

Mr. Matson also commented on the ASRS cash flow and how staff monitors both the internal and external cash flows, each of which is approximately -3% of total fund value. He also stated he is pleased, based upon the CIO's report, to see that staff is aware of the need for very efficient cash management.

The last item Mr. Matson discussed was the Sunset Audit currently being conducted by the Arizona Office of the Auditor General. The audit field work is expected to be completed by December, 2014, with the final report expected approximately May of 2015. The key audited areas include the financial condition of the ASRS, the sustainability of the ASRS, the Investment Management Program, as well as stakeholder inquiries which include salary spiking and the Investment Management Incentive Compensation Program.

Mr. Brian McNeil referenced the Employers Reporting memo in the Director's report and asked about the bankruptcy collection process for ASRS Employers. Mr. Matson said the State Treasurers Office is used for the collection process but often with small employers there is insufficient money for collection. Mr. Matson will follow up with Mr. McNeil on the ASRS priority standing as a payee in the collection process for employers.

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

a. Operations and Audit Committee (OAC)

Mr. Jeff Tyne, Chair, said the next OAC meeting will be held on August 12, 2014. Agenda items will include risk management discussions of the IT security audit, the FY16 budget and a review of audits from the Internal Audit Division.

b. External Affairs Committee (EAC)

Mr. Tom Manos said the next EAC meeting will be held on September 12, 2014.

c. Investment Committee (IC)

Mr. Tom Connelly, Chair, said the next IC meeting, held on August 18, 2014, will begin at 1 p.m. to provide ample time for a roundtable of outside speakers discussing possible alternative sources of investment returns.

12. Board Requests for Agenda Items

No requests were made.

13. Call to the Public

No members of the public requested to speak.

Agenda Item #3



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Paul Matson
Director

MEMORANDUM

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

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

DATE: October 10, 2014

RE: **Agenda Item #3:** Approval, Modification, or Rejection of Recommended Administrative Law Judge's Decision Regarding Mr. Lenny Tasa-Bennett's Appeal for Long Term Disability (LTD) Benefits

Purpose

To approve, modify or reject the Administrative Law Judge's ruling to uphold the Director's determination that Lenny Tasa-Bennett is denied ASRS LTD benefits effective January 1, 2012.

Facts of the Case

- An ASRS member is disabled and eligible for LTD benefits during the first thirty months of a period of disability if the "member is unable to perform all the duties of the position held by the member when the member became totally disabled." A.R.S. § 38-797.07(11)(a).
- Mr. Tasa-Bennett became disabled on December 10, 2007, and began receiving ASRS LTD benefits effective June 10, 2008. Monthly LTD benefits are not payable until a member has been totally disabled for a period of six consecutive months pursuant to A.R.S. § 38-797.07(A)(3).
- After a member has received monthly LTD benefits for twenty-four months, the member is considered disabled and eligible to continue receiving LTD benefits if the member is unable to perform work for which the member is qualified by education and experience and that is at least equal to the member's monthly LTD benefit amount as supported by objective medical evidence. A.R.S. §38-797.07(11)(b).
- The ASRS LTD vendor Sedgwick determined in February 2012, that Mr. Tasa-Bennett was no longer disabled after twenty-four months of receiving benefits because his medical documentation did not support that he was unable to perform any occupation and that he was deemed to be able to earn an amount equal to his LTD benefit based on his work capacity, educational background and job skills. Sedgwick notified Mr. Tasa-Bennett in February 2012 that he was no longer eligible for ASRS LTD benefits effective January 1, 2012.
- In March 2012, Mr. Tasa-Bennett appealed the determination to Sedgwick.
- In April 2012, Sedgwick scheduled two Independent medical records reviews with Board certified specialists in Neurology and in Orthopedic Surgery. Each assessment indicated that Mr. Tasa-Bennett's condition would not prevent him from performing any occupation for which he was qualified by education, training, or experience.

- In April 2012, Sedgwick upheld its February 2012 denial of continuation of LTD benefits to Mr. Tasa-Bennett.
- In July 2012, Mr. Tasa-Bennett appealed the Sedgwick denial to the ASRS Director. In March 2014, the ASRS facilitated three independent medical records reviews with Board certified specialists in psychiatry, neurology, and orthopedic surgery.
- In June 2014, the ASRS issued a Director Decision upholding the Sedgwick determination that Mr. Tasa-Bennett was no longer statutorily disabled effective January 1, 2012. Mr. Tasa-Bennett appealed to the ASRS Board of Trustees and requested an administrative hearing which was held on August 18, 2014.
- In her Recommended Decision dated September 29, 2014, Administrative Law Judge Tammy Eigenheer upheld the ASRS Director's determination and denied Mr. Tasa Bennett's appeal. The Recommended Decision, Conclusion of Law No. 9 states, "The evidence and testimony presented at hearing established overwhelmingly that Appellant does not meet the statutory definition of being totally disabled for the purpose of receiving continued LTD benefits under A.R.S. § 38-797.07(A)(11)(b). Therefore, A.R.S. § 38-797.07(A)(7)(a) requires that his benefits be discontinued. Appellant's LTD benefits were properly discontinued as of January 1, 2012."

Board Options

Option 1*: The Board may accept the ruling of the Administrative Law Judge.

Option 2: The Board may reject the ruling of the Administrative Law Judge.

Option 3: The Board may modify the ruling of the Administrative Law Judge.

*Staff Perspective

Agenda Item #4



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: October 14, 2014

RE: **Agenda Item #4:** Presentation, Discussion, and Appropriate Action Regarding the Office of the Auditor General's ASRS Sunset Review

Purpose

The Office of the Auditor General will provide an update regarding the ongoing sunset review.

Recommendation

Information item only; no action required.

Background

Arizona Revised Statute §41-2951 has established a sunset review process to ensure state agencies, boards and commissions are meeting statutory responsibilities, operating efficiently and effectively, and should continue operations. Most sunset reviews are conducted once every 10 years. The last sunset review report for the Arizona State Retirement System (ASRS) was issued in September 2005.

In October 2013, the Joint Legislative Audit Committee assigned the sunset review of the ASRS to the Office of the Auditor General (OAG). The review is currently underway and will result in a publically released report which is due to the Legislature by October 1, 2015.

If no legislative action is taken, the ASRS will sunset on July 1, 2016.

As a part of the audit, the OAG auditors review state statutes, administrative rules, policies, procedures, and analyze ASRS records and data. Additionally, the OAG conducts interviews and obtains criteria from other states, best practices, and literature. The OAG will make recommendations for improvements and identify best practices, as appropriate.

The OAG offered to provide the Board an update regarding the sunset review. The OAG conducts Board updates in Executive Session.

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: October 20, 2014

RE: **Agenda Item #5:** Presentation, Discussion and Appropriate Action with Respect to the Possible Implementation and Timing of the 2014 Actuarial Audit Recommendations

Purpose

To present the estimated contribution rate impacts, funded status impacts, reporting implications, and policy development process of the recommended changes outlined in the 2014 Actuarial Audit Report conducted by Gabriel Roeder Smith & Company (GRS). Implementation and timing recommendations from the Buck, ASRS' retained actuary, and ASRS' Director will also be provided for discussion.

Background

In March 2014, the ASRS engaged GRS to conduct an actuarial audit of the retained actuary, Buck Consultants. The scope of the audit included a review of the content of the Experience Studies, Valuation Reports and the actuarial assumptions used to develop the reports. The results of the audit were presented to the Board at its June 27, 2014, meeting and included the following key recommendations with respect to the experience studies, valuation reports and actuarial assumptions. The actual GRS presentation is attached.

Content of the Experience Study

1. Show number of Expected and Actuals
2. Impact of Retirement Incentives
3. Economic Cycle

Content of the Valuation Report

1. Future Actuarial Measurement Disclosures
2. References to Disabled Members
3. Post-Retirement Assumption for Active Members
4. Clarify Benefit Category for System Retirees
5. Development of System Actuarial Value of Assets in Plan Report
6. Interest Rate Credited to Beneficiaries' Balances

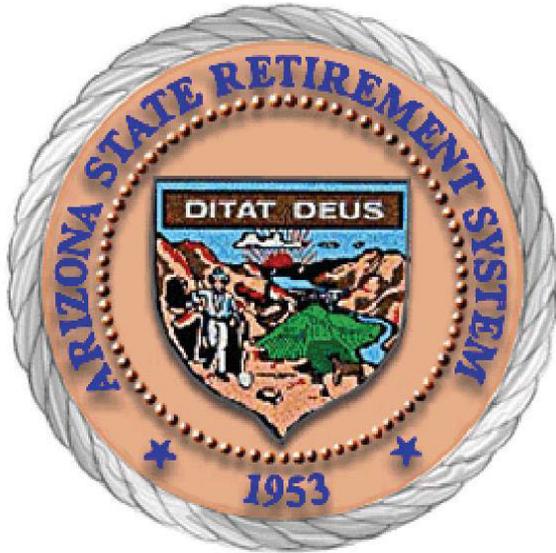
Actuarial Assumptions

1. Using Historical Pay Information, Rather than Projecting via Salary Scale
2. Including New Entrant Assumed Normal Cost into Contribution Rate Calculation
3. Incorporating Contribution Rate Lag into Contribution Rate Calculation
4. Using High-, Medium-, or Low-Income Post-Retirement Mortality for Current Active and Deferred Vested Members
5. Using High-Income Post-Retirement Mortality for Current Active and Deferred Vested Members

Recommendation

Adopt the changes to the content of the valuation reports and the actuarial assumptions as presented (or with any possible amendments).

Attachments: Buck Consultants Summary of Audit Recommendations
GRS Board Presentation 6/37/2014



Arizona State Retirement System

Summary of Audit Recommendations

October 24, 2014



Audit Recommendations – Non-Financial

Item #	Source	Description	Year of Implementation	Comments
1	Experience Study	Show <i>number</i> of Expected and Actual separations	6/30/2017 experience study	6/30/2012 study just showed ratios
2	Experience Study	Consider impact of retirement incentives	n/a	Already reflected in 6/30/2012 study
3	Experience Study	Consider economic cycle	n/a	Already reflected in 6/30/2012 study
4	General	Adopt formal funding policy	???	Being studied by ASRS
5	Actuarial Valuation Report	Include “future actuarial measurements” language	6/30/2014 valuation	Omitted from Plan valuation report



Audit Recommendations – Non-Financial

Item #	Source	Description	Year of Implementation	Comments
6	Actuarial Valuation Report	Consistent reference to disabled groups	6/30/2014 valuation	Language clarification
7	Actuarial Valuation Report	Clarify post-retirement assumption for actives	6/30/2014 valuation	Currently no adjustment for amount
8	Actuarial Valuation Report	Clarify “benefit category” for System retirees	6/30/2014 valuation	Count income from Plan and System
9	Actuarial Valuation Report	Show development of System’s Actuarial Value of Assets in Plan report	6/30/2014 valuation	10-year smoothing in Plan valuation
10	Actuarial Valuation Report	Clarify interest rate credited to beneficiaries’ balances	6/30/2014 valuation	8% interest credit for death benefits



Audit Recommendations – Financial

Item #	Description	6/30/2014 Contribution Rate	6/30/2014 Funded Status*	Reflect in 6/30/2014 Valuation?	Comments
1	Preliminary 6/30/2014 Valuation Results	22.70%	76.87%	n/a	6/30/2013 contribution rate was 22.96%
2	Correct calculations for System retirees	22.70%	76.87%	yes	
3	Use historical pays	22.81%	76.75%	yes	
4	Include new entrants in Normal Cost	23.07%	76.87%	yes	
5	Amortize contribution lag over 5 years	23.23%	76.87%	yes	Effect depends on other changes implemented
Total with 2-5		23.23%	76.75%		

* Ratio of Actuarial Value of Assets to Actuarial Accrued Liability



Audit Recommendations – Financial (cont'd)

Item #	Description	6/30/2014 Contribution Rate	6/30/2014 Funded Status*	Projected 6/30/2015 Contribution Rate	Projected 6/30/2015 Funded Status*
1	Preliminary 6/30/2014 Valuation Results	22.70%	76.87%	22.45%	78.24%
6A	“Large/medium/small benefit” mortality rates for actives/inactives	23.12%	76.41%	22.87%	77.77%
6B	“Large benefit” mortality rates for all actives/inactives	23.27%	76.27%	23.02%	77.63%
Total with 6A		23.75%	76.29%	n/a	n/a
Total with 6B		23.94%	76.15%	n/a	n/a

* Ratio of Actuarial Value of Assets to Actuarial Accrued Liability



DISCLOSURES

- This analysis is being developed for the Board of Trustees and Staff of ASRS.
- This analysis was developed based on generally accepted actuarial principles and techniques in accordance with all applicable Actuarial Standards of Practice (ASOPs).
- Except as noted herein, the analysis is based on the data, assumptions, methods, and plan provisions to be used in the Actuarial Valuation of the Plan as of June 30, 2014. Buck's work product contained herein was prepared exclusively for the Board of Trustees and Staff of ASRS. It is a complex, technical analysis that assumes a high level of knowledge concerning the Plan's operations.
- No third party recipient of Buck's work product should rely upon Buck's work product absent involvement of Buck or without our approval.



DISCLOSURES

- Future actuarial measurements may differ significantly from the current and projected measurements presented in this report due to such factors as: plan experience different from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.
- The consultants who worked on this assignment are pension actuaries with significant experience in public and private sector funds. Buck's advice is not intended to be a substitute for qualified legal or accounting counsel.
- Charlie Chittenden and David Kershner are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. Both are Fellows of the Society of Actuaries and Enrolled Actuaries. They are available to answer any questions on the material contained in this presentation, or to provide explanations or further details as may be appropriate.

ARIZONA STATE RETIREMENT SYSTEM
REPORT OF AN ACTUARIAL AUDIT

JUNE 13, 2014

June 13, 2014

Retirement Board
Arizona State Retirement System
3300 North Central Avenue
14th Floor
Phoenix, Arizona 85012

Dear Retirement Board Members:

Gabriel, Roeder, Smith & Company (GRS) is pleased to present this report of an actuarial audit of the June 30, 2013 actuarial valuations of the Arizona State Retirement System (ASRS) retirement programs. The scope of our actuarial audit included the ASRS Plan (pension and health benefits), the ASRS System (pension and health benefits), and the Long Term Disability Program (LTD). We are grateful to the ASRS staff and Buck Consultants (Buck), the retained actuary, for their cooperation throughout the actuarial audit process.

This actuarial audit involves an independent verification and analysis of the assumptions, procedures, methods, and conclusions used by the retained actuary for ASRS, in the actuarial valuations of ASRS as of June 30, 2013, to ensure that the conclusions are technically sound and conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board.

GRS is pleased to report to the Board, in our professional opinion, the June 30, 2013 actuarial valuations prepared by the retained actuary provide fair and reasonable assessments of the financial position of ASRS.

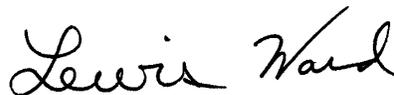
Throughout this report we make a number of suggestions for ways to improve the work product. We hope that the retained actuary and ASRS find these items helpful. Thank you for the opportunity to work on this assignment.

Mr. Falls is an Enrolled Actuary, a Fellow of the Society of Actuaries, and a Member of the American Academy of Actuaries. He meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Both Mr. Falls and Mr. Ward are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



R. Ryan Falls, FSA, FCA, MAAA, EA
Senior Consultant



Lewis Ward
Consultant

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SECTION I

EXECUTIVE SUMMARY

Executive Summary

The Arizona State Retirement System (ASRS) engaged Gabriel, Roeder, Smith & Company (GRS) for an actuarial audit of the recent actuarial valuations, studies and reports on the ASRS Plan (pension and health benefits), the ASRS System (pension and health benefits), and the Long Term Disability Program (LTD) performed by the retained actuary.

This scope of this actuarial audit includes the following:

- Review and analysis of the results of the actuarial valuations for the year ended June 30, 2013, including an evaluation of the data used, for reasonableness and consistency as well as a review of the mathematical calculations for completeness and accuracy, based on a full replication of the actuarial valuations.
- Evaluate the actuarial cost method and the actuarial asset valuation method in use and whether other methods may be more appropriate for ASRS.
- Review the demographic and economic actuarial assumptions for consistency, reasonableness and compatibility. Such assumptions shall include, but are not limited to: mortality, retirement and separation rates, levels of pay adjustments, rates of investment return, inflation, Health Benefit Supplement eligibility rates, and disability rates.
- Determine whether the financial objectives of the retirement programs are being met based on the current funding policies.
- Confirm that the actuarial valuations are performed by qualified actuaries and assess the adherence to Actuarial Standards of Practice (ASOPs) published by the Actuarial Standards Board.

The scope of our engagement also includes a validation of the cost savings projections presented in the ASRS Cost Savings Initiatives matrix. The results of this validation will be communicated to the Board in a separate communication.

Summary of Findings

Based on our review of the census data, experience study documents, liability replication, liability calculations for a sample of members, and the actuarial valuation reports, we believe the June 30, 2013 actuarial valuations of the ASRS retirement programs are reasonable, are based on appropriate assumptions and methods, and the reports generally comply with the Actuarial Standards of Practice.

We offer the following recommendations based on the valuation methods and assumptions used by the retained actuary in the June 30, 2013 actuarial valuations of the ASRS Plan, the ASRS System, and the LTD Program.

Actuarial Assumptions

1. In order to improve the overall completeness of the next actuarial experience study report, we recommend the following:
 - a. The retained actuary should include more detail regarding the “actuals” and “exposures” underlying the assumptions reviewed, and
 - b. The retained actuary should provide a thorough analysis of the underlying inflation assumption and separately identify price inflation from wage inflation.
2. We recommend that the retained actuary modify the simplifying assumption used for the actuarial valuations of active members to assume that the post-retirement mortality assumption will be the mortality assumption for annuitants with benefits greater than \$14,400.
3. We recommend that in future experience studies the retained actuary considers the impact of retirement incentives on observed retirement rates, both during the year of the retirement incentive as well as the year (or years) following the retirement incentive.
4. We recommend that in future experience studies the retained actuary thoroughly considers the economic cycle during the period that the assumptions are being studied and apply the appropriate level of weighting to the experience during the assumption setting process if that economic cycle is not expected to continue.

Actuarial Methods

5. We believe that the actuarial methods are reasonable and appropriately applied. As a result, we have no recommendations regarding the application of the actuarial methods.

Funding Policy and Financial Objectives

6. We recommend that the ASRS Board consider adopting a formal funding policy which would codify the decisions already made by the Board and the reasons behind the decisions. Additionally, the funding policy can document the steps taken to manage pension risks.
7. We recommend that the retained actuary discuss with the Board possible adjustments to the contribution calculation that will eliminate the current disconnects resulting from (1) the different contribution rates during the lag period, and (2) the calculation of the normal cost rate. The current approach to calculating the funding policy contribution will eventually incorporate these costs into the contribution. However, we believe that these adjustments will allocate the contributions to the most appropriate period of time and keep the contribution rates more stable.

Actuarial Valuation Results

8. In the next actuarial valuation, we recommend that the retained actuary incorporate actual pay history into their valuation of active participants and update the actuarial valuation of the Other-than-Plan retirees.

Content of Valuation Report

9. In order to improve the ability of the report to communicate the assumptions, methods and plan provisions incorporated into the actuarial valuations of the ASRS retirement programs, we recommend that the retained actuary incorporate the noted enhancements to future actuarial valuation reports.

SECTION II

GENERAL ACTUARIAL AUDIT PROCEDURE

General Actuarial Audit Procedure

At the commencement of this engagement, GRS requested the information necessary to thoroughly review the work product of the retained actuary. Specifically, GRS received and reviewed the following items:

- Actuarial valuation reports for the ASRS Plan, the ASRS System, and the Long Term Disability Program as of June 30, 2013,
- Actuarial Experience Study for the five-year period ending June 30, 2012,
- ASRS Investment Policy Statement, most recently revised August 23, 2013,
- ASRS Strategic Asset Allocation Policy Schematic, approved by the Board on May 24, 2013,
- A preliminary set of census data for plan participants and beneficiaries as of June 30, 2013 originally provided by ASRS to the retained actuary for the actuarial valuations,
- A final set of census data for plan participants and beneficiaries as of June 30, 2013 used by the retained actuary for the actuarial valuations, and
- Detailed liability calculations from the retained actuary for a sampling of 25 participants in the various retirement programs as of June 30, 2013.

In performing our review, we:

- Reviewed member handbooks and applicable statutes to understand the benefits provided by ASRS,
- Reviewed the appropriateness of the actuarial assumptions and methods,
- Reviewed the actuarial valuation reports,
- Replicated the calculation of the actuarial accrued liabilities in our actuarial valuation software, and
- Reviewed the detailed liability calculation of the sample lives, to ensure that the calculations were consistent with the stated plan provisions, actuarial methods and assumptions.

The actuarial audit findings, which follow, are based on our review of this information and subsequent correspondence with the retained actuary for clarification and further documentation.

Key Actuarial Concepts

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement plan using the set of actuarial assumptions adopted by the governing board. It is designed to simulate all of the dynamics of such a retirement plan for each current participant of the plan, including:

- Accrual of future service,
- Changes in compensation,
- Leaving the plan through retirement, disability, withdrawal, or death, and
- Determination of and payment of benefits from the plan.

This simulated dynamic is applied to each active member in the plan and results in a set of expected future benefit payments for that member. Discounting those future payments for the likelihood of survival at the assumed rate of investment return produces the Total Present Value of Plan Benefits

(TPV) for that participant. The actuarial cost method will allocate this TPV between the participant's past service (actuarial accrued liability) and future service (future normal costs).

We believe that an actuarial audit should not focus on finding differences in actuarial processes and procedures utilized by the consulting actuary and the auditing actuary. Rather, our intent is to identify and suggest improvements to the process and procedures utilized by ASRS's retained actuary. In performing this actuarial audit, we attempted to limit our discussions regarding opinion differences and focus our attention on the accuracy of the calculations of the liability and costs, completeness and reliability of reporting, and compliance with the Actuarial Standards of Practice that apply to the work performed by ASRS's retained actuary.

These key actuarial concepts will be discussed in more detail throughout this report.

Actuarial Qualifications

The June 30, 2013 actuarial valuations of the ASRS Plan, the ASRS System, and the LTD Program were signed by Mr. Charles E. Chittenden, FSA, EA, MAAA and Mr. Douglas J. Fiddler, ASA, EA, MAAA. Both Mr. Chittenden and Mr. Fiddler have attained the actuarial credentials noted on the signature line of the actuarial valuation reports and are compliant with Society of Actuaries Continuing Professional Development requirement.

The June 30, 2013 actuarial valuation of the LTD Program was also signed by Mr. Reza Vahid, FSA, MAAA. Mr. Vahid has attained the actuarial credentials noted on the signature line of the actuarial valuation report and is compliant with Society of Actuaries Continuing Professional Development requirement.

In all cases, the actuarial valuation reports indicate that the signing actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in the actuarial valuation reports.

Actuarial Fees

As part of the actuarial audit, GRS was asked to express an opinion regarding whether or not the various fees paid by ASRS to the retained actuary are reasonable. ASRS provided GRS with the current fee schedule with their retained actuary as well as the actual invoices prepared by the retained actuary from July 2011 through February 2014.

The fee schedule indicates that ASRS pays the retained actuary a total of \$109,000 for the annual actuarial valuations of all three retirement programs. Additionally, the fee schedule indicates that ASRS pays the retained actuary a total of \$73,500 for the experience studies, as needed. It should be noted that the retained actuary also provides a 10% to 20% volume discount depending on the amount of business that is conducted. These fixed fees for actuarial valuations and experience studies appear to be reasonable based on our experiences with similarly sized retirement systems. The hourly rates charged by the retained actuary for services outside of the fixed fee (\$175 to \$395 per hour) also appear to be reasonable based on our experiences with similarly sized retirement systems.

The total fees that ASRS has paid to the retained actuary over the period from July 2011 through February 2014 have averaged approximately \$80,500 per month (or close to \$1 million per year). This total may be on the high-end of fees paid by similarly sized retirement systems. However, the total

fees are highly dependent on the number of requests, and the complexity of the requests, made by ASRS of their retained actuary. The retained actuary does provide the total number of hours worked, by project, on the monthly invoice. This detail should allow ASRS to monitor the number of hours worked, by project, and make sure that the number of hours charged are commensurate with the expectations of ASRS and the results of the request.

Ultimately, if ASRS is pleased with the work product of their retained actuary, then the various fees paid by ASRS to their retained actuary are reasonable.

SECTION III
ACTUARIAL ASSUMPTIONS

Actuarial Assumptions

Overview

The set of actuarial assumptions is one of the foundations upon which an actuarial valuation is based. An actuarial valuation is, essentially, a statistical projection of the amount and timing of future benefits to be paid under a retirement program. In any statistical projection, assumptions as to future events will drive the process. Actuarial valuations are no exception.

The actuarial valuation reports for all of the ASRS retirement programs contain descriptions of the actuarial assumptions which were used in the actuarial valuations as of June 30, 2013. Additionally, the retained actuary published an actuarial experience study report, dated July 24, 2013. We conducted a thorough review of these documents in order to assess the reasonableness of the assumptions used in the actuarial valuations.

It is important to understand the nature of the retirement plan and the plan sponsor when assessing the reasonableness of the actuarial assumptions. No projection of future events can be labeled as “correct” or “incorrect”. However, there is a “range of reasonableness” for each assumption. We evaluated each individual assumption as follows:

- Whether or not they fall within the range of reasonableness, and
- If they fall within that range, whether they are reasonable for the actuarial valuation of the plan.

Actuarial assumptions for the valuation of retirement plans are of two types: (i) demographic assumptions, and (ii) economic assumptions. We have assessed the reasonableness of both types as part of this actuarial audit.

Demographic Assumptions

General

These assumptions simulate the movement of participants into and out of plan coverage and between status types. Key demographic assumptions are:

- turnover among active members,
- retirement patterns among active members, and
- healthy retiree mortality.

In addition, there are a number of other demographic assumptions with less substantial impact on the results of the process, such as:

- disability incidence and mortality among disabled benefit recipients,
- mortality among active members,
- distribution of form of payment selection, and
- percent of active members who are married and the relationship of the ages of participants and spouses.

Because ASRS also administers the 401(h) health care benefit as part of the ASRS Plan and the LTD Program, there are additional assumptions that have importance that are not generally part of a standard pension plan valuation. These assumptions are:

- The number of retired members electing the 401(h) health care benefit which is dependent on the number of retired members electing the State health care plan,
- Offsets to benefits payable to members on LTD, and
- Incurred but not reported (IBNR) liability for LTD claims.

Demographic assumptions for retirement programs are normally established by statistical studies of recent actual experience, called experience studies. Such studies underlie the assumptions used in the valuations.

Once it is determined whether or not an assumption needs adjustment, setting the new assumption depends upon the extent to which the current experience is an indicator of the long-term future. The measurement of experience is normally affected by simply counting occurrences of an event. For example, in reviewing retirement patterns, an actuary might count the number of actual retirees among males aged 50 with 20 years of service. These retirements would be compared against the number of total people in that group to generate a raw rate of retirement for that group.

- Full credibility may be given to the current experience. Under this approach the new assumptions are set very close to recent experience.
- Alternatively, the recent experience might be given only partial credibility. Thus, the new assumptions may be set by blending the recent experience with the prior assumption.
- If recent experience is believed to be atypical of the future, such knowledge is taken into account.

Finally, it may be determined that the size of the plan does not provide a large enough sample to make the data credible. In such cases, the experience of the plan may be disregarded and the assumption is set based upon industry standards for similar groups.

Actuarial Experience Study Report – Demographic Assumptions

We believe that the discussion section of the actuarial experience review report, dated July 24, 2013, did an adequate job of describing each assumption, providing context for the basis of each assumption, and outlining the reason for the proposed assumption going forward.

The report did not contain any information concerning the actual number of members that left active service during the experience period (actuals) nor the number of members that were exposed to the forces that cause members to leave active service (exposures). The report does contain tables that show the percentages of members leaving active service (actual-to-expected ratios, or “A/E ratios”) for both the current assumptions and the proposed assumptions. Without the context of these numbers it is difficult to analyze some of the changes made to the assumptions. For example, when an A/E ratio changes from 160% to 105% (withdrawal assumption for males with 28 years of service as noted on page 78 of the experience study report), did the expected number of terminations increase by several dozen or by one or two?

We recommend that the retained actuary include more detail regarding the “actuals” and “exposures” underlying the assumptions reviewed as part of the next experience study.

We have additional comments related to the mortality rates and the retirement rates. These comments will be discussed in the following sections.

Observations on Assumptions

Overall, it appears that the current demographic assumptions are reasonable. Below, we offer general observations and considerations for the retained actuary based on our experiences with similar plans.

Healthy Post-Retirement Mortality – The most important demographic assumption is post-retirement mortality because this assumption is a predictor of how long pension payments will be made. The current post-retirement mortality assumption is based on the 1994 Group Annuity Mortality (94GAM) table with mortality improvements projected to 2015 using projection scale BB. The mortality assumption is further adjusted based on the size of the member’s benefit. Specifically, healthy retirees who are receiving annual retirement benefits from ASRS of less than \$6,000 are assumed to have a shorter life expectancy than the base assumption. Similarly, healthy retirees who are receiving annual retirement benefits from ASRS of greater than \$14,400 are assumed to have a longer life expectancy than the base assumption.

There is ample evidence that a retiree’s economic status is a factor in their rates of mortality; therefore, the use of different rates of mortality based on benefit size is very justified. In addition, the retained actuary has selected rates of mortality that appear to provide reasonable margins in the rates of mortality to allow for future mortality improvement.

We believe that this assumption is reasonable and appropriately applied to the current annuitants receiving a benefit from ASRS retirement programs.

However, we have some concerns about how this post-retirement mortality assumption is incorporated into the actuarial valuation of the current active members (future retirees). The retained actuary used a simplifying assumption that applies the healthy post-retirement mortality assumption “with no adjustments for small or large benefits” to all future termination and retirement annuity benefits. The result of this simplifying assumption is that the life expectancy for all current active members is based on the mortality table applicable to annuitants receiving a benefit between \$6,000 and \$14,400.

We understand it would be very complicated for the retained actuary to directly apply the stated post-retirement mortality assumption, as it is currently constructed, in the actuarial valuation of the active members. Most actuarial valuation systems would not allow the user to change the post-retirement mortality assumption at each projected retirement age for active members. As a result, we believe that the use of a simplifying assumption for post-retirement mortality, as it is currently constructed, is reasonable for the actuarial valuation of the active members.

As an illustration, the average active member in the ASRS Plan as of June 30, 2013 was approximately 46 years old with 10 years of service and was earning \$43,000 per year. Based on the June 30, 2013 actuarial assumptions, the average member’s projected retirement benefits are summarized in the following table.

Age at Retirement	Projected Benefit	Benefit Category	Probability of Receipt
50	\$7,200	Between \$6,000 and \$14,400	3.2%
51	8,800	Between \$6,000 and \$14,400	3.1%
52	10,600	Between \$6,000 and \$14,400	2.9%
53	12,700	Between \$6,000 and \$14,400	2.8%
54	14,900	Greater than \$14,400	2.7%
55	17,500	Greater than \$14,400	2.5%
56	22,300	Greater than \$14,400	6.1%
57	27,700	Greater than \$14,400	5.4%
58	31,300	Greater than \$14,400	7.3%
59	34,200	Greater than \$14,400	6.9%
60	36,800	Greater than \$14,400	8.1%
61	39,900	Greater than \$14,400	6.3%
62	43,300	Greater than \$14,400	4.7%
63	46,300	Greater than \$14,400	2.8%
64	49,400	Greater than \$14,400	2.2%
65	52,700	Greater than \$14,400	2.9%

As the table illustrates, it would be more appropriate to apply a simplifying assumption that this member will have the assumed mortality for annuitants with benefits greater than \$14,400.

The final June 30, 2013 actuarial valuation data includes approximately 24,000 healthy retired members that have a retirement date after June 30, 2010. The level of benefits for these new retirees can be summarized as follows:

Benefit Category	Number of Retirees	% of Retirees	Total Annual Benefits	% of Total Benefits
Less than \$6,000	6,311	26%	\$19,059,611	4%
Between \$6,000 and \$14,400	5,823	24%	57,222,725	12%
Greater than \$14,400	11,826	50%	396,489,418	84%
Total	23,960		\$472,771,754	

Approximately 50% of the new healthy retirements over the past three years are receiving annual benefits greater than \$14,400. However, from the perspective of the percentage of annual benefits being paid, the new healthy retirees over the past three years that are receiving annual benefits greater than \$14,400 are receiving 84% of the total annual payments to these new retirees. Conversely, the new healthy retirees with annual benefits less than \$14,400 are only receiving 16% of the total annual payments to these new retirees.

The use of a simplifying assumption of using the unadjusted mortality rates (rates for members with annual benefits between \$6,000 and \$14,400) will result in actuarial losses each valuation cycle. That is because, within each new group of retiring members, the majority of these new retirees will ultimately be valued with the mortality for annuitants with benefits greater than \$14,400. Additionally, since the \$14,400 threshold is a static assumption, the ratio of future retirees exceeding this threshold will continue to increase over time due to inflationary forces.

We believe that the retained actuary should use a simplifying assumption that applies the healthy post-retirement mortality assumption for annuitants with annual retirement benefits greater than \$14,400 (the assumption that assumes a longer life expectancy for a larger benefit).

This simplifying assumption would be conservative because there are definitely current active members with projected benefits that are less than \$14,400. As a result, the use of this simplifying assumption will result in actuarial gains as each new group of retiring members commences their benefits. However, the magnitude of the actuarial gains will be significantly smaller in size than the actuarial losses resulting from the current simplifying assumption.

Our primary recommendation is that the retained actuary modify the simplifying assumption for the actuarial valuation of active members to assume that their post-retirement mortality assumption will be the mortality assumption for annuitants with benefits greater than \$14,400. We estimate that this modification will increase the actuarial accrued liability for active members by approximately \$300 million (which equates to approximately a 2% increase in the actuarial accrued liability for active members).

For the next experience study, we encourage the retained actuary to explore alternate methods of analyzing mortality experience (e.g., benefit weighted, liability weighted, etc.) that will result in a mortality assumption that can be more directly incorporated into their actuarial valuation software. As previously stated, there is evidence that a retiree's economic status is a factor in their rates of mortality and we support the general approach of reflecting these differences.

Disabled Mortality – The experience study report also included a recommendation that the mortality assumption for disabled lives be returned to the assumption that was in place prior to 2008. This appears to be the elimination of a 10-year set forward in the disabled life mortality table. Based on the A/E ratios in the experience study report, the proposed assumptions do not fit the data particularly well. However, this is often the case when analyzing disabled mortality. The current assumption does appear to be a significant improvement over the prior assumption and does appear to be reasonable in aggregate.

Retirement – Members are eligible to retire with an unreduced benefit at age 65, at age 62 if they have at least 10 years of service, or Rule of 80 (for members hired after July 1, 2011 the Rule of 80 has been replaced with age 60 and 25 years of service or age 55 with 30 years of service). Members are eligible for a reduced benefit at age 50 with five years of service. The rates at which participants are assumed to retire are based on the member's service. The current assumption was developed to be consistent with a portion of the actual experience over the most recent experience study period. The retained actuary noted that they excluded from the study all members who retired as part of an early retirement incentive offer. In our experience, when an early retirement incentive impacts the analysis of retirement rates it not only impacts the year in which it was offered but also impacts the year (or years) following the incentive (depending upon how strong the incentive was). In other words, an increase in the number of retirements in the year of the incentive is followed by a dearth of retirements in the year (or years) that follow.

The following table shows a simple example. Assume that we have 20 employees who are eligible to retire and that, each year, two are expected to retire and two new employees will become eligible to retire. Columns 2 and 3 show the expected experience without a retirement incentive. Columns 4 and 5 show the impact of a retirement incentive in Year 3. The retirement incentive results in two additional retirements in Year 3. These employees were expected to retire in Year 4 and now they

don't because they are already retired. Also, note that the number of eligible retirements is less in Year 4, as well, because there are still only two new employees that become eligible to replace the four actual retirements.

Time Frame	Without Retirement Incentive		With Retirement Incentive	
	Eligible to Retire	Number of Retirements	Eligible to Retire	Number of Retirements
(1)	(2)	(3)	(4)	(5)
Year 1	20	2	20	2
Year 2	20	2	20	2
Year 3	20	2	20	4
Year 4	20	2	18	0
Year 5	20	2	20	2

If we include all 5 years of the study, the retirement rate is 10% per year without the retirement incentive and 9.8% per year with the retirement incentive. If members who retired as part of the retirement incentive are excluded (or exclude only Year 3 from the analysis) the resulting retirement rate from the analysis would be 7.5% (or, 6 divided by 80). Note, however, that if both the year with the incentive and the year following the incentive are excluded from the results then the retirement rate returns back to 10%.

Overall, we believe that the current retirement assumption is reasonable for the ASRS retirement programs. Given the lack of "actuals" and "exposures" detail in the experience study report regarding the numbers of retirements, it is difficult for us to comment further on this assumption. In future experience studies, we recommend that the retained actuary consider the impact of retirement incentives on observed retirement rates, both during the retirement incentive as well as the year (or years) following the retirement incentive.

Turnover – The rates at which members are assumed to withdraw (or turnover) prior to eligibility for retirement are based on the member's service. The current assumption was developed to be consistent with the actual experience of the ASRS retirement programs over the most recent experience study period. The prior assumption was based on both age and service. In our experience, most often turnover rates are more closely associated with service than with age and therefore, we agree with the retained actuary's decision to use service based rates. We believe that the turnover rate assumption is reasonable for the ASRS retirement programs.

Pre-Retirement Mortality – The current pre-retirement mortality assumption for active members is based on the 1994 Group Annuity Mortality (94GAM) table. Specifically, the assumption that active members die prior to commencing their retirement benefit is 50% of the 94GAM tables projected to 2015 using projection scale BB. This pre-retirement mortality assumption is different than the post-retirement mortality assumption at the same ages.

It is often the case that the observed pre-retirement mortality of active members is notably different than post-retirement mortality at the ages where members are eligible to retire. This difference is most likely the result of members that are eligible to retire while in poor health, electing to retire, and then subsequently dying shortly thereafter. This results in proportionately fewer pre-retirement deaths in the active membership and proportionately more post-retirement deaths in the early years of retirement. This effect appears to be the case with the ASRS retirement programs. Based on the information in the experience study it appears that the mortality assumption for the active employees is reasonable.

Disability Incidence – The current assumption for disability incidence is based on a member’s age. The assumption was modified during the experience study to reflect lower rates of disability than were previously assumed. The current assumption appears to be reasonable.

Health Insurance Benefit (HIB) Elections – The current assumption is that 60% of future retirees will receive the HIB and that the proportion of those retirees who also get the dependent premium will be 40%. The assumption is extended into the first year of retirement with actual elections applying after the first year. The current assumption appears to be reasonable.

Load for Optional Form Selection – The current assumption is a load of 0.174% to retirement and termination benefits for the impact of the optional forms of payment not being actuarially equivalent to the single life annuity normal form of payment. There was no information contained in the experience study to support the assumption or to allow a third party to evaluate the assumption.

Alternate Contribution Rate – The retained actuary offsets the amortization payment for unfunded liabilities by an amount equal to the alternative contribution rate multiplied by the payroll for members on whom the alternative contribution rate is made (rehired retirees). In most systems that we work with that have this type of arrangement, the additional contributions received are used to reduce the unfunded liabilities in the year they are received and they are not counted on as a future source of funding. We would remind the retained actuary and ASRS that by making this assumption the retained actuary is assuming that the payroll for this group of members will remain constant over the remaining amortization period. There is no documentation in the experience study report to support this assumption. However, that does not mean the assumption is unreasonable.

Adjustment for Contribution Timing – The retained actuary changed the assumption for the timing of when contributions are received from the beginning of the year to throughout the year. The current assumption is reasonable and appropriate.

LTD Rates of Termination of Claims due to Death or Recovery – The retained actuary assumes that members receiving LTD benefits may cease receiving benefits both due to death and recovery from disability. The experience study indicated that the A/E ratio was 132% for males and 163% for females over the experience period studied which indicates that a change in the assumption is warranted. The retained actuary recommended a significant increase (50%) over the prior assumption which resulted in an A/E ratio of 88% for males and 109% for females. It appears that the recent increase in the assumed rates may have “over corrected” for the males. To reduce the possibility of future actuarial losses, we recommend that in the next experience study the retained actuary consider modifications to the assumption in a manner that result in an A/E ratio for both males and females closer to, or in excess of, 100%.

Offsets for Disabled and Active Members – The current assumption is that 90% of members receiving LTD benefits will have an offset to their benefits within three years of becoming disabled. It is assumed that for members with offsets, their average offset will be equal to 45% of their benefit. This assumption appears to be reasonable.

IBNR Load Assumption – The current assumption is a 20% load to the liability for new LTD recipients. This load is to reflect the fact that members have become disabled, and therefore are no longer in the active population that is being valued, but they have not yet been approved for their LTD benefit. This assumption appears to be reasonable.

Post-Retirement Mortality for all ASRS System Members – The current assumptions are the 1994 Group Annuity Mortality table with fully generational projections using Scale BB with adjustments for benefits over \$14,400 and under \$6,000. These are further adjusted by adding a one year age setback for males and a two year age setback for females. The experience study report indicates that there is insufficient data to make any analysis of these assumptions credible. Based on this assessment of credibility, we would expect that the same mortality assumption would be used for ASRS Plan and ASRS System retirees. If separate assumptions are to be used, then we recommend that the retained actuary include justification in their next experience study report of why the mortality assumption should be different for the ASRS System. Ultimately, the mortality assumption for the ASRS System is more conservative than the assumption for the ASRS Plan so we believe that this assumption is reasonable.

Other Assumptions – The actuarial valuation also utilizes several other assumptions, some of which include: (1) percentage of active members who are married, (2) assumed difference in age of the member and spouse, and (3) the percent of terminating members electing a refund or deferred annuity. Each of these other assumptions is reasonable.

Economic Assumptions

General

These assumptions simulate the impact of economic forces on the amounts and values of future benefits. Key economic assumptions are the assumed rate of investment return and assumed rates of future salary increase. All economic assumptions are built upon an underlying inflation assumption.

Actuarial Experience Study Report – Economic Assumptions

The report did not have any discussion or analysis about core price inflation. Usually, the inflation assumption is the building block of the economic assumptions (see discussion below about consistency). Because it is such an important assumption, experience studies generally dedicate a significant portion of the report to analyzing this assumption. There is usually analysis regarding historical inflation and, often, there is analysis about the future outlook for inflation. As part of the salary scale analysis, the experience study report only stated the “wage” inflation assumption with no further analysis. We recommend that the retained actuary provide a thorough analysis of the underlying inflation assumption in future experience study reports.

We have additional comments related to the “wage” inflation and the salary scale assumption. These comments will be discussed in the following sections.

Inflation

Inflation refers to mean price inflation as measured by annual increases in the Consumer Price Index (CPI). This assumption underlies, and is the building block, for most of the other economic assumptions, including the investment return assumption and the assumed rate of salary increases. As such, it is fundamentally important that a consistent inflation assumption is used throughout the assumption review process.

Since 2009, the Board has adopted three revisions to the salary increase assumption. As part of each of these assumption changes, there have been changes to the underlying inflation assumption; however, the details of the changes were not always clearly indicated in the documentation we reviewed. Based on the June 30, 2013 actuarial valuation reports, the retained actuary indicates that “wage” inflation is assumed to be 3.00%. It is unclear whether this “wage” inflation is intended to represent core (price) inflation or something larger than core inflation.

For purposes of our actuarial review, we have assumed that the stated “wage” inflation assumption of 3.00% also represents the assumption for core inflation.

Actual historical increases in CPI have averaged about 2.50% over the last 20 years. Average increases in inflation for the 20 years prior to the year 1990 have averaged much higher than the current assumption. However, since this is a forward-looking assumption, historical experience is not the best measure for predicting future increases in inflation. Rather, there are several sources that provide forward-looking inflation expectations. These sources include the bond market, investment consulting firms, surveys of professional forecasters conducted by the Philadelphia Federal Reserve, and assumptions used by the Chief Actuary at the Social Security Administration for projecting the long-term cost of benefits provided by the Social Security Administration.

These sources show similar inflation expectations. Namely, inflation during the next five years is expected to be lower than long-term inflation expectations. Also, each of these sources is consistent with their long-term inflation expectations, and project inflation for the next 10 to 20 years to range from 2.40% to 2.80% annually.

Taking this information into consideration, we believe the current 3.00% “wage” inflation assumption appears to be reasonable, although as stated above, it is unclear whether it represents price inflation or price inflation plus an additional wage or productivity component.

Investment Return

The investment return assumption is one of the principal assumptions in any actuarial valuation. It is used to discount future expected benefit payments to the valuation date to determine the liabilities of the retirement plan. Even a small change to this assumption can produce significant changes to the liabilities and contribution rates.

The current investment return assumption is 8.00%. We have analyzed the assumption assuming that the assumption is constructed from a 3.00% inflation assumption plus an annual real rate of return of 5.00%, net of investment fees and administrative expenses paid from the trust.

We believe an appropriate approach to reviewing an investment return assumption is to determine the median expected portfolio return given the retirement plan's target allocation and a given set of capital market assumptions. Per the ASRS Strategic Asset Allocation Policy Schematic, approved by the Board of Trustees on May 24, 2013, ASRS's current target asset allocation is:

Asset Class	Target
Large Cap U.S. Equities	23%
Mid Cap U.S. Equities	5%
Small Cap U.S. Equities	5%
Developed Large Cap Non-US Equities	14%
Developed Small Cap Non-US Equities	3%
Emerging Markets Non-US Equities	6%
Private Equity	7%
Core U.S. Fixed Income	13%
High Yield U.S. Fixed Income	5%
Emerging Market Debt	4%
Private Debt	3%
Commodities	4%
Real Estate	8%
Cash	0%
Total	100%

In addition to these allocations, the investment policy allows for a 10% Global Tactical Asset Allocation.

Because GRS does not develop or maintain its own capital market assumptions, we reviewed assumptions developed and published by the following investment consulting firms:

- JP Morgan
- NEPC
- PCA
- Mercer
- RV Kuhns
- Towers Watson
- BNY Mellon
- Hewitt EnnisKnupp

These investment consulting firms issue reports that describe their capital market assumptions, which include their estimates of expected returns, volatility, and correlations. While these assumptions are developed based upon historical analysis, many of these firms also incorporate forward looking adjustments to better reflect near-term expectations.

Given ASRS's current strategic target asset allocation and the investment firms' capital market assumptions for 2013, the development of the average nominal return, net of investment and administrative fees paid from the trust, is provided in the table below:

Investment Consultant	Investment Consultant Expected Nominal Return	Investment Consultant Inflation Assumption	Expected Real Return (2)–(3)	Actuary Inflation Assumption	Expected Nominal Return (4)+(5)	Plan Incurred Expense Assumption	Expected Nominal Return Net of Expenses (6)–(7)	Standard Deviation of Expected Return (1-Year)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	7.14%	3.00%	4.14%	3.00%	7.14%	0.34%	6.80%	12.50%
2	7.26%	2.40%	4.86%	3.00%	7.86%	0.34%	7.52%	10.70%
3	7.99%	3.00%	4.99%	3.00%	7.99%	0.34%	7.65%	13.10%
4	7.58%	2.50%	5.08%	3.00%	8.08%	0.34%	7.74%	14.70%
5	7.61%	2.50%	5.11%	3.00%	8.11%	0.34%	7.77%	14.20%
6	8.27%	2.51%	5.76%	3.00%	8.76%	0.34%	8.42%	14.70%
7	8.24%	2.30%	5.94%	3.00%	8.94%	0.34%	8.60%	15.10%
8	8.61%	2.50%	6.11%	3.00%	9.11%	0.34%	8.77%	14.40%
Average	7.84%	2.59%	5.25%	3.00%	8.25%	0.34%	7.91%	13.68%

We determined, for each firm, the expected nominal return rate based on ASRS's target allocation and then subtracted that investment consulting firm's expected inflation to arrive at their expected real return in column (4). Then we added back ASRS's current 3.00% inflation assumption and subtracted an estimated 0.34% for investment fees and administrative expenses (see discussion below) paid from the trust to arrive at an expected nominal return net of expenses. As the table shows, the resulting average arithmetic one-year return of the eight firms is 7.91%. It should be noted that the average administrative and investment expenses for the prior five fiscal years was 0.66%. However, we reduced the offset for the investment expenses related to active management. The reason for the reduced offset is the expectation that the managers will generate enough alpha to at least cover the cost of the active management. No additional alpha for active management is considered.

In addition to examining the expected one-year return, it is important to review anticipated volatility of the investment portfolio and understand the range of long-term net return that could be expected to be produced by the investment portfolio. Therefore, the following table provides the 25th, 50th, and 75th percentiles of the 20-year geometric average of the expected nominal return, net of investment and administrative fees paid from the trust, as well as the probability of exceeding the current 8.00% assumption.

Investment Consultant	Distribution of 20-Year Average Geometric Net Nominal Return			Probability of exceeding 8.00% *
	25th	50th	75th	
(1)	(2)	(3)	(4)	(5)
1	4.21%	6.06%	7.94%	24.3%
2	5.40%	6.98%	8.59%	33.5%
3	4.91%	6.84%	8.82%	34.6%
4	4.55%	6.72%	8.94%	34.8%
5	4.75%	6.83%	8.96%	35.5%
6	5.25%	7.41%	9.62%	42.9%
7	5.32%	7.54%	9.80%	44.5%
8	5.67%	7.80%	9.97%	47.4%
Average	5.01%	7.02%	9.08%	37.2%

*Plan's current return assumption net of expenses.

As the analysis shows, there is a 50% likelihood that the 20-year average net nominal return will be between 5.01% and 9.08%. Under the current Actuarial Standards of Practice No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, this is the best estimate range for a reasonable investment return assumption. Further, while the table above documents that the average probability of exceeding the current 8.00% investment return assumption is only 37.2%, it must be noted that the average duration for these return expectations is short-term in nature (7-10 years). If the capital market assumptions were based on a longer time horizon it would be reasonable to assume that the rate of return expectations would be greater.

As a point of reference, the National Association of State Retirement Administrators published a survey in March 2013 of 126 large public retirement systems which reflects the nominal assumption in use, or announced for use, as of the date of the survey. The average investment return assumption for responding systems was 7.77%.

The current investment return assumption falls within our best-estimate range and we believe that the current 8.00% assumption is reasonable for this purpose.

In September 2013, the Actuarial Standard Board adopted changes to ASOP No. 27 which significantly reduced the reasonable range for an acceptable investment return assumption. The effective date for this new standard is for measurement dates on or after September 30, 2014. While this new standard does not apply to the actuarial valuation that is being audited, ASRS may wish to discuss the possible impact of these changes with their retained actuary.

Earnings Progression

Generally, assumed rates of pay increase are usually constructed as the total of three main components:

- Price Inflation – currently 3.00% (see discussion below)
- Economic Productivity Increases (base pay increases above price inflation) – currently 0.00% (see discussion below)
- Merit, Promotion, and Longevity – This portion of the salary increase assumption reflects components such as promotional increases as well as “step” increases and longevity pay. This portion of the assumption is not related to inflation.

In the context of a typical employer pay scale, pay levels are set for various employment grades, or “steps”. In general, this pay scale is adjusted as follows:

- The inflation and economic productivity assumptions, collectively referred to as wage inflation, reflect the overall increases of the entire pay scale, and
- The Merit, Promotion, and Longevity increase assumption reflects movement of members through the pay scale.

In the most recent experience study, the retained actuary proposed a base “wage” inflation of 3.00% plus a merit component that varied based on service. The retained actuary recommended changes to the merit component of the salary scale assumption which, when combined with the changes in the “wage” inflation, resulted in a 25% across the board reduction in the salary increase assumption. As most are aware, during the five year period covered by the experience study, the country suffered through what is generally referred to as the “Great Recession”. The Great Recession caused severe financial hardship for many state and municipal governments which was passed onto employees in the form of very small pay increases, reductions in force, and furloughs. Given these financial hardships, it can be very difficult to use the observed salary increases during this period as a basis for setting an assumption for the future.

The retained actuary has experience with ASRS and may have additional information regarding the appropriateness of the long-term expectation for salary increases above inflation. As a result, this comment is not intended to imply that the current assumption is unreasonable, but only that the retained actuary should thoroughly consider the economic cycle during the period being studied and make adjustments if that economic cycle is not expected to continue. We recommend that the retained actuary and the Board closely monitor the salary experience and update the assumption, accordingly, if it appears that salaries are consistently increasing by more than the current assumption anticipates.

Summary

The set of actuarial assumptions and methods, taken in combination, is within the range of reasonableness and generally established in accordance with ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, and ASOP No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations.

We have the following recommendations regarding the actuarial assumptions:

- In order to improve the overall completeness of the next actuarial experience study report, we recommend the following:
 - The retained actuary should include more detail regarding the “actuals” and “exposures” underlying the assumptions reviewed, and
 - The retained actuary should provide a thorough analysis of the underlying inflation assumption and separately identify price inflation from wage inflation.
- We recommend that the retained actuary modify the simplifying assumption used for the actuarial valuations of active members to assume that the post-retirement mortality assumption will be the mortality assumption for annuitants with benefits greater than \$14,400.
- We recommend that in future experience studies the retained actuary considers the impact of retirement incentives on observed retirement rates, both during the year of the retirement incentive as well as the year (or years) following the retirement incentive.
- We recommend that in future experience studies the retained actuary thoroughly considers the economic cycle during the period that the assumptions are being studied and apply the appropriate level of weighting to the experience during the assumption setting process if that economic cycle is not expected to continue.

SECTION IV

ACTUARIAL METHODS

Actuarial Methods

The ultimate cost of the retirement programs administered by ASRS is equal to the benefits paid plus the expenses related to operating ASRS. This cost is funded through contributions to the programs administered by ASRS plus the investment return on accumulated contributions which are not immediately needed to pay benefits or expenses. The projected level and timing of the contributions needed to fund the ultimate cost are determined by the actuarial assumptions, plan provisions, participant characteristics, investment experience, and the actuarial cost method.

Actuarial Cost Methods

An actuarial cost method is a mathematical process for allocating the dollar amount of the total present value of plan benefits (TPV) between future normal costs and actuarial accrued liability (AAL). As prescribed by State statute, the retained actuary uses the Projected Unit Credit actuarial cost method (PUC method), where the TPV for an individual is allocated in proportion to accrued and future service at the valuation date. Essentially, the PUC method recognizes years of service when earned, but projects salary to retirement age. As such, the AAL for an individual member is generally equal to the TPV times the ratio of (i) the number of years of covered service on the date of the actuarial valuation, to (ii) the total expected covered service at retirement. There are varying methods that can be used to determine the proportion of the TPV that will be attributed to the AAL.

The normal cost is generally equal to the increase in the AAL due to one additional year of service in the numerator of the ratio described above. The normal cost under the PUC method increases as a percentage of pay for an individual member from the date of hire to the date of retirement. This differs from the behavior of the normal cost under the Entry Age Normal actuarial cost method (the most widely used actuarial cost method in the public sector) where the normal cost is expected to be level as a percentage of pay.

Although the Entry Age Normal actuarial cost method is the most widely used actuarial cost method in the public sector, the PUC method, used in the actuarial valuation of all three retirement programs administered by ASRS, is still a commonly used method. The PUC method is one of the six currently accepted cost methods under GASB No. 25 and is a reasonable method for ASRS.

The Governmental Accounting Standards Board (GASB) has adopted new accounting standards for Pension Plans (Statements 67 and 68) which will be effective for the June 30, 2014 financial statements of ASRS. These new standards specify that the Entry Age Normal actuarial cost method is the only acceptable method for determining the required GASB disclosures. This requirement does not directly affect the actuarial cost method that is adopted by the Board and used to develop the funding requirements. However, the use of different actuarial cost methods will result in the disclosure of multiple actuarial liabilities (one for funding and one for accounting).

We have reviewed the retained actuary's application of the Projected Unit Credit actuarial cost method and we believe that the method is reasonable and appropriately applied.

Asset Valuation Method

The market value of assets can experience significant short-term swings, which can cause large fluctuations in the development of the actuarially determined contributions required to fund the retirement systems. Thus, many systems use an asset valuation method which dampens these short-term volatilities to achieve more stability in the employer contribution. A good asset valuation method places values on a retirement plan's assets which are related to the current market value, but which will also produce a smoother pattern of costs.

ASOP No. 44, Selection and Use of Asset Valuation Methods for Pension Valuations, provides a framework for the determination of the actuarial value of assets (AVA), emphasizing that the method should: (1) bear a reasonable relationship to the market value of assets (MVA), (2) recognize investment gains and losses over an appropriate time period, and (3) avoid systematic bias that would overstate or understate the AVA in comparison to MVA.

ASRS Plan and LTD Program

The actuarial valuations of the ASRS Plan and the LTD Program currently utilize a smoothed asset valuation method that immediately recognizes income equal to the expected return on market value of assets, based on the assumed valuation interest rate (8.00%). Differences between the assumed investment return and the actual market investment return are recognized over a ten-year period. The 10-year smoothing was implemented as of June 30, 2002 for the ASRS Plan and as of June 30, 2006 for the LTD Program. The AVA is not constrained to be within a "corridor" around the MVA.

We believe that that the asset valuation method for the ASRS Plan and the LTD Program comply with ASOP No. 44. Additionally, the method is reasonable and appropriately applied for the valuation.

ASRS System

The Plan currently uses the MVA as the AVA in the annual valuation (i.e., no smoothing). An actuarial valuation based on the MVA has the advantage of using an asset value that is the same as the amount shown in financial reports. It also eliminates the need to explain the use of an asset value other than market value for making decisions regarding benefit enhancements.

Most importantly, the benefits payable by the ASRS System are intended to change annually (theoretically "up" or "down") with the funded status of the plan. As a result, the use of MVA to determine the annual funded status of the ASRS System is the most appropriate asset method.

We believe that that the asset valuation method for the ASRS System complies with ASOP No. 44. Additionally, the method is reasonable and appropriately applied for the valuation.

Summary

We believe that the actuarial methods are reasonable and appropriately applied. As a result, we have no recommendations regarding the application of the actuarial methods.

SECTION V

FUNDING POLICY AND FINANCIAL OBJECTIVES

Funding Policy and Financial Objectives

In funding defined benefit pension plans, governments must satisfy a range of objectives. In addition to the fundamental objective of funding the long-term costs of promised benefits to plan participants, governments also work to: (1) keep employer's contributions relatively stable from year to year; (2) allocate pension costs to taxpayers on an equitable basis; and (3) manage pension risks.

The actual contribution rates to the ASRS Plan and the LTD Program are actuarially determined contributions such that the actuarial accrued liability is expected to be fully funded at a future date. When contribution rates are actuarially determined, the resulting contribution rate is comprised of two components, a normal cost rate and an amortization percentage. The normal cost rate is the theoretical percentage of pay that would be required to fund the member's benefits that are expected to be earned over the subsequent year if the retirement program's experience exactly followed the actuarial assumptions. The normal cost of the plan is the weighted average cost of providing benefits to all the active members in the retirement program. For the ASRS Plan, the normal cost is expected to gradually decrease in future years as the number of members hired on or after July 1, 2011 (and earning a less valuable benefit) grows.

The amortization amount is the cost of financing the difference between the actuarial accrued liability and the actuarial value of assets. The methods for determining the amortization amount, such as the amortization period, are dictated by the Board's funding policy.

The sum of these two cost components provides the total contribution rate to the ASRS retirement programs. The rates applicable to the employer are the total rates less the member contribution rates.

The Board outlined their financial objectives for the retirement programs when the Board adopted new amortization periods at the November 2013 Board meeting. Specifically, the Board adopted a closed 30-year amortization period with level-dollar payments for the 401(a) portion of the ASRS Plan. Similarly, the Board adopted a closed 15-year amortization period with level-dollar payments for the LTD Program and the 401(h) portion of the ASRS Plan. ASRS does not have formal written funding policies for these programs, but the amortization periods adopted by the Board are the first and most important step of funding the long-term costs of the promised benefits.

Adoption of Formal Written Funding Policy

Developing a written funding policy can help decision-makers understand the tradeoffs involved in reaching these goals and document the reasoning that underlies their decisions. By clarifying the funding policy, decision-makers can come to a better understanding of the principles and practices that produce sustainable benefits.

We recommend that ASRS adopt a formal funding policy. This policy would codify the decisions already made by the Board and the reasons behind the decisions. Additionally, the funding policy can document the steps taken to manage pension risks. In an effort to keep the employer's pension contribution relatively stable from year to year, a funding policy should: (1) identify key risk areas that add to contribution volatility and (2) identify ways to manage each of those risks.

In 2012, GRS published a Research Report titled “Developing a Pension Funding Policy for State and Local Governments.” We have included this Report in the Appendix for your reference. This Report provides a framework for developing a robust funding policy.

Financial Objectives

The financial objectives for the ASRS Plan (pension and health benefits) and the LTD Program are to (1) maintain reasonably stable contribution rates, and (2) achieve an ultimate funded status of 100%.

If the participating employers of ASRS adhere to the current funding policy, then we expect the funded ratio to gradually improve and eventually attain a 100% funded ratio. We believe that the Board’s funding policy is an appropriate balance of cost stability and maintaining intergenerational equity. This funding policy is also consistent with the principles and objectives recommended by the Government Finance Officers Association (GFOA) in a report they issued in 2013 regarding funding policies for defined benefit plans, as well as the Actuarial Funding Policies for Public Pension and OPEB Plans issued by the Conference of Consulting Actuaries Public Plans Committee in February 2014.

However, there are a few aspects of the current funding policy that should be noted.

Procedures for Calculating Actuarially Determined Contributions

As part of the most recent actuarial experience study, the Board adopted two modifications to the procedures for calculating the actuarially determined contributions.

First, the contribution rates are now calculated based on the assumption that the contributions are paid throughout the fiscal year (previously they were assumed to be paid at the beginning of the fiscal year). We believe that this is a very sound procedure for calculating the contribution rates.

Additionally, the actuarially determined contributions are now reduced by the expected Alternate Contribution for the upcoming year. We believe that this is a reasonable procedure, especially given the magnitude of the historical Alternate Contributions. This offset will be very sensitive to the number of return-to-work retirees and the provisions of the return-to-work program within ASRS. It will be important for the Board and the retained actuary to always consider the possible impact of plan design and demographic changes on this contribution source when projecting future contribution rates.

Contribution Lag

There is a one-year lag between the valuation date and the effective date of the contribution rate. For instance, the actuarial valuation results as of June 30, 2013 are used to calculate the contribution rate necessary to meet the Board’s funding policy. However, this contribution rate will not become effective until July 1, 2014. This lag is a common occurrence when retirement programs are funded by actuarially determined contributions so that the retirement system and the employers have time to implement the contribution rate changes in advance of the effective date.

The current procedures produce a small disconnect between the funding policy and the calculation of the necessary contributions by the retained actuary. When the contribution rates are calculated as of June 30, 2013, it is known for certain that the retirement program will receive a different rate of

contribution during the lag period (between the valuation date and the effective date of the contribution). For instance, the June 30, 2013 actuarial valuation indicates that the contribution rate necessary to meet the Board's funding policy must be 22.96% of pay for the ASRS Plan. However, it is known that the contribution rate will only be 22.60% of pay during the lag period from July 1, 2013 through June 30, 2014. As a result, the ASRS plan will receive 0.36% of pay (approximately \$31.5 million) less than it needs in order to meet the goals of the Board's funding policy for fiscal year 2014. Even if all actuarial assumptions are met, the future contribution rates will have to increase in order to make up for the \$31.5 million contribution shortfall during the lag period.

We believe that the calculated contribution rates would better achieve the Board's funding policy by incorporating the known contribution differences during the lag period. In most years, this proposed change should not have a material impact on the calculated contribution rates. If this updated procedure was adopted for the June 30, 2013 actuarial valuation, the increase in the necessary contributions effective for the fiscal year beginning July 1, 2014 would be approximately \$3 million. However, this procedure could have a material impact on the contributions in years in which the retirement program realizes significant changes in the funded status (through actuarial gains/losses, assumption changes, etc).

Normal Cost for New Hires

As part of each actuarial valuation, the retained actuary calculates a normal cost rate that represents the normal cost for the upcoming year, stated as a percentage of pay. This normal cost rate is calculated for the June 30, 2013 actuarial valuations by taking the normal cost for the upcoming year for active members on the valuation date and dividing by the projected payroll for the upcoming year.

It is important to note that the projected payroll for the upcoming year includes the expected pay for the active members on the valuation date as well as the pay for new hires assumed to replace the current active members assumed to leave active service during the upcoming year. We believe that there is a disconnect between the members included in the normal cost calculation (the numerator or the normal cost rate calculation) and the members included in the projected payroll (the denominator).

We believe that this approach understates the normal cost rate.

When the actuarially determined contributions are based on the normal cost rate, as calculated by the retained actuary for the June 30, 2013 actuarial valuation, the contributions received by the retirement program will only be allocated to the normal cost associated with active members on the valuation date. None of the contributions received by the retirement program will be allocated to the normal cost for the new hires during the partial year that they are assumed to accrue benefits.

When no contributions received by the retirement program are allocated to the normal cost for members in their year of hire, then there will be an actuarial loss each year in the actuarial valuation due to new entrants. This new entrant loss can be seen, in part, on Page 31 of the June 30, 2013 actuarial valuation report for the ASRS Plan. Specifically, the actuarial loss for "new entrants/rehires" was \$97 million for the prior fiscal year and a total of \$401 million for the past five years. It should be noted that, since this actuarial loss also includes the losses associated with rehires, losses strictly associated with new hires should be less. When this new entrant normal cost is incorporated into the actuarial valuation through an actuarial loss, the liability is added to the existing unfunded actuarial

accrued liability and funded over the current amortization period (30 years as of June 30, 2013 for the 401(a) benefits).

It is important to note that the liability associated with the new entrant normal cost will ultimately be included in the actuarial valuation. However, we believe that the most appropriate approach would be to incorporate the new entrant normal cost into the calculation of the normal cost rate for the upcoming year. This approach allocates the cost of new hires to the period where they provided services to taxpayers, prevents the deferral of the costs, and keeps the contribution rates more stable.

The retained actuary could address this disconnect in a number of ways. A few examples are:

- The calculation of the normal cost rate would only include normal cost and projected pay for active members on the valuation date based on a modified projected payroll.
 - Normal Cost (numerator): same normal cost for active members on the valuation date
 - Modified Projected Payroll (denominator): retained actuary would calculate a modified projected payroll only for the active members on the valuation date, which would only include pay for the portion of the year that the active members are assumed to work.
- The calculation of the normal cost rate would include normal cost and projected pay for active members on the valuation date and new entrants based on a modified normal cost.
 - Modified Normal Cost (numerator): retained actuary would develop an estimate for the normal cost of new entrants during the year and add the estimate to the normal cost for the active members on the valuation date
 - Projected Payroll (denominator): same projected payroll for active members on the valuation date and expected new entrants
- The actuarial cost method could be modified such that each member's benefits are attributed over a period that begins with the first valuation that the member is included in the actuarial valuation. In other words, the application of the actuarial cost method would result in a zero accrued liability on the member's first valuation date and a zero normal cost in the first fractional year of a member's participation in the retirement program.

Each of these proposed solutions will increase the resulting normal cost rate, but they will all eliminate the actuarial losses that occur each year as a result of the new entrants.

Financial Objectives of the ASRS System

According to the ASRS System's June 30, 2013 actuarial valuation report, the Arizona Attorney General issued an opinion letter on November 24, 2009 stating that System benefits cannot be "diminished or impaired" as defined under Article 29 of the Arizona Constitution. It is our understanding that the Board has adopted the Attorney General's opinion letter.

Prior to the Attorney General's opinion letter, the provisions of the ASRS System allowed the Board to modify the benefits (up or down) paid by the retirement program in order to maintain a funded status between 95% and 105%.

The only contributions to the ASRS System now are the current 7% of pay contributions (by the employer and the member) for the few remaining active members. If all of the actuarial assumptions are met, the ASRS System will run out of money before all of the benefits are paid. However, assets

are being accumulated in the ASRS Plan to guarantee the benefits of members who retired on or after July 1, 1981 from the ASRS System.

As long as the State continues to guarantee the benefits payable to ASRS System members who retired prior to July 1, 1981, then the objective of paying all promised benefits of the ASRS System is being met. As of June 30, 2013, the benefits payable to ASRS System members who retired prior to July 1, 1981 were underfunded by \$68,234.

Summary

We believe that the funding policy is being reasonably applied and the financial objectives of the retirement programs are being met.

We recommend that ASRS Board consider adopting a formal funding policy which would codify the decisions already made by the Board and the reasons behind the decisions. Additionally, the funding policy can document the steps taken to manage pension risks.

We also recommend that the retained actuary discuss with the Board possible adjustments to the contribution calculation that will eliminate the current disconnects resulting from (1) the different contribution rates during the lag period, and (2) the calculation of the normal cost rate. The current approach to calculating funding policy contributions will eventually incorporate these elements. However, we believe that these adjustments will allocate the contributions to the most appropriate period of time.

SECTION VI

ACTUARIAL VALUATION RESULTS

Actuarial Valuation Results

Benefits

Every employer is different and every employer's retirement plan is different. Each employer has a set of workforce and financial needs that dictate the type of retirement benefit that is most appropriate for their employees. Additionally, the amount of resources available to allocate to the retirement plan will dictate the level of benefits provided by the retirement plan. Regardless of the reasons for the benefit design, the employer must understand the liability and contribution requirements associated with the benefits promised. As a result, the actuarial valuation and the resulting funding policy contribution must properly reflect the benefit structure of the retirement plan.

In general, the benefits promised by ASRS through the Plan, the System and the LTD Program were reasonably incorporated in the actuarial valuations of these programs.

Data

As part of our actuarial audit, we received a preliminary set of census data for plan participants and beneficiaries as of June 30, 2013 originally provided by ASRS to the retained actuary for the actuarial valuations. Additionally, we received a final set of census data for plan participants and beneficiaries as of June 30, 2013 used by the retained actuary for the actuarial valuations. Finally, we received a copy of the data questions from the retained actuary with ASRS responses.

We used this data, along with the census summaries included the valuation reports, to review the valuation data process. In addition, we received the retained actuary's procedures for pay smoothing for active members and valuing the deferred vested members.

In total, we believe that the final valuation data used by the retained actuary is reasonable and valid for its purpose.

Actuarial Valuation Results

To verify the accuracy of the retained actuary's valuation results, GRS performed independent valuations, as of June 30, 2013, of the following plans:

- ASRS Plan (pension and health benefits)
- ASRS System (pension and health benefits)
- Long Term Disability Program

The replication valuations were based on the final valuation data provided by the retained actuary. The replication uses the same methods and procedures that were used by the retained actuary. The results show that the retained actuary's numerical results are reproducible within acceptable tolerance ranges.

Generally accepted actuarial standards and practices provide actuaries with the basic mathematics and frameworks for calculating the actuarial results. When it comes to applying those actuarial standards to complex calculations, differences may exist due to individual opinion on the best way to make those complex calculations. This may lead to differences in the calculated results, but these differences

should not be material. Generally, differences in actuarial liabilities of 5% or less are considered within acceptable tolerance ranges.

As the following tables show, our replications of the retained actuary's valuation results are all less than 2%. As a result, we believe that the actuarial accrued liabilities presented in the retained actuary's valuation reports provide a reasonable representation of the actuarial accrued liability based on the stated assumptions, methods and procedures.

	GRS REPLICATION			FINAL JUNE 30, 2013 VALUATION		
	401(a) Account	401(h) Account	Total	401(a) Account	401(h) Account	Total
<u>Total Present Value of Benefits</u>						
Active Members	22,986,625,643	820,713,859	23,807,339,502	22,890,415,225	828,368,548	23,718,783,773
Inactive Members	1,562,656,891	47,029,537	1,609,686,428	1,613,619,133	47,018,704	1,660,637,837
Retired Members and Beneficiaries	22,417,092,986	702,297,782	23,119,390,768	22,398,414,156	694,187,656	23,092,601,812
Disabled Members*	872,528,460	38,906,473	911,434,933	871,779,172	38,925,197	910,704,369
Other-Than-Plan Members	1,578,432	5,224,216	6,802,648	1,650,427	5,618,364	7,268,791
Post-1981 System Members	412,704,278	0	412,704,278	412,582,843	0	412,582,843
TOTAL	48,253,186,690	1,614,171,867	49,867,358,557	48,188,460,956	1,614,118,469	49,802,579,425
<i>Difference</i>	<i>0.1%</i>	<i>0.0%</i>	<i>0.1%</i>			
<u>Actuarial Accrued Liability</u>						
Active Members	14,659,399,217	693,792,699	15,353,191,916	14,613,709,501	699,070,334	15,312,779,835
Inactive Members	1,562,656,891	47,029,537	1,609,686,428	1,613,619,133	47,018,704	1,660,637,837
Retired Members and Beneficiaries	22,417,092,986	702,297,782	23,119,390,768	22,398,414,156	694,187,656	23,092,601,812
Disabled Members*	872,528,460	38,906,473	911,434,933	871,779,172	38,925,197	910,704,369
Other-Than-Plan Members	1,578,432	5,224,216	6,802,648	1,650,427	5,618,364	7,268,791
Post-1981 System Members	412,704,278	0	412,704,278	412,582,843	0	412,582,843
TOTAL	39,925,960,264	1,487,250,707	41,413,210,971	39,911,755,232	1,484,820,255	41,396,575,487
<i>Difference</i>	<i>0.0%</i>	<i>0.2%</i>	<i>0.0%</i>			
Normal Cost (beginning of year)	1,104,383,373	32,172,038	1,136,555,411	1,099,143,459	32,745,588	1,131,889,047
<i>Difference</i>	<i>0.5%</i>	<i>-1.8%</i>	<i>0.4%</i>			

* Includes disabled members currently receiving of benefits from the Plan as well as disabled members currently receiving benefits from the LTD Program and eligible for deferred benefits from the Plan.

	GRS REPLICATION	FINAL JUNE 30, 2013 VALUATION
	<u>System Valuation</u>	
<u>Actuarial Accrued Liability</u>		
Active Members	17,413,339	17,413,339
Inactive Members	12,675,602	12,675,602
Non-Members	3,294,486	3,294,486
Retirees**	399,648,020	399,517,054
TOTAL	433,031,447	432,900,481
<i>Difference</i>	<i>0.0%</i>	
	<u>LTD Program</u>	
<u>Actuarial Accrued Liability</u>		
Active Members***	129,989,928	132,870,587
LTD Retirees	199,170,325	199,726,230
TOTAL	329,160,253	332,596,817
<i>Difference</i>	<i>-1.0%</i>	
Normal Cost (beginning of year)	15,256,352	15,312,600
<i>Difference</i>	<i>-0.4%</i>	

** Includes liability for benefits guaranteed by the State and by the Plan.

*** Includes liability for IBNR.

As part of our replication valuation, GRS requested sample participant calculations from the retained actuary to ensure that the retained actuary valued the correct benefit levels, used the correct assumptions, and calculated the liabilities correctly on an individual basis. The requested sample participants included active and inactive members from the ASRS Plan, ASRS System and the LTD Program.

There are a few issues that were discovered during the replication process and subsequent review of the sample participants. These issues will be discussed below.

Active Members. At the onset of the review, we requested that the retained actuary provide sample liability calculations for active members in the ASRS Plan, ASRS System and the LTD Program. The retained actuary provided enough detail to show probabilities of decrement by age, estimated pay and benefits by age, and values of benefits or pay by age for each decrement in sufficient detail to verify the calculation of the present value of benefits, present value of pay, accrued liability and normal cost for the sample calculations requested.

We have previously noted our comments on the application of the actuarial cost method (Section IV) and the actuarial assumptions (Section III). We identified one additional element of the actuarial valuation of active members in the ASRS Plan that the retained actuary should consider for future actuarial valuations.

Actual Pay History – The retained actuary receives five years of historical salary from ASRS each year as part of the actuarial valuation process. The retained actuary uses the prior two years of actual pay to calculate a “smoothed average pay” that is used to project a member’s pay into the future. However, the retained actuary does not use the actual historical pay to calculate a member’s current final average pay. The use of historical pay would only have an

impact on the projected benefits payable to members that are assumed to terminate with a vested benefit or retire over the first few years following the valuation date. In most cases, after the first few years following the valuation date, the member's actual historical pay would not factor in to the calculation of the member's projected benefits.

It is not uncommon to disregard the actual pay history when performing an actuarial valuation, but the use of actual pay history has become more notable since the recent recession and resulting flat salaries. We recommend that the retained actuary consider the use of actual pay history in the calculation of a member's final average salary.

We do not believe that this change will have a material impact on the actual valuation but we believe this approach would make better use of the data elements provided by ASRS.

Based on our review of the other aspects of the actuarial valuation, the liability determination of active participants was reasonable and appropriately determined for the ASRS Plan, the ASRS System and the LTD Program.

Inactive Members. At the onset of the review, we requested that the retained actuary provide sample liability calculations for inactive members that are due a benefit from the ASRS Plan and the ASRS System. The retained actuary provided enough detail to verify the liability amount, benefit amount, form of benefit, age of participant, and age of beneficiary (where applicable) for the sample calculations requested.

Based on our review, the liability determination of inactive members in the ASRS Plan and the ASRS System was reasonable and consistent with the stated assumptions and methods.

Annuitants. At the onset of the review, we requested that the retained actuary provide sample liability calculations for members currently receiving benefits in the ASRS Plan, ASRS System, and the LTD Program. The retained actuary provided enough detail to verify the liability amount, benefit amount, form of benefit, age of participant, and age of beneficiary (where applicable) for the sample calculations requested.

We identified a few elements of the actuarial valuation of annuitants in the ASRS Plan that the retained should update for future actuarial valuations.

Pension Benefits Payable to Other-than-Plan Retirees – We reviewed one sample life where the liability of a 99-year-old retiree was being calculated based on a life annuity where the first three years were guaranteed (immediate 3-year certain-and-life payment form). The retained actuary confirmed that the annuitant should not have been valued with guaranteed payments since the member had been retired for more than three years. Additionally, the retained actuary reviewed their valuation for the remainder of this group and confirmed that updating the actuarial valuation for this entire group would result in a \$77,210 decrease to the Other-than-Plan pension liabilities.

Health Benefits Payable to Other-than-Plan Retirees – We reviewed one sample life where the liability of an annuitant was calculated based on an actuarial valuation date of June 30, 2012. The retained actuary confirmed that the annuitant was valued with an incorrect valuation date. Additionally, the retained actuary reviewed their valuation for the remainder of this group and

confirmed that updating the actuarial valuation for this entire group would result in a \$193,529 decrease to the Other-than-Plan health benefit liabilities.

As indicated, the impact of these annuitant changes on the actuarial valuation is not significant but they should be corrected for future actuarial valuations. Based on our review of the other aspects of the actuarial valuation, the liability determination of annuitants was reasonable and appropriately determined for the ASRS Plan, the ASRS System and the LTD Program.

Summary

We believe that the actuarial valuation results were developed in a reasonable manner. In the next actuarial valuation, we recommend that the retained actuary incorporate actual pay history into their valuation of active participants and update the actuarial valuation of the Other-than-Plan retirees.

SECTION VII

CONTENT OF THE VALUATION REPORT

Content of the Valuation Report

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs, provides guidance for performing actuarial valuations of pension plans, and ASOP No. 41, Actuarial Communications, provides guidance for communicating the results. These Standards of Practice list specific elements to be included, either directly or by references to prior communication, in pension actuarial communications. The pertinent items that should be included in an actuarial valuation report on a pension plan should include:

- The name of the person or firm retaining the actuary and the purposes that the communication is intended to serve.
- A statement as to the effective date of the calculations, the date as of which the participant and financial information were compiled, and the sources and adequacy of such information.
- An outline of the benefits being discussed or valued and of any significant benefits not included in the actuarial determinations.
- A summary of the participant information, separated into significant categories such as active, retired, and terminated with future benefits payable. Actuaries are encouraged to include a detailed display of the characteristics of each category and reconciliation with prior reported data.
- A description of the actuarial assumptions, the cost method and the asset valuation method used. Changes in assumptions and methods from those used in previous communications should be stated and their effects noted. If the actuary expects that the long-term trend of costs resulting from the continued use of present assumptions and methods would result in a significantly increased or decreased cost basis, this should also be communicated.
- A summary of asset information and derivation of the actuarial value of assets. Actuaries are encouraged to include an asset summary by category of investment and reconciliation with prior reported assets showing total contributions, benefits, investment return, and any other reconciliation items.
- A statement of the findings, conclusions, or recommendations necessary to satisfy the purpose of the communication and a summary of the actuarial determinations upon which these are based. The communication should include applicable actuarial information regarding financial reporting. Actuaries are encouraged to include derivation of the items underlying these actuarial determinations.
- A disclosure of any facts which, if not disclosed, might reasonably be expected to lead to an incomplete understanding of the communication.
- Cautions about any risk or uncertainty in the results of the actuarial valuation.

Our review of actuarial valuation reports includes the June 30, 2013 valuation report for the ASRS Plan, the ASRS System, and the LTD Program. The actuarial valuation reports complied with the applicable Actuarial Standards of Practice and thoroughly communicated the assumptions, methods and plan provisions incorporated into the June 30, 2013 actuarial valuations. The communication of the actuarial valuation results was well organized and provided stakeholders sufficient information to understand how the contribution rates were calculated.

We have noted a few modifications to the ASRS Plan actuarial valuation report that would allow the report to better comply with ASOP Nos. 4 and 41 as well as to more clearly communicate the components of the actuarial valuation.

Actuarial Disclosures

ASOP No. 41 indicates that “the actuary should consider what cautions regarding possible uncertainty or risk in any results should be included in the actuarial report.” The actuarial valuation reports for the ASRS System and the LTD Program include the following statement:

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for those measurements, and changes in plan provisions or applicable law. Due to the limited scope of this report, Buck performed no analysis on the potential range of such future measurements.

We would recommend that the retained actuary incorporate a similar statement into the ASRS Plan actuarial valuation report in order to address the risk and uncertainty and to better comply with ASOP No. 41.

References to Disabled Members throughout the Actuarial Valuation Report

There are two distinct groups of disabled members that participate in the ASRS Plan. These two groups are:

- Disabled members that are currently receiving benefits from the LTD Program and are eligible for a deferred benefit from the ASRS Plan, and
- Disabled members that are currently receiving an annuity from the ASRS Plan.

The references to these groups (whether they are separate or combined) are not consistent throughout the actuarial valuation report. We recommend that the retained actuary review all of the references in the actuarial valuation report to either (or both) of these groups and ensure that the groups are referenced in a consistent manner throughout the report.

Section 8, GASB Disclosure and CAFR Information

On page 42, as part of the Actuarial Certification, the actuarial valuation report states: “The funding method is the projected unit-credit method as prescribed in Arizona Revised Statutes Section 38.757A.”

We believe that this statement would be more appropriate stated similar to the following: “The funding method is the projected unit-credit method as prescribed in Arizona Revised Statutes Section 38-737.”

Section 9, Summary of Actuarial Methods and Assumptions

The presentation of actuarial methods and assumptions is generally complete and understandable. The methods described in this section are reasonable and appropriate for public retirement plans.

We do have the following suggestions to improve the overall communication of the valuation methods and assumptions.

Post-Retirement Mortality for Active Members – The healthy post-retirement mortality assumption is dependent on the amount of the annual benefit payable to the member. For active members, the retained actuary incorporates a simplifying assumption that applies the healthy post-retirement mortality assumption “with no adjustments for small or large benefits” to all future termination and retirement annuity benefits. It would improve the overall communication of mortality assumption in the actuarial valuation report if the retained actuary disclosed this simplifying assumption.

Post-Retirement Assumption for Other-than-Plan Retirees – Other-than-Plan Retirees are receiving historical COLA increases and health supplements from the ASRS Plan while also receiving their primary benefit from the ASRS System. The “benefit category” for post-retirement mortality purposes for this group is based on the sum of all pension benefits payable to these members from the ASRS System and the ASRS Plan. It would improve the overall communication of mortality assumption in the actuarial valuation report if the retained actuary clarified how the “benefit category” was determined for this group.

Actuarial Value of Assets – Since the ASRS Plan guarantees a portion of ASRS System benefits, a corresponding portion of the ASRS System liabilities and assets are included in the actuarial valuation (and resulting contribution calculation) for the ASRS Plan. The valuation reports for the ASRS Plan and the ASRS System both clearly indicate the market value of assets that are attributable to the ASRS System benefits guaranteed by the ASRS Plan. The actuarial valuation of the ASRS Plan also includes a separate actuarial value of assets that is associated with these assets from the ASRS System. However, the actuarial valuation report for the ASRS System only provides the market value of assets. According to the retained actuary, the same 10-year smoothing method is applied to the assets in the ASRS System and a corresponding portion of the resulting actuarial value of assets is included in the actuarial valuation for the ASRS Plan. We recommend that the retained actuary include a description in the actuarial valuation report of the ASRS Plan of how the actuarial value of assets attributable to the ASRS System benefits guaranteed by the ASRS Plan are determined. To be completely thorough, the retained actuary could also consider showing the derivation of the actuarial value of assets for the ASRS System.

Section 11, Plan Provisions

The presentation of the major plan provisions is generally complete and understandable. We do have the following suggestion to improve the overall communication of the plan provisions.

Pre-Retirement Death Benefits – The plan provisions in the valuation report make it clear that the Board reduced the interest rate to be credited on the withdrawal of contributions from 8% to 4%, effective June 30, 2005, and from 4% to 2%, effective June 30, 2013. However, the description of the Pre-Retirement Death Benefits should indicate that the interest rate credited on the balances paid to the beneficiaries of a pre-retirement death remained at 8%.

Summary

In general, the actuarial valuation reports complied with the applicable Actuarial Standards of Practice and thoroughly communicated the assumptions, methods and plan provisions incorporated into the June 30, 2013 actuarial valuations. In order to improve the overall ability of the reports to communicate these items, we recommend that the retained actuary incorporate the noted enhancements into future actuarial valuation reports.

SECTION VIII

ASRS PLAN DESIGN FEATURES

ASRS Plan Design Features

In November 2013, the results of the most recent Public Fund Survey were published. The Survey includes 126 of the nation's largest public retirement systems and is sponsored by the National Association of State Retirement Administrators and the National Council on Teacher Retirement.

We screened the survey data to identify retirement systems that were comparable to ASRS. Through this screening, we identified 10 statewide retirement systems (including ASRS) that cover general employees and teachers but do not cover public safety employees. These 10 retirement systems are scattered across the country, but three of the retirement systems (Colorado, Utah and Nevada) are in close proximity to Arizona.

The following tables will summarize the survey data for these 10 retirement systems. The responses for these 10 retirement systems are based on the results of their actuarial valuations for fiscal years ending in 2012.

Retirement Eligibility

Plan Name	Normal Retirement (age/svc)	Early Retirement (age/svc)
Arizona SRS	65/any, 62/10, Rule of 80; Rule of 85 for new hires after 6/30/11	50/5
Colorado State	65/5; hired before 7/1/05: 50/30, Rule of 80 w/min age 55; hired 7/1/05-12/31/06: any/35, Rule of 80	60/5, 55/20, 50/25
Delaware State Employees	62/5, 60/15, any/30; 65/10, 60/20, any/30 for employees hired after December 31, 2011	55/15, any/25
Kansas PERS	65/any, 62/10, Rule of 85; 65/5, 60/30 for those hired after 6/30/09	55/10
Mississippi PERS	60/4, any/25; 60/8 for those hired after 6/30/07; age 65/4, any/30 for employees hired after June 30, 2011	60/4 for employees hired after June 30, 2011
Nevada Regular Employees	65/5, 60/10, any/30; for new hires on or after 1/1/10: 65/5, 62/10, any/30	Participants may retire at any time once vested
Rhode Island ERS	Varies based on date of hire and retirement eligibility as of 9/30/09 and 7/1/12, new EEs are SSNRA/5	55/20
South Carolina RS	65/5, any/28; 65/8, Rule of 90 for employees hired after June 30, 2012	60/5, 55/25
Utah Noncontributory	any/30, 65/4; any/35 for new hires after 6-30-2012	any/25, 60/20, 62/10
Virginia Retirement System	65/5, 50/30; Rule of 90 for employees hired after June 30, 2010	50/10, 55/5; 60/5 for employees hired after June 30, 2010

ASRS has very similar Normal Retirement eligibility provisions to the entire comparison group. However, ASRS does have one of the more permissive Early Retirement eligibility provisions of the comparison group. Early Retirement at age 50, with five years of service, is a reasonable plan design feature, but it does stand out within this comparison group.

It should be noted that Nevada allows a terminated vested member to commence their benefit at any age with a 4% reduction in their accrued benefit for every year the member commences prior to their unreduced retirement age.

Benefit Determination

Plan Name	Benefit Multiplier	Post-Retirement Increase Provisions	Social Security
Arizona SRS	2.1% for first 20 years, 2.15% for 20 to 25 years, 2.2% for 25 to 30 years, and 2.3% for 30 or more years	Based on excess earnings above 8%, up to 4% annually	Yes
Colorado State	2.50%	Varies by date of retirement; automatic, generally, CPI up to 2%, compounded	No
Delaware State Employees	1.85%	Ad hoc as approved by the general assembly	Yes
Kansas PERS	1.75%	Ad hoc as approved by the legislature	Yes
Mississippi PERS	2.0% for the first 25 years and 2.5% for each year thereafter	Automatic 3%, simple, until age 55, then compounded thereafter. For new hires after June 2011, onset of compounding is delayed until age 60.	Yes
Nevada Regular Employees	2.5%, and 2.67% for svc earned after 7/1/01; for those hired on or after 1/1/10, 2.5%	After 3 years of receiving benefits, auto 2% annually, rising gradually to 5% annually, compounded, after 14 years of receiving benefits; COLA capped at 4% for employee hired on or after 1/1/2010	No
Rhode Island ERS	Varies based on dates of hire and retirement eligibility. For unvested (10 yrs) participants as of 7/1/05: 1.6% for first 10 yrs, 1.8% for yrs 11-20, 2.25% for yrs 21-26, 2.5% for yrs 26-30. New hybrid, effective 7/1/12, includes DB multiplier of 1.0%	Effective 7/1/12, risk-adjusted COLA targeting 2% annually, compounded. 5-year smoothed investment return less 5.5% with a 0% floor and 4% cap	Yes
South Carolina RS	1.82%	Lesser of one percent or \$500	Yes
Utah Noncontributory	2.00%; 1.75% for employees hired after June 30, 2011	For those hired before 7/1/11, automatic based on CPI up to 4%, simple. For those hired after 6/30/11, based on CPI to to 2.5%, simple.	Yes
Virginia Retirement System	1.70%; 1.65% for members not vested as of 1/1/2013	Automatic based on CPI up to 5%; 3% max for non-vested members as of 1/1/13	Yes

Amongst this comparison group, ASRS has the third-highest benefit multiplier. However, it should be noted that the members in the two retirement systems with higher benefit multipliers (Colorado and Nevada) are not covered by Social Security.

It is important to be aware of the membership's Social Security coverage when plan design features of two different retirement systems are being compared. The benefits paid by retirement systems, where their membership is also covered by Social Security, are not generally impacted by the Social Security Benefits. However, Social Security coverage means that the member and the employer are each contributing an additional 6.2% of pay to the Social Security Administration. These members will receive additional benefits in retirement, beyond the benefits payable by the retirement systems.

Contribution Rates

Plan Name	Employee Contribution Rate	Employer Contribution Rate	For FY Ended
Arizona SRS	10.74%	10.11%, plus 0.63% for the retiree health care benefit	6/30/2012
Colorado State	8.00%	15.65%	12/31/2012
Delaware State Employees	3.0% of earnings above \$6,000; 5% of earnings above \$6,000 for those hired after 2011	7.84%	6/30/2012
Kansas PERS	4.0% or 7.0%, depending on employee election	8.77% for state and school; 7.34% for local governments	6/30/2012
Mississippi PERS	9.00%	12.93%	6/30/2012
Nevada Regular Employees	12.25%, paid by employers for most members as a pre-tax cost-sharing plan, in lieu of salary increases or by salary reduction as certified by employers.	12.25%, paid by employers for most members as a pre-tax cost-sharing plan, in lieu of salary increases or by salary reduction as certified by employers.	6/30/2012
Rhode Island ERS	8.75% for state employees, 9.5% for teachers	22.98% for state employees; 22.32% for teachers	6/30/2012
South Carolina RS	6.50%	10.73%	6/30/2012
Utah Noncontributory	Non-contributory; those hired after 6/30/11 must pay any required contribution above the employer's statutory maximum contribution rate of 10%	16.04% to 18.76%; 17.38% as a weighted average	06/13/2013
Virginia Retirement System	5.00%	Rates vary by employer, with a weighted average of approximately 7%. School divisions and political subdivisions may elect to pick up the 5.00% member contribution on behalf of their employees.	6/30/2012

Even though ASRS has the third-highest benefit multiplier amongst this comparison group, the employer contribution rate and the total contribution rate are close to the middle of the comparison group. However, that member contribution rate is the second largest within this comparison group.

It should be noted that differences in actuarial assumptions, in addition to differences in plan design features, can impact the contribution rates.

Summary

Based on a comparison of 10 statewide public retirement systems with similar membership characteristics, ASRS has one of the larger benefit multipliers but only an average employer contribution rate. When comparing plan design features, it is important to keep in mind that the members of ASRS are also covered by Social Security.

SECTION IX
FINAL REMARKS

Final Remarks

The auditing actuarial firm, Gabriel, Roeder, Smith & Company (GRS), is independent of the retained actuarial firm. The auditing actuaries are not aware of any conflict of interest that would impair the objectivity of this work.

We have presented many suggestions for areas where we believe the product can be improved. The retained actuary has access to information and a long history of retirement plans similar to ASRS. We understand that the retained actuary may agree with some of our recommendations, while rejecting others. We ask that the retained actuary and ASRS consider our recommendations carefully. We hope that the retained actuary and ASRS find these suggestions useful.

APPENDIX

GRS RESEARCH REPORT

Developing a Pension Funding Policy for State and Local Governments

By David Kausch and Paul Zorn¹

Over the past decade, the Annual Required Contribution (ARC) as described in the Governmental Accounting Standards Board's (GASB's) Statements No. 25 and No. 27 has become a de facto funding policy for many public-sector retirement systems. The GASB is currently revising public pension accounting standards and has communicated an important message in the process: accounting standards are not funding standards. In the Exposure Drafts (EDs) of the new Statements No. 25 and No. 27, the GASB has removed all references to the ARC. At the same time, the EDs require disclosure of elements of a plan's funding policy and the actual funding pattern must be taken into account to determine the plan's financial disclosures. Now more than ever, public retirement systems need to have a sound, written funding policy to secure member benefits – and a strong funding policy may improve a plan's financial disclosures as well.

Funding Policy Goals

The idea of having a written funding policy is not new. In its Best Practice, “Sustainable Funding Practices of Defined Benefit Pension Plans,” the Government Finance Officers Association (GFOA) states that the main financial objective of public employee defined benefit plans is to fund the long-term costs of promised benefits to plan participants.² Moreover, the GFOA recommends that this be done through a systematic and disciplined accumulation of resources (i.e., contributions and related investment earnings) which are sufficient to the pay promised benefits to plan members over their lifetimes.

In addition to this objective, the GFOA's Best Practice cites other goals as well. To be consistent with the governmental budgeting process, efforts should be made to keep the employer's pension contributions relatively stable from year to year. Moreover, to satisfy the principle of intergenerational equity, pension costs should be allocated to taxpayers on an equitable basis over time, i.e., not pushed into the future or immediately imposed on current taxpayers. In addition, to help offset related risks, efforts may be made to provide a reasonable margin for adverse experience. Developing a written funding policy can help decision-makers understand the tradeoffs related to reaching these goals and document the reasoning that underlies their decisions. By clarifying the funding policy, decision-makers can come to a better understanding of the principles and practices that help sustain benefits over the long-term.

Risk-Management Framework

These funding principles can be thought of in a risk-management framework. In an effort to keep the employer's pension contribution relatively stable from year to year, a funding policy should: (1) identify key

¹ David Kausch is chief actuary for GRS and Paul Zorn is director of governmental research. The authors thank Brian Murphy, Theora Braccialarghe, Supriya Kopf, Lewis Ward, Danny White, Dana Woolfrey and Mary Ann Vitale at GRS for their thoughtful comments. However, the authors retain full responsibility for the accuracy of the information. Moreover, the views expressed do not necessarily represent those of GRS as an organization.

² Government Finance Officers Association, “Sustainable Funding Practices for Defined Benefit Pension Plans,” 2009.

risk areas that add to contribution volatility and (2) identify ways to manage each of those risks. The primary risk areas in funding retirement systems are investment risks, demographic risks within the covered population, benefit or plan design risks, and governance risks. In response to this:

- Investment risks can be managed with diversification of asset classes and asset smoothing.
- Demographic risks can be measured and managed through the use of regular actuarial valuations and actuarial experience studies.
- Benefit or plan design risks are often outside the purview of a retirement system's board, but may include setting the interest rate on member contributions and deciding when to provide ad-hoc COLAs or thirteenth checks.
- Governance risks can be managed with clear policies and controls regarding the major administrative practices of the retirement system.

A written funding policy addresses all of these risks and recognizes tradeoffs between mitigating contribution volatility and recognizing gains and losses over a reasonable period. To help decide these tradeoffs and document the reasoning behind the decisions, the GFOA's Best Practice recommends that plans adopt a written pension funding policy describing the principles and practices that guide the funding decisions. These would include: (1) the reasons for selecting the actuarial methods and assumptions, and (2) the policies related to risk sharing and responding to changes in plan experience. Key elements of a funding policy include decisions related to:

- Actuarial cost method and assumptions
- Asset valuation method
- Amortization method
- Funding target
- Risk management regarding:
 - Frequency of actuarial valuations,
 - Process for reviewing and updating actuarial assumptions,
 - Responding to legislative proposals and changes,
 - Responding to favorable/unfavorable investment experience,
 - Sensitivity analysis and forecasting, and
 - Asset/Liability modeling.

Elements to Consider in Developing a Funding Policy

Actuarial Cost Method

Different actuarial cost methods produce different patterns of normal costs and actuarial accrued liabilities. Some actuarial cost methods are more useful for determining contributions to an ongoing plan, and some are more useful for closed plans. While a detailed description of each cost method is beyond the scope of this report, the following three methods illustrate key distinctions. A more detailed discussion of actuarial cost methods is presented in Appendix A.

- Traditional Unit Credit (TUC) – Under this actuarial cost method, the normal cost for a given year reflects the increase in the benefit earned due to increases in service and salary for the year, but not to service and salary projected to be earned in future years. Generally, this method is not used to fund ongoing public pension plans.
- Projected Unit Credit (PUC) – Under this method, normal cost is calculated using benefits based on increases in service for the year, but with salary projected to the retirement date. This method is used by about 10% of public pension plans.

- Entry Age Normal (EAN) – Under this method, normal cost is calculated using benefits based on projected service and salary at retirement and is allocated over an individual’s career as a level percent of payroll. This method is used by about 75% of public pension plans.

Funding policy issues related to the actuarial cost method include:

- Is the cost method appropriate for the plan?
- Does the cost method produce normal costs that are reasonably stable and therefore consistent with the government’s budgeting process?

For ongoing plans, the popularity of the EAN cost method is not surprising given governments’ need to limit volatility in contribution rates. Moreover, since contribution rates are initially higher under the EAN method than other cost methods, the EAN method accumulates assets more quickly than the other methods. As a result, the assets can be invested earlier to help offset future contributions. By contrast, the TUC and PUC methods start with lower contributions which increase over time.

For closed plans, other actuarial cost methods may be more appropriate. The lack of new entrants into the plan and the shorter service lives of the remaining active members may make it appropriate to fund the plan more rapidly than under the EAN method. This could be done using the Aggregate actuarial cost method. The Aggregate cost method allocates the difference between the value of benefits and assets over the future service of the closed active population as a level percent of payroll.

Actuarial Assumptions

Actuarial assumptions also play a key role in determining the plan’s normal costs and actuarial accrued liabilities. The assumptions can be categorized into two groups: (1) economic assumptions (including inflation, wage growth, and long-term expected investment returns); and (2) demographic assumptions (including rates of mortality, disability, retirement, and termination). All assumptions should be consistent with Actuarial Standards of Practice and reflect professional judgment regarding future outcomes.

Although all assumptions are important, the investment return assumption plays an extremely important role in the actuarial valuation, and strongly influences the calculations of normal costs and actuarial accrued liabilities. For funding purposes, the Actuarial Standards Board’s Actuarial Standards of Practice (ASOP) No. 27 supports the use of discount rates based on the plan’s long-term expected investment return.³ Funding policy issues related to the discount rate include:

- Does the long-term expected investment return accurately reflect likely investment returns?
- What variations in the actual investment return will likely occur over the long-term?

In order for the actuarial valuation to properly fund the benefits, it is important that the discount rate accurately reflect the long-term investment return. If the assumption is too high, the contributions and actuarial liabilities determined by the valuation will be too low. If the assumption is too low, the contributions and actuarial liabilities will be too high. It is also important to understand that the assumption is intended to reflect an average expected return. In given years, actual returns will vary from the expected return.

³ Actuarial Standards Board, ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, May 2011.

Asset Valuation Method

The actuarial methods that are used to determine the plan's actuarial value of assets (AVA) also play a role in the funding policy. The difference between the actuarial accrued liability (AAL) and the AVA is the plan's unfunded accrued liability (UAL). To the extent that the plan has a UAL, it must be amortized and included in the contribution rate. Key funding policy issues related to asset valuations include:

- Should the actuarial value of assets be smoothed? If so, over what period?
- Should a corridor be applied to the smoothed value of assets to prevent it from diverging too far from the market value?

Smoothed vs. Market Value of Assets. Investment gains and losses are often “smoothed” into the AVA in order to mitigate the impact of investment volatility on employer contributions. In many cases, this is done by taking the difference between the actual annual investment earnings and the expected annual investment earnings and recognizing a portion of that difference each year over a set number of years. This evens out the impact of investment gains and losses that would otherwise be immediately recognized in the UAL.

Smoothing Period. In cases where assets are smoothed, the smoothing period is often 5 years, although some plans use shorter or longer periods. While the smoothing period for governmental plans is not limited by federal laws or regulations, the Actuarial Standards Board has set out principles for asset smoothing in ASOP No. 44.⁴ Under these principles, when a smoothed asset valuation method is used, the actuary should select a method so that:

- The smoothed asset values fall within a reasonable range of the corresponding market values; and
- Any differences between the actuarial value and market value of assets should be recognized within a reasonable period.

Asset Corridors. To satisfy these principles, many plans that smooth assets over periods longer than 5 years also include corridors that limit the extent to which the smoothed value of assets can diverge from the market value. Appendix B provides an illustration of how asset smoothing and asset corridors interact.

Amortization Method

In addition to the normal cost, the other major component of the annual contribution is the portion needed to amortize the UAL. Consequently, when setting the funding policy, the structure of the amortization payments and the length of the amortization period are important issues. It should also be noted that during the amortization period, interest accrues on the outstanding UAL at a rate reflecting the long-term expected investment return. In setting up an amortization policy, the following decisions should be made:

- Should the amortization period be open or closed?
- Should the amortization be on a level-dollar basis or a level-percent-of-pay basis?
- What should be the length of the amortization period?
- Should there be separate amortization bases for annual gains/losses, benefit changes, and other components of the UAL?

A key issue in setting the amortization policy is the possibility of negative amortization. This occurs when the amortization payments are less than the interest accrued on the UAL during the year, and so the outstanding UAL increases rather than decreases. However, this depends on the length of the amortization period, as well as assumptions related to expected investment return and payroll growth. It is important to

⁴ Actuarial Standards Board, ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*, May 2011.

note that while the UAL increases when there is negative amortization, it is typically not expected to increase faster than the projected rate of payroll growth and is expected to be fully paid by the end of the period. However, an open amortization period which allows negative amortization may be inconsistent with reaching a funding target of 100% in a reasonable period of time.

Closed Amortization vs. Open Amortization. Another issue is whether the UAL should be amortized over a closed amortization period or an open amortization period. If a closed amortization period is used, the UAL will be fully paid by the end of the period. By contrast, under an open amortization period, the period is reset each year. For example, under a 25-year open amortization period, the UAL is refinanced each year over a new 25-year period.

Closed amortization periods pay down the UAL more rapidly and limit negative amortization, but produce more volatility in the contribution rate as the period gets shorter. An open period results in a more gradual decline of the UAL and helps to control volatility in the contribution rate, but takes substantially longer to pay down the UAL. Moreover, an open amortization period is more likely to produce negative amortization, at least when the period is 15 to 20 years or longer. Appendix C provides illustrations of the amortization patterns under closed and open amortization periods.

Level-dollar vs. Level-percent-of-pay. Another issue is whether the UAL should be amortized on a level-dollar basis or as a level-percent-of-pay. Level-dollar amortization is similar to a fixed-rate home mortgage with a constant dollar payment. Level-percent-of-pay amortization initially has lower dollar payments, but these increase each year. Since level-dollar amortization pays a greater portion of the UAL in earlier years, it is more conservative than level-percent-of-pay amortization. However, level-percent-of-pay-amortization may be more consistent with the budgeting process of most governmental entities.

Length of the Amortization Period. Generally, for public pension plans, amortization periods range from 15 to 30 years, although some plans use shorter or longer periods. Shorter amortization periods result in the UAL being paid off sooner, but require higher and likely more volatile contributions. Longer amortization periods require lower contributions, but may shift some of the pension costs beyond the working careers of active employees and on to future generations.

Single Amortization vs. Separate Amortization Bases. So far the discussion of amortization has focused on amortizing the UAL as a whole over a single amortization period. This approach is straightforward, since there would be no need to track separate amortization bases. However, the UAL is made up of amounts that come from different sources, including: (1) actuarial gains and losses due to differences between actual and assumed plan experience, (2) benefit changes, and (3) changes in actuarial methods and assumptions. As a result, the plan may wish (or in some cases be required) to amortize the UAL from these sources over different periods. For example, changes in the UAL due to benefit changes could be amortized over a shorter period than changes in the UAL due to changes in actuarial assumptions. However, a disadvantage to using multiple amortization periods is that they may increase the volatility of contribution rates.

Funding Target

The funding target is the funded ratio that the plan is trying to reach and maintain through its funding policy. The GFOA's Best Practice "Sustainable Funding Practices for Defined Benefit Pension Plans" recommends a funding target of 100%. Setting the funding target to anything other than 100% means establishing a policy of making contributions that are greater or less than the amounts theoretically needed to fund the plan. However, funding targets of more than 100% may provide a margin for adverse experience. On the other hand, funding targets of less than 100% may help mitigate pressure for benefit increases.

Risk Management

As noted at the beginning of this report, there are a variety of risks associated with defined benefit plans, including investment risks, demographic risks, benefit design risks, and governance risks. To manage the risks, it is important to first identify the potential impact of a specific risk on plan funding, and then to identify ways to manage the risk. Pension funding policy should include a discussion of the steps needed to monitor and address the risks facing the plan.

Investment risks involve both the risks that investment returns will not meet actuarial expectations and that the volatility of the returns will make contribution rates difficult to budget. Generally, investment risks are managed through changes in asset allocations which, in turn, are based on asset allocation studies and asset/liability analyses. If changes are made to asset allocations, the long-term investment return assumption should also be reviewed and, if necessary, changed to reflect the new asset allocation.

Demographic risks involve the risks that the plan's actual experience related to mortality, retirement patterns, and other demographic factors do not match the actuarial assumptions. It is considered best practice to do experience studies at 5-year intervals to monitor and update the assumptions.

Benefit design risks include the risks that benefit changes will result in future contributions that are unaffordable for the sponsoring government. One way to examine these risks is to have an actuarial valuation of the benefit changes done before the changes are approved by the government, an approach recommended by the GFOA. Benefit design risks can also be examined using stochastic projections that compare future benefits with future contributions and investment returns, as well as scenario (stress) tests which examine changes in funding that result from specific changes in assumptions.

Changes in benefits may require a change in actuarial assumptions. For example, it may be necessary to lower the investment return assumption if benefit increases are based on favorable investment experience (i.e., actual investment returns that are higher than expected returns). As discussed in the section on actuarial assumptions above, the long-term investment return assumption reflects the actuary's estimate of the average return. Using excess earnings rather than additional contributions to provide increased benefits reduces the earnings available to pay current benefits. This, in turn, may require a lower investment return assumption be used, thereby increasing the actuarial accrued liability of the plan. Similarly, when investment gains result in lowered contributions, care should be taken to ensure the contributions do not fall to unreasonable levels.

Governance risks relate to the risks that the plan's administrative policies and procedures are appropriate for carrying out the functions of the plan. Funding policy can address governance risks by discussing the administrative structures that should be in place for monitoring compliance with the funding policy and ensuring that the actuarially determined contributions are made. In addition, funding policy can help ensure that the long-term costs of benefit changes are determined before legislative action is taken.

Conclusion

In funding defined benefit pension plans, governments must satisfy a range of objectives. In addition to the fundamental objective of funding the long-term costs of promised benefits to plan participants, governments also work to: (1) keep employer's contributions relatively stable from year to year; (2) allocate pension costs to taxpayers on an equitable basis; and (3) manage pension risks.

Developing a written funding policy can help decision-makers understand the tradeoffs involved in reaching these goals and document the reasoning that underlies their decisions. By clarifying the funding policy, decision-makers can come to a better understanding of the principles and practices that produce sustainable benefits.

Summary of Funding Policy Elements

Element	Policy Function	Issues to Address
Actuarial Cost Method	Determines accrual patterns of normal costs and actuarial accrued liabilities	<ul style="list-style-type: none"> • Is the actuarial cost method appropriate for the plan? • Does the cost method produce normal costs that are reasonable stable and consistent with the budgeting process?
Actuarial Assumptions	Determines the assumptions used in the actuarial valuation and other studies	<ul style="list-style-type: none"> • Does the long-term expected investment return accurately reflect likely investment returns? • How will actual investment returns likely vary from the assumed return over time? • Do the demographic assumptions, including the mortality assumptions, accurately reflect the ongoing experience of the plan? • How often should studies be done to evaluate the actuarial assumptions?
Asset Valuation Method	Determines the actuarial value of assets and, by extension, the unfunded accrued liability	<ul style="list-style-type: none"> • Should the actuarial value of assets be smoothed? If so, over what period? • Should an asset corridor be applied to prevent the smoothed value of assets from diverging too far from the market value?
Amortization Method	Determines the portion of the unfunded accrued liability that is amortized in the contribution rate each year	<ul style="list-style-type: none"> • Should the amortization period be open or closed? • Should it be on a level-dollar basis or level-percentage-of-pay basis? • What should be the length of the amortization period? • Should there be separate amortization bases for different components of the unfunded accrued liability?
Funding Target	Determines the funded ratio targeted by the funding policy	<ul style="list-style-type: none"> • Should the funding target be other than 100%?
Risk Management	Aligns the funding policy with the risk management framework	<ul style="list-style-type: none"> • How should risks be monitored with regard to investments, demographics, and plan design? • What actions should be taken to address the risks? • How should favorable investment experience be treated? • How should unfavorable investment experience be treated?
Governance	Monitors plan administration and contributions	<ul style="list-style-type: none"> • What administrative structures should be in place to monitor compliance with the funding policy and ensure actuarially determined contributions are made? • What governance structures should be in place so that the long-term costs of benefit changes are determined before legislative action is taken?

Appendix A – An Overview of Actuarial Cost Methods

In order to make sound decisions related to pension funding, it is important to understand how the actuarial cost methods work and how the employer’s actuarially determined contributions are calculated.

Present Value of Future Benefits

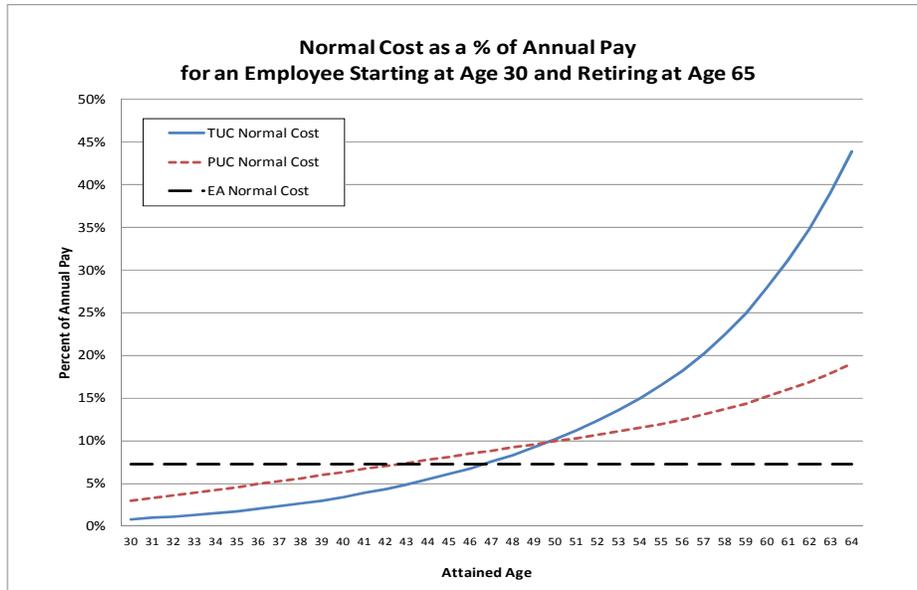
To determine the contributions needed to fund the plan, the value of benefits to be paid in the future must be converted to amounts as of the valuation date. This is done by projecting the future benefits owed to current plan members based on the plan’s benefit provisions and actuarial assumptions. These projected future benefits are then discounted using a rate that represents the expected long-term rate of investment return on plan assets. The resulting “projected value of future benefits” (PVFB) is the sum of the discounted values of the projected benefits. Essentially, this is the amount on the valuation date which, if invested at the discount rate, would pay all of the projected future benefits (provided the actuarial assumptions are met).

Normal Cost

An individual’s normal cost is the portion of the PVFB that is allocated to a given year of employee service under the actuarial cost method. The plan’s total normal cost in a given year is the sum of each individual’s normal cost for that year.

There are a variety of actuarial cost methods and different methods take different approaches to allocating the normal cost over an individual’s career. Chart 1 illustrates how normal costs vary under three actuarial cost methods: the Traditional Unit Credit (TUC) method, the Projected Unit Credit (PUC) method, and the Entry Age Normal (EAN) cost method. The three lines show the normal cost patterns for an individual employee who begins coverage under the plan at age 30 and retires at age 65, assuming the same benefit and same assumptions. The normal costs are shown as a percent of annual pay.

Chart 1



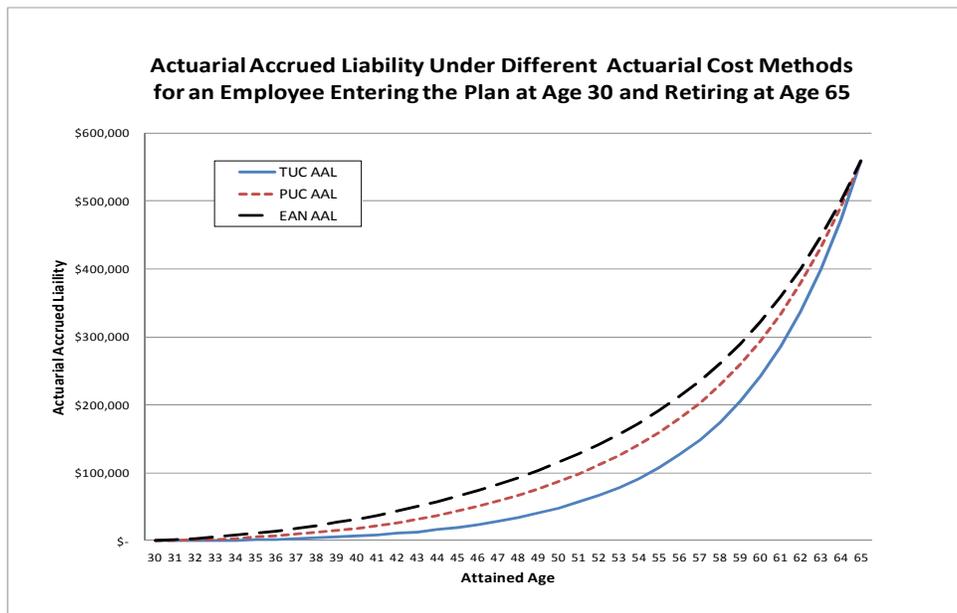
- The TUC method recognizes salary and years of service in the benefit only when earned. As a result, normal costs under this method increase at an accelerating rate as the employee approaches retirement age and as salary increases.

- The PUC method recognizes years of service when earned, but projects salary to retirement age. As a result, normal costs also increase under this method as an employee approaches retirement, but at a slower rate than under the TUC because future increases in salary are recognized in advance.
- The EAN cost method immediately recognizes both projected salary and service. As a result, it allows normal costs to be calculated as a level-dollar amount or as a level-percent-of-pay over the employee's career.

Actuarial Accrued Liability

The actuarial accrued liability (AAL) is the accumulated amount of the normal costs attributed to years of service before the valuation date. Given that the different actuarial cost methods result in different normal costs, it follows that they also result in different accrual patterns for the AAL over a member's employment. Chart 2 shows the accrued AAL for an individual employee who begins coverage under the plan at age 30 and retires at age 65. As with Chart 1, the three lines reflect the different actuarial costs methods applied to the same employee earning the same benefit under the same assumptions.

Chart 2



Since the employee will receive the same benefit at retirement, the actuarial cost methods converge to the same actuarial accrued liability. However, the paths they take are different.

- Under the TUC method, the AAL starts out low and increases over time as each year's accumulating salary and years of service are recognized in the AAL. Much of the AAL under the TUC is accrued in the last 5 years before retirement.
- Under the PUC method, the AAL increases somewhat more rapidly than under the TUC, but the PUC method still shifts recognition of much of the AAL toward the end of the employee's career.
- Under the EAN cost method, a larger portion of the AAL is recognized in earlier years, which in turn, helps provide for more level contribution rates over the employee's career.

Note that Chart 2 shows only the liability accrual pattern for one employee over time. The accrual pattern for the plan as a whole will depend on the age and service characteristics of all employees in the plan.

Appendix B – An Example of Asset Smoothing and Asset Corridors

As discussed in the report, investment gains and losses are often “smoothed” into the actuarial value of assets (AVA) in order to mitigate the impact of investment volatility on contributions. While most public plans use 5-year smoothing periods, plans that smooth over longer periods often use asset corridors to limit the extent to which the value of smoothed assets can diverge from the market value.

For example, under an “80/120” corridor, the smoothed value of assets is not allowed to fall below 80% or rise above 120% of the market value. This helps keep the actuarial value of assets within a reasonable range of the market value. However, during a major market decline or increase, the smoothed value of assets may exceed the corridor. If so, the amount of assets exceeding the corridor must be immediately recognized, adding to the volatility of the UAL and contributions.

Chart 3

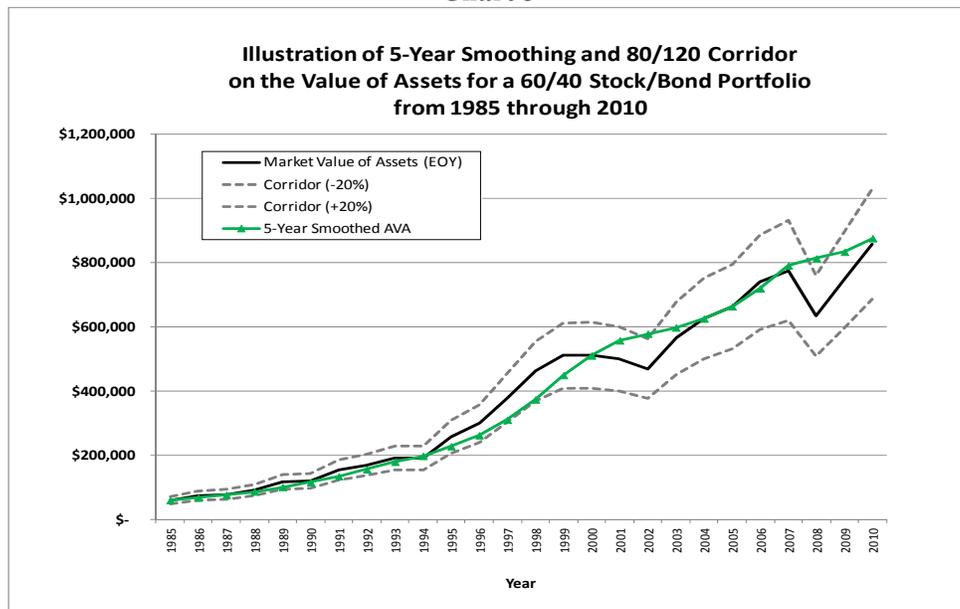


Chart 3 shows the growth of a hypothetical plan’s investment portfolio with a 60% mix of large cap stocks and a 40% mix of high-quality corporate bonds over the period from 1985 to 2010. The solid black line shows the market value of assets (MVA) at calendar year-end and the gray dotted lines show the 80/120 corridor boundaries. The green line (marked with triangles) shows the 5-year smoothed AVA.

Several things are interesting about the chart. First, during most of the 1990s, the 5-year smoothed AVA was below the MVA. This is because actual investment returns were substantially higher than expected returns for most of the decade, and the MVA outpaced the AVA. In fact, the 5-year smoothed AVA was very close to the 80% corridor in 1997 and 1998.

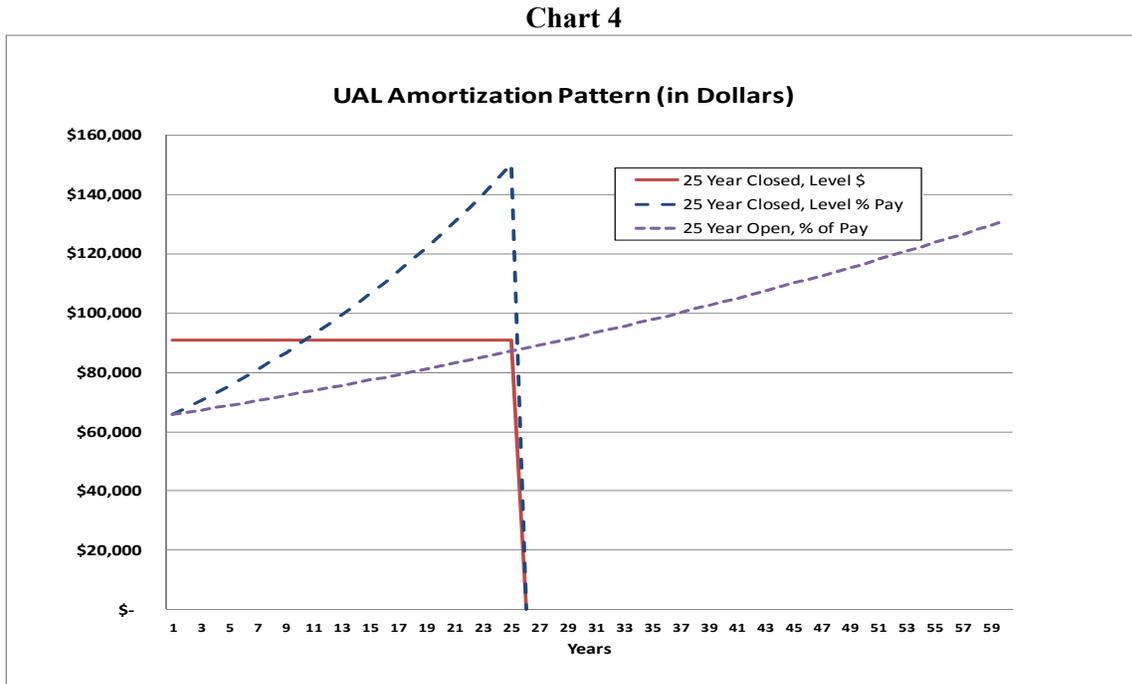
When the financial markets declined during 2000-2002, the 5-year smoothed AVA continued increasing, due to continued recognition of gains from the 1990s. When the financial markets picked up again in 2003, the asset losses from 2000-2002 offset part of the asset gains and the 5-year smoothed AVA moved closer to the MVA. However, the financial crisis of 2008 caused the MVA to decline sharply, causing a similar fall in the corridor boundaries. Consequently, in 2008, the 5-year smoothed AVA would have been greater than the upper boundary of the corridor. If the corridor had been in place, the plan would have had to lower its AVA to match the corridor’s upper boundary, increasing its UAL and the amount of the UAL amortized in its contribution rate.

Appendix C: Amortization Patterns under Closed and Open Periods

An important pension funding policy issue is whether the UAL should be amortized over a closed amortization period or an open amortization period. Closed amortization periods pay down the UAL more rapidly and limit negative amortization, but produce more volatility in the contribution rate as the period gets shorter. Open amortization periods help control volatility in the contribution rate, but take longer to pay down the UAL.

Another amortization issue is whether the UAL should be amortized on a level-dollar basis or as a level-percent-of-pay. Level-percent-of-pay amortization initially has lower dollar payments, but these increase each year. Since level-dollar amortization pays a greater portion of the UAL in earlier years, it is more conservative than level-percent-of-pay amortization. However, level-percent-of-pay-amortization is more consistent with the budgeting process of most governmental entities.

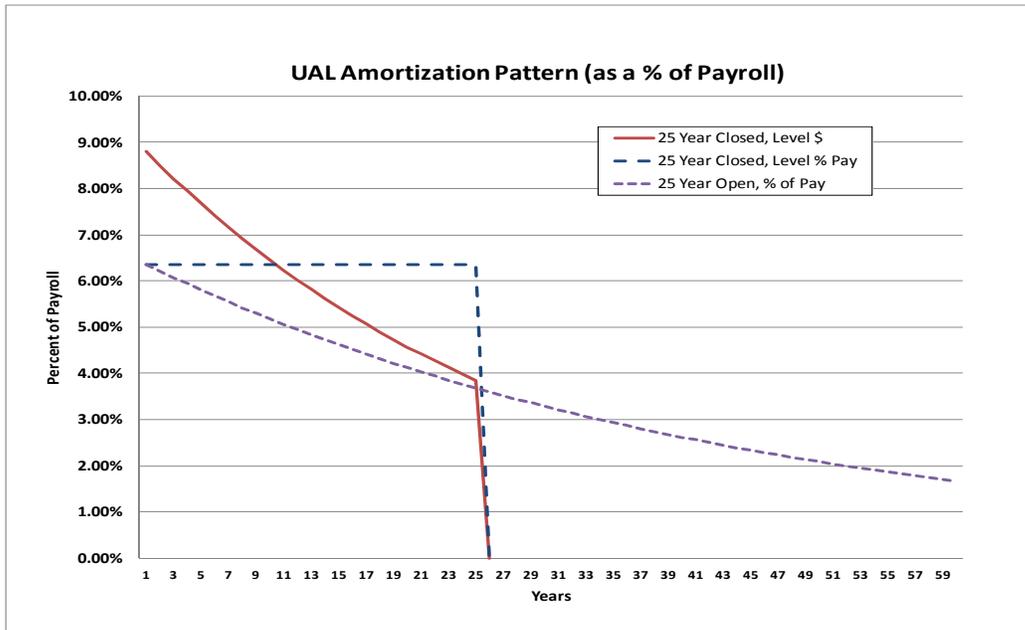
Chart 4 shows the UAL amortization patterns for: (1) a 25-year closed level-dollar amortization approach; (2) a 25-year closed level-percent-of-pay approach; and (3) a 25-year open percent-of-pay approach. The amortization payments are expressed in dollars.



- Under the closed, level-dollar approach, the dollar payments start higher than under the level-percent-of-pay approaches, and remain level until the end of the amortization period, at which time the UAL is completely amortized.
- Under the closed, level-percent-of-pay approach, the dollar payments are initially below the payments made under the level-dollar approach, but exceed the level-dollar payments after approximately 10 years, and ultimately become substantially more than the payments under the level-dollar approach.
- Under the open percent-of-pay approach, the dollar payments start at the same amount as the closed, level-percent-of-pay approach, and remain below the dollar payments under the closed approach. However they continue to increase even after the end of the 25-year period and may continue for several decades.

The dynamics appear different when the same amortization payments are expressed as a percentage of covered payroll, as in Chart 5:

Chart 5



From this perspective, the closed level-dollar payments decline rapidly as a percent of payroll. Under the closed level-percent-of-pay approach the payments remain level until they are fully amortized at the end of the period. However, under the open percent-of-pay approach, the amortization payments extend beyond the 25-year period and continue to decline for decades thereafter. The rate at which they fall depends on a number of factors, including the expected investment return and payroll growth assumption.

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. Nick Ponder, Government Relations Officer

DATE: October 14, 2014

RE: **Agenda Item #6:** Presentation, Discussion and Appropriate Action Regarding an Amendment to the Supplemental Retirement Savings Plan

Purpose

To present the Sixth Amended and Restated SRSP Plan Statement for Board approval.

Recommendation

Adopt the Sixth Amended and Restated Plan Statement effective October 25, 2013.

Sixth Amended and Restated Plan Statement

This Sixth Amended and Restated Plan Statement incorporates changes made by the First, Second, and Third Amendments to the Fifth Amended and Restated Plan Statement and makes other changes required by the Internal Revenue Service as a condition to the issuance of the Favorable Determination Letter that the ASRS received in July 2014. A Determination Letter means that the plan is qualified to accept pre-tax contributions.

Specifically, the Amendment requires that a participant request or receive a distribution by December 31 of the year the member attains age 70½, or the date the participant retires, if later. In all circumstances, the SRSP shall make a distribution no later than the following April 1.

Detail of changes:

7.2.2. **Required Beginning Date.**

- (a) **Participant.** If the Distributee is a Participant, the required beginning date is the December 31 of the calendar year in which the Participant attains age seventy and one-half (70-1/2) years, or the date the Participant retires, if later. ~~the Participant's termination of employment with his Employer, if later.~~ Actual distribution shall be made as soon thereafter as is administratively feasible. In all events, distribution shall be made not later than the following April 1.

**FIRST AMENDMENT TO
ARIZONA STATE RETIREMENT SYSTEM
SUPPLEMENTAL RETIREMENT SAVINGS PLAN
SIXTH AMENDED AND RESTATED PLAN STATEMENT
EFFECTIVE OCTOBER 25, 2013**

WHEREAS, the Arizona State Retirement System (“ASRS”), has adopted the ASRS Supplemental Retirement Savings Plan Sixth Amended and Restated Plan Statement (the “Plan”), effective October 25, 2013; and

WHEREAS, ASRS is authorized, pursuant to Section 9.1 of the Plan, to adopt amendments to the Plan; and

WHEREAS, the Internal Revenue Service has requested an amendment be made to the Plan and ASRS has determined that it is in the best interest of the Plan and its participants to amend the Plan to assure the Plan’s successful operation and administration;

NOW, THEREFORE, pursuant to the authority granted in Section 9.1 of the Plan, the following amendment is adopted, effective October 25, 2013.

1. Section 7.2.2(a) is amended in its entirety to read as follows:

“(a) **Participant.** If the Distributee is a Participant, the required beginning date is the December 31 of the calendar year in which the Participant attains age seventy and one-half (70-1/2) years, or the date the Participant retires, if later. Actual distribution shall be made as soon thereafter as is administratively feasible. In all events, distribution shall be made not later than the following April 1.”

2. Nothing in this First Amendment shall be construed to adversely affect the rights of any Participant to any benefit provided under the Plan or to decrease any accrued benefit under the Plan, except to the extent permitted under the Code or necessary to maintain the Plan as one qualified under Section 401(a) of the Code.

IN WITNESS WHEREOF, the ASRS Board has caused this First Amendment to be executed this ____ day of _____, 2014.

ARIZONA STATE RETIREMENT SYSTEM

By _____

Title _____

Agenda Item #7



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: October 14, 2014

RE: **Agenda Item #7:** Presentation, Discussion and Appropriate Action Regarding ASRS Proposed Legislation for the 2015 Legislative Session

Purpose

To discuss potential ASRS 2015 legislative initiatives.

Recommendation

Recommend approving the 2015 legislative initiatives.

Background

During the summer, the External Affairs Division (EAD) received legislative suggestions from ASRS staff and Trustees concerning plan design issues; plan inefficiencies, inconsistencies, and inequities; administrative concerns; and others. The EAD researched and discussed each suggestion in conjunction with Trustees, Executive Management, and other internal staff. Staff first presented the legislative package at the October 6, 2014 External Affairs Committee (EAC) meeting and revised it based on the discussion and subsequent feedback. The EAC recommended the Board approve the package at its October 24, 2014 meeting. Staff is now seeking approval by the full ASRS Board.

2015 LEGISLATIVE SUGGESTIONS

STATUTE: 38-783(G)

PROPOSED BY: External Tax Counsel

PROPOSAL: Federal conforming language required by the IRS regarding our 401(h) account and the health benefit supplement.

38-783. Retired members; dependents; health insurance; premium payment; separate account; definitions

G. Payment of the benefits provided by this section is subject to the following conditions:

1. The payment of the benefits is subordinate to the payment of retirement benefits payable by ASRS.
2. The total of contributions for the benefits and actual contributions for life insurance protection, if any, shall not exceed twenty-five per cent of the total actual employer and employee contributions to ASRS, less contributions to fund past service credits, after the day the account is established.
3. The board shall deposit the benefits provided by this section in the account.
4. The contributions by the employer to the account shall be reasonable and ascertainable.

5. IF A MEMBER WHO IS ELIGIBLE FOR BENEFITS PROVIDED BY THIS SECTION FORFEITS HIS INTEREST IN THE ACCOUNT PRIOR TO THE TERMINATION OF ASRS, AN AMOUNT EQUAL TO THE AMOUNT OF THE FORFEITURE WILL BE APPLIED AS SOON AS POSSIBLE TO REDUCE EMPLOYER CONTRIBUTIONS TO FUND THE BENEFITS PROVIDED BY THIS SECTION.

This bill would be applied retroactively from and after July 1, 2013. Generally, the IRS requests that an amendment be effective as of the first day of the plan year in which the application for a Favorable Determination Letter (FDL) was filed unless there are compelling reasons to choose a different date. In this particular case, the application for a FDL was filed in January 2014 making the first day of the plan year July 1, 2013.

2015 LEGISLATIVE SUGGESTIONS

STATUTE: 38-797.07

PROPOSED BY: Sedgwick

PROPOSAL: Remove the word “total” from our long term disability statutes when written prior to the term disability. The statutory definition only refers to the inability of a member to do his or her own occupation initially, then any occupation subsequently.

38-797.07. LTD program benefits; limitations; definitions

A. The LTD program is subject to the following limitations:

1. Except as provided in paragraph 9 of this subsection, monthly LTD program benefits shall not exceed two-thirds of a member's monthly compensation, reduced by:

(f) All of any payments for a veteran's disability if both of the following apply:

(i) The veteran's disability payment is for the same condition or a condition related to the condition currently causing the member's ~~total~~ disability.

3. Monthly LTD program benefits are not payable until a member has had a ~~total~~ disability for a period of six consecutive months.

7. Monthly LTD program benefits cease to be payable to a member at the earliest of the following:

(a) The date the member ceases to have a ~~total~~ disability.

11. A member shall be considered to have a ~~total~~ disability if based on objective medical evidence:

(a) During the first thirty months of a period of disability, the member is unable to perform all duties of the position held by the member when the member developed a ~~total~~ disability.

2015 LEGISLATIVE SUGGESTIONS

STATUTE: 15-1451

PROPOSED BY: Financial Services Division, External Affairs Division

PROPOSAL: Currently the statute suggests that if an ASRS member becomes an employee of a community college district and elects to join the district's Optional Retirement Plan (ORP), the ASRS must transfer all contributions from the ASRS account to the ORP.

Generally, this is not an issue and happens with some degree of frequency. However, in the singular circumstance where the ASRS member is retired, the ASRS does not have a way to determine the present value of that member's benefit and then transfer that amount over to the ORP. As a result, we have taken the position that we cannot transfer the balance of a retired member's account.

We would like to add language to the statute that restricts the ASRS to only transfer the account balance for active, inactive and disable members (excluding retired members). If a member is on LTD and joins the ORP of a community college district, under the proposed language, the member will be dropped from our LTD program.

15-1451. Optional retirement plans

D. If an employee who is a **NON-RETIRED** member of the Arizona state retirement system elects to participate in an optional retirement program pursuant to subsection C of this section, the Arizona state retirement system shall transfer the employee's contributions to the Arizona state retirement system and interest as determined by the board of the Arizona state retirement system to the optional retirement program within the later of ninety days after the election or ninety days after receipt by the optional retirement program of a favorable letter of determination issued by the United States internal revenue service. If an eligible employee fails to make an election as provided in subsection C of this section, the employee is deemed to have elected to participate in the Arizona state retirement system. The election to participate in an optional retirement program is irrevocable and constitutes a waiver of all benefits provided by the Arizona state retirement system. All eligible employees who elect to participate in an optional retirement program shall remain participants in the optional retirement program during the continuance of employment with the community college district.

STATUTE: 38-737(A)

PROPOSED BY: ASRS Director

PROPOSAL: The ASRS is requesting the ability, but not requirement, to change its actuarial valuation method. Reasons to execute this change would include: to obtain consistency with GASB 67; to obtain great consistency with other states; the ability to maintain the aforementioned consistencies if appropriate.

38-737. Employer contributions

A. Employer contributions shall be a percentage of compensation of all employees of the employers, excluding the compensation of those employees who are members of the defined contribution program administered by ASRS, as determined by the ASRS actuary pursuant to this section for June 30 of the fiscal year immediately preceding the preceding fiscal year, except that beginning with fiscal year 2001-2002 the contribution rate shall not be less than two per cent of compensation of all employees of the employers. ~~Beginning July 1, 2011, the total employer contribution shall be determined on the projected unit credit method.~~ **ON OR AFTER JUNE 30, 2016, THE ACTUARIAL VALUATION METHOD TO BE USED IN THE ANNUAL ACTUARIAL VALUATIONS OF THE PLAN WILL BE ONE OF THE GENERALLY ACCEPTED ACTUARIAL METHODS AS DETERMINED BY THE BOARD.** The total employer contributions shall be equal to the employer normal cost plus the amount required to amortize the past service funding requirement over a period that is determined by the board and consistent with generally accepted actuarial standards. In determining the past service funding period, the board shall seek to improve the funded status whenever the ASRS trust fund is less than one hundred per cent funded.

2015 LEGISLATIVE SUGGESTIONS

STATUTE: 38-703 & 38-755

PROPOSED BY: Assistant Attorney General

PROPOSAL: Remove the terms “provided in rules” and “subject to rules prescribed by the board” in both of these statutes.

38-703. Plans for coverage of employees of eligible political subdivisions; payroll audits

A. Each eligible political subdivision of this state may submit for approval by the state agency a plan for extending the benefits of title II of the social security act, in conformity with applicable provisions of the social security act, to employees of the eligible political subdivisions. The state agency shall approve each plan and any amendment of the plan if it finds that the plan or amendment of the plan is in conformity with requirements ~~provided in rules~~ of the state agency, except that a plan shall not be approved unless:

Rationale: The ASRS has no jurisdiction in this area but the Social Security Administration does. As a result, any rules that are made by the ASRS do not need to be agreed upon by the SSA. In this area the SSA provides guidance to the ASRS.

38-755. Information as to member's status; beneficiary designation; spousal consent; confidentiality

~~A. Subject to rules prescribed by the board, On application of a member, the board shall furnish information concerning the member's status. In addition, the board shall furnish to each member an account, that may be electronic or online, showing the status of the member's account, including the name of the member's beneficiary as last listed with the board.~~

A. **THE ASRS SHALL MAKE INFORMATION CONCERNING THE MEMBER'S ACCOUNT ACCESSIBLE TO THE MEMBER IN WRITTEN OR ELECTRONIC FORM. THIS INFORMATION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE MEMBER'S CURRENT ACCOUNT BALANCE, CONTACT INFORMATION, BENEFICIARY ELECTION, ESTIMATED RETIREMENT DATE, AND ESTIMATED BENEFIT AMOUNT.**

Rationale: The agency has been transitioning everything towards online use and as we are all aware technology systems are always modernizing and changing. The time-consuming rules process does not tend to coexist with the technology process and thus hampering an agency with the requirement of a rule does not seem necessary.

2015 LEGISLATIVE SUGGESTIONS

STATUTE: 38-797.10

PROPOSED BY: Assistant Attorney General

PROPOSAL: Exempt the ASRS from “bad faith” claims as they relate to our LTD program. ERISA plans are protected from bad faith claims and because we use ERISA as guidance for our plan in many circumstances we would like a similar protection.

(Below is the current language in our statute. We are working with Jothi and outside counsel to determine how our statute would need to be modified.)

38-797.10. Assurances and liabilities

D. Neither the employers, the board nor any member of the board guarantees the LTD trust fund established by section 38-797.02 in any manner against loss or depreciation, and they are not liable for any act or failure to act that is made in good faith pursuant to this article. The employers are not responsible for any act or failure to act of the board or any member of the board. Neither the board nor any member of the board is responsible for any act or failure to act of any employer.

F. NOTHING CONTAINED IN THIS ARTICLE IS INTENDED TO PROVIDE ANY PRIVATE RIGHT OR CAUSE OF ACTION TO OR ON BEHALF OF ANY MEMBER OR EMPLOYER, AND THERE SHALL BE NO LIABILITY ON THE PART OF ASRS, THE BOARD NOR ANY MEMBER OF THE BOARD, OR AGENTS AND EMPLOYEES OF ASRS OR THE BOARD, FOR ANY ACTION TAKEN IN THE PERFORMANCE OF THEIR POWERS AND DUTIES PURSUANT TO THIS ARTICLE.

Agenda Item #8



ARIZONA STATE RETIREMENT SYSTEM

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Paul Matson
Director

MEMORANDUM

TO: Mr. Tom Manos, Chair, Arizona State Retirement System (ASRS) Board

FROM: Mr. Paul Matson, Director

DATE: October 14, 2014

RE: **Agenda Item #8:** Presentation, Discussion and Appropriate Action Regarding the 2015 Board Meeting Calendar

Purpose

To obtain Board approval of the 2015 Board meeting schedule.

Recommendation

Staff recommends approval of one of the proposed 2015 Board meeting schedules (see attachments).

Background

There are two calendar options being presented for the Board's consideration:

- Schedule all 2015 Board meetings on the **4th Friday** of the month, with the November meeting being moved to the first week in December.
 - No meetings will be held in November or July.
- Schedule all 2015 Board meetings on the **last Friday** of the month, with the November meeting being moved to the first week in December.
 - No meetings will be held in November or July.
 - This schedule would move the January, May, and October meeting to be one week later. This schedule would provide staff who gather materials for the Directors Report extra days to gather performance data for the prior month.

Staff has no strong preference for either schedule and can accommodate either, or an alternate schedule, if the board would prefer.

2015 Calendar (option 1)

January

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

Su	Mo	Tu	We	Th	Fr	Sa
Sa	2	3	4	5	6	7
8	9	10	11	12	13	14
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22	23	24	25	26	27	28
29	30	31				

April

Su	Mo	Tu	We	Th	Fr	Sa
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26	27	28	29	30		

May

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

Su	Mo	Tu	We	Th	Fr	Sa
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
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August

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30	31					

September

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27	28	29	30			

October

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25	26	27	28	29	30	31

November

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29	30					

December

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2015 Board Meeting Dates ((4th Friday) (No meeting July and November)

January 23	February 27	March 27	April 24	May 22	June 26	August 28	September 25	October 23	December 4
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2015 Calendar (option 2)

January

Su	Mo	Tu	We	Th	Fr	Sa
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18	19	20	21	22	23	24
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February

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22	23	24	25	26	27	28

March

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29	30	31				

April

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26	27	28	29	30		

May

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

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21	22	23	24	25	26	27
28	29	30				

July

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

Su	Mo	Tu	We	Th	Fr	Sa
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2	3	4	5	6	7	8
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23	24	25	26	27	28	29
30	31					

September

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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October

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

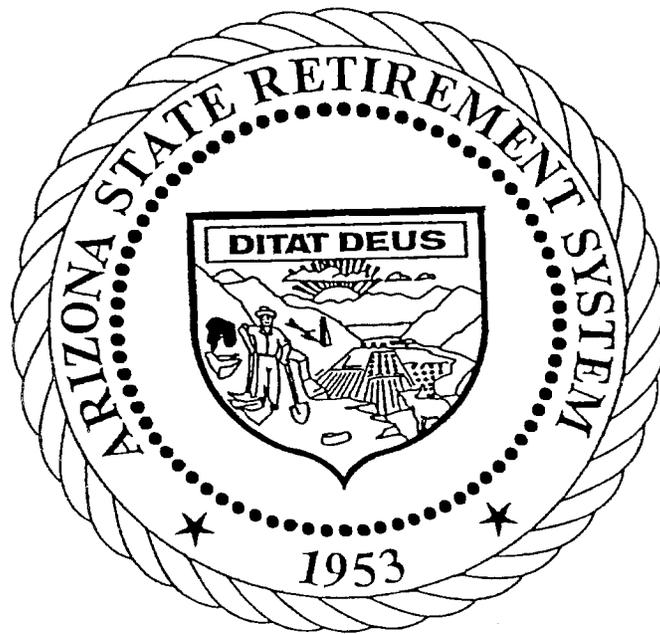
December

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

2015 Board Meeting Dates are the LAST Friday of the month (4th Friday except January, May, October which are the 5th Friday)
(No meeting July and November)

January 30	February 27	March 27	April 24	May 29	June 26	August 28	September 25	October 30	December 4
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Director's Report Audit





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. Bernard Glick, Chief Internal Auditor

DATE: October 14, 2014

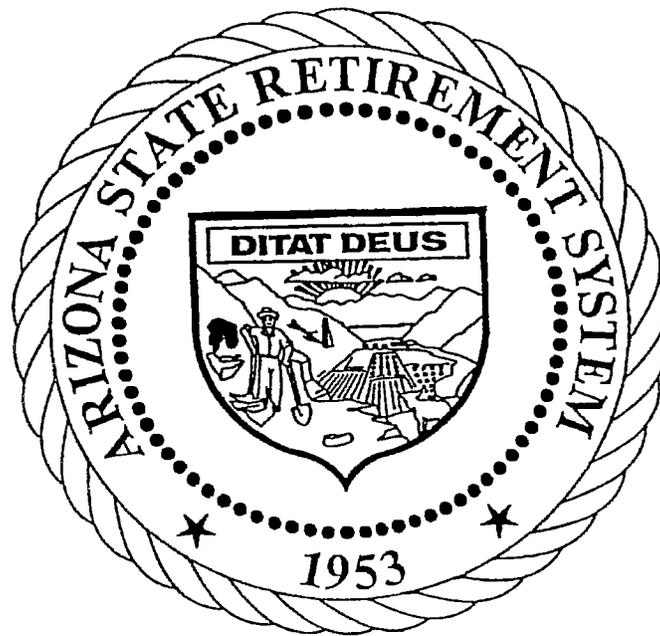
RE: Internal Audit Review of Internal Investment Validation for the month ending September 30, 2014

The Internal Audit Division reviewed 2,238 trade transactions in the month of September on all the activity in the E2, E3, E4, E6, E7, E8, E9 and F2 accounts. Our review included:

- Determining that the transaction was properly approved.
- Reviewing the transaction for mathematical accuracy.
- Ensuring that the description and ticker symbol matched the CUSIP number.
- Reconciliation of transaction from trade ticket to custody bank transaction download.
- Other tests that we deemed appropriate.

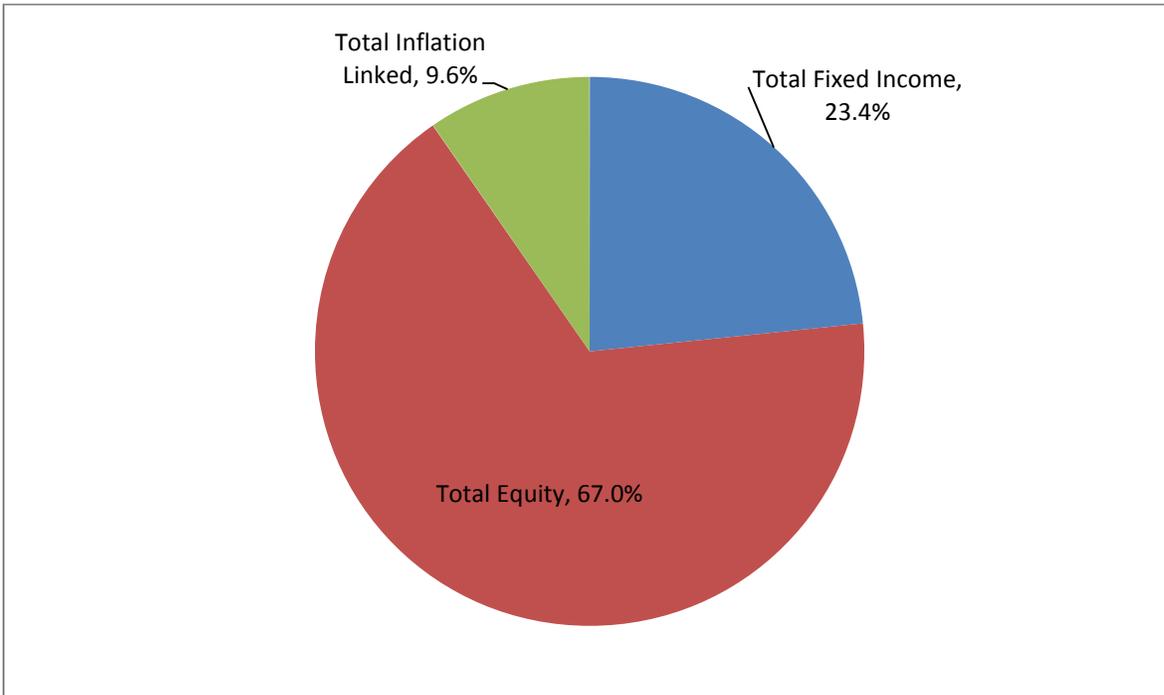
No infractions were noted during our review. Based on this review, we believe the procedures for executing and reporting internal investment transactions have been followed for this time reportable period.

Director's Report Investments

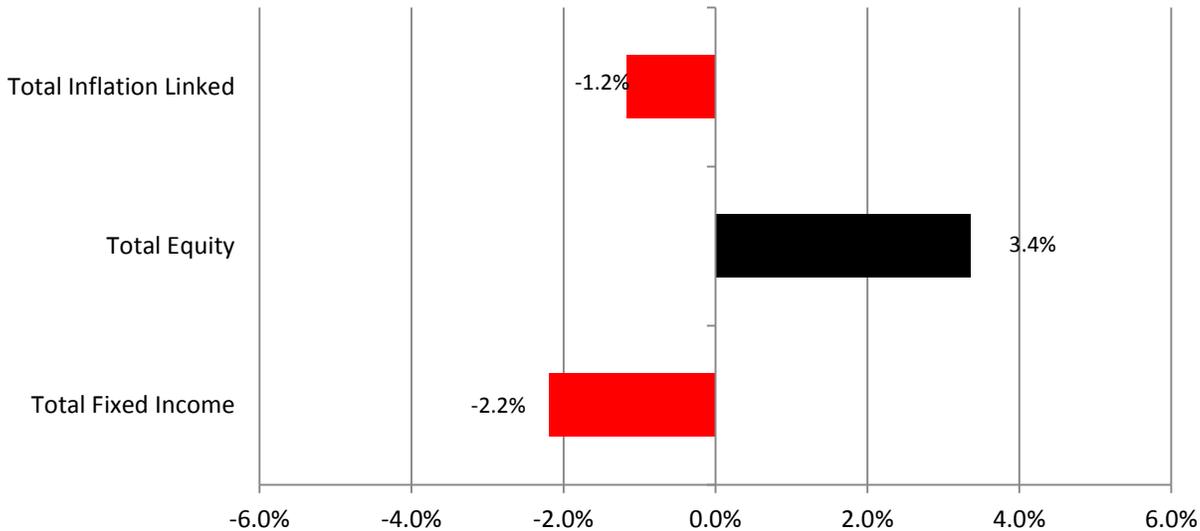


TOTAL FUND POSITIONING – 9/30/14

ACTUAL PORTFOLIO



ACTUAL PORTFOLIO (ASSUMED GTAA ALLOCATION VS. ADJUSTED SAA POLICY *)



*Real Estate and Private Equity actual weight is equal to policy weight during the implementation of the asset class.

*Over/Underweights include both GTAA positions as well as IMD tactical considerations.

Note: Opportunistic & Private Debt, Opportunistic Private Equity, Farmland & Timber, Real Estate and Private Equity market values are reported on a quarter-lag and adjusted to include the current quarter's cash flows. Within the Assumed GTAA Allocation vs. Adjusted SAA Policy chart, Real Estate was prorated to domestic equity, international equity and fixed income. Private Equity was prorated to domestic equity.

Pension (Plan, System, HBS Assets) ASRS Market Value Report As of: Tuesday, September 30, 2014

Account Manager	Account Manager Style	Fixed Income		Equity		Inflation Linked		Total	Pct of Fund
		Active	Enh/Passive	Active	Enh/Passive	Active	Enh/Passive		
State Street B&T: Boston	Master Cash & Pension Acct.		331,490,228					331,490,228	0.98%
	Cash Total							\$331,490,228	0.98%
GTAAs Managers (2)	Active GTAA	1,030,141,661						1,030,141,661	3.05%
Blackrock: San Francisco	Passive (Intermediate Gov Credit)		23,882,665					23,882,665	0.07%
ASRS: Phoenix	Enhanced Passive F2		1,853,745,813					1,853,745,813	5.49%
Blackrock: San Francisco	Passive (US Debt Index)		713,794,497					713,794,497	2.12%
	Core Fixed Income Total							\$3,621,564,637	10.73%
	Core Fixed Income Policy								13.00%
Columbia: Minneapolis	Active	637,443,615						637,443,615	1.89%
JP Morgan: Indianapolis	Active	324,652,051						324,652,051	0.96%
	High Yield Fixed Income Total							\$962,109,421	2.85%
	High Yield Fixed Income Policy								5.00%
	US Fixed Income Total							\$4,583,674,058	13.58%
	US Fixed Income Policy Range: 8% - 28%								18.00%
PIMCO (local): Newport Beach	Active	332,833,994						332,833,994	0.99%
Ashmore (blended): London	Active	402,415,871						402,415,871	1.19%
	EM Debt Total							\$735,249,864	2.18%
	EM Debt Policy								4.00%
	Opportunistic Debt							\$1,024,479,723	3.04%
	Opportunistic Debt Policy Range: 0% - 10%								0.00%
	Private Debt Total							\$1,212,597,914	3.59%
	Private Debt Policy								3.00%
	Fixed Income Total							\$7,887,491,787	23.37%
	Fixed Income Policy Range: 15% - 35%								25.00%
Intech: FL	Active (Growth)			470,079,956				470,079,956	1.39%
LSV: Chicago	Active (Value)			798,510,568				798,510,568	2.37%
GTAAs Managers (2)	Active GTAA		1,172,566,285					1,172,566,285	3.47%
ASRS: Phoenix	Passive E2				4,938,827,474			4,938,827,474	14.64%
ASRS: Phoenix	Enhanced Passive E7				773,982,350			773,982,350	2.29%
ASRS: Phoenix	Enhanced Passive E8				501,116,393			501,116,393	1.49%
ASRS: Phoenix	Risk Factor Portfolio				517,200,713			517,200,713	1.53%
	Large Cap Equity Total							\$9,172,321,150	27.18%
	Large Cap Policy								23.00%
Wellington: Boston	Active (Core)			400,583,445				400,583,445	1.19%
CRM: New York	Active (Value)			98,085,114				98,085,114	0.29%
ASRS: Phoenix	Passive E3 (Growth)				488,775,845			488,775,845	1.45%
ASRS: Phoenix	Passive E4 (Value)				498,522,341			498,522,341	1.48%
	Mid Cap Equity Total							\$1,485,966,745	4.40%
	Mid Cap Policy								5.00%
TimesSquare: New York	Active SMID (Growth)			436,438,016				436,438,016	1.29%
DFA: Santa Monica	Active (Value)			376,766,167				376,766,167	1.12%
Champlain: Vermont	Active (Core)			86,912,439				86,912,439	0.26%
ASRS: Phoenix	Passive E6				451,373,344			451,373,344	1.34%
	Small Cap Equity Total							\$1,351,489,966	4.01%
	Small Cap Policy								5.00%
	U.S. Equity Total							\$12,009,777,861	35.59%
	US Equity Policy Range: 26% - 38%								33.00%
Brandes: San Diego	Active (Value)			569,428,520				569,428,520	1.69%
GTAAs Managers (2)	Active GTAA			1,072,271,887				1,072,271,887	3.18%
American Century	Active (EAFE)			505,026,349				505,026,349	1.50%
Trinity Street	Active (EAFE)			324,343,849				324,343,849	0.96%
Thompson Siegel Walmsley	Active (EAFE)			152,111,136				152,111,136	0.45%
Blackrock: San Francisco	Passive (EAFE)				2,302,385,160			2,302,385,160	6.82%
	Large Cap Developed Non-US Equity Total							\$4,927,849,242	14.60%
	Large Cap Developed Policy								14.00%
AQR: Greenwich	Active (EAFE SC)			169,823,937				169,823,937	0.50%
DFA: Santa Monica	Active (EAFE SC)			210,822,356				210,822,356	0.62%
Franklin Templeton: San Mateo	Active (EAFE SC)			381,083,311				381,083,311	1.13%
Blackrock: San Francisco	Passive (EAFE SC)				441,039,138			441,039,138	1.31%
	Small Cap Developed Non-US Equity Total							\$1,202,771,528	3.56%
	Small Cap Developed Policy								3.00%
William Blair: Chicago	Active (EM)			465,818,201				465,818,201	1.38%
Eaton Vance: Boston	Active (EM)			508,014,845				508,014,845	1.51%
LSV: Chicago	Active (EM)			307,016,669				307,016,669	0.91%
Blackrock: San Francisco	Passive (EM)				677,025,836			677,025,836	2.01%
	Emerging Markets Equity Total							\$1,957,875,551	5.80%
	Emerging Markets Policy								6.00%
	Non-US Equity Total							\$8,088,496,321	23.97%
	Non-US Equity Policy Range: 16% - 28%								23.00%
	Private Equity Total							\$2,158,643,330	6.40%
	Private Equity Policy Range: 5% - 9%								7.00%
	Opportunistic Equity							\$345,741,377	1.02%
	Opportunistic Equity Policy Range: 0% - 3%								0.00%
	Equity Total							\$22,602,658,888	66.98%
	Total Equity Policy Range: 53% - 73%								63.00%
Gresham: New York						769,190,896		769,190,896	2.28%
GTAAs Managers (2)	Active GTAA					342,348,057		342,348,057	1.01%
	Commodities Total							\$1,111,538,953	3.29%
	Commodities Policy Range: 1% - 7%								4.00%
GTAAs Manager (1)	Active GTAA					52,030,819		52,030,819	0.15%
	Real Estate Total							\$2,026,837,366	6.01%
	Real Estate Policy Range: 6% - 10%								8.00%
	Infrastructure Total							\$0	0.00%
	Infrastructure Policy Range: 0% - 3%								0.00%
	Farmland & Timber Total					116,026,109		\$116,026,109	0.34%
	Farmland & Timber Policy Range: 0% - 3%								0.00%
	Opportunistic Inflation Linked Total							\$0	0.00%
	Opportunistic I/L Policy Range: 0% - 3%								0.00%
	Inflation Linked Total							\$3,254,402,448	9.64%
	Inflation Linked Policy Range: 7%-15%								12.00%
	TOTAL Amounts	\$3,940,098,860	\$3,947,392,927	\$11,012,372,883	\$11,590,286,004	\$3,370,428,556	\$0	\$33,744,553,123	Total Fund
	TOTAL Percent	11.68%	11.70%	32.63%	34.36%	9.99%	0.00%		

Asset Class	Actual Portfolio	SAA Policy: Target (Range)	Rebalancing		Assumed - Adjusted		Policy Band check	Passive Min	Passive Actual
			Assumed Port	Adj Policy	% diff	\$ diff			
Cash	0.98%								
Core	10.73%	13%						50%	72%
High Yield	2.85%	5%							
US Fixed Income	13.58%	18% (8-28%)	14.56%	18.56% (9-29%)	-4.00%	-\$1,349,940,021	OK		
EM Debt	2.18%	4%		4.00%					
Opportunistic Debt	3.04%	0% (0-10%)	3.04%	0% (0-10%)	3.04%	\$1,024,479,723	OK		
Private Debt	3.59%	3%		3.00%					
Total Fixed Income	23.37%	25% (15-35%)	23.37%	25.56% (16-36%)	-2.19%	-\$739,731,237	OK		
Large Cap	27.18%	23%							
Mid Cap	4.40%	5%							
Small Cap	4.01%	5%							
US Equity	35.59%	33% (26-38%)	36.79%	34.46% (27-39%)	2.33%	\$786,585,350	OK	50%	66%
Developed Large Cap	14.60%	14%							
Developed Small Cap	3.56%	3%							
Emerging Markets	5.80%	6%							
Non-US Equity	23.97%	23% (16-28%)	23.51%	23.5% (16-28%)	0.01%	\$4,135,176	OK	30%	49%
Private Equity	6.40%	7% (5-9%)	6.40%	6.4% (4-8%)	0.00%	\$0	OK		
Opportunistic Equity	1.02%	0% (0-3%)	1.02%	0% (0-3%)	1.02%	\$345,741,377	OK		
Total Equity	66.98%	63% (53-70%)	67.72%	64.36% (54-71%)	3.37%	\$1,136,461,903	OK		
Commodities	3.29%	4% (1-7%)	2.71%	4.08% (1-7%)	-1.37%	-\$460,725,955	OK		
Real Estate	6.01%	8% (6-10%)	5.85%	6.01% (4-8%)	-0.15%	-\$52,030,819	OK		
Infrastructure	0.00%	0% (0-3%)	0.00%	0% (0-3%)	0.00%	\$0	OK		
Farmland & Timber	0.34%	0% (0-3%)	0.34%	0% (0-3%)	0.34%	\$116,026,109	OK		
Opportunistic I/L	0.00%	0% (0-3%)	0.00%	0% (0-3%)	0.00%	\$0	OK		
Total Inflation Linked	9.64%	12% (8-16%)	8.91%	10.09% (6-14%)	-1.18%	-\$396,730,665	OK		
Total	100.00%	100%	100.00%	100.00%	0.00%	\$0		30%	43%
								Internally Managed Portfolios:	
								\$9,506,343,561	
								28%	
Total GTAA									
Bridgewater	\$3,081,439,856	9.1%							
Windham	\$587,918,854	1.7%							
Total	\$3,669,358,709	10.9%							
Policy	10% ±5%	OK							
								Opportunistic definitions:	
								1) Tactical in nature: Function of market dislocation AND	
								2a) Outside SAA benchmark, OR	
								2b) Within SAA benchmark but absolute return oriented	

ASRS Pension and HBS Assets
Public Securities Markets
Investment Managers Performance Summary

Period Ending Sep 30, 2014
FINAL



	Style	Inception	Amount (\$mil.)	Net Returns (%)								Excess Returns (basis points)							
				Month	3 Months	YTD	1 Year	Annualized			ITD	Month	3 Months	YTD	1 Year	Annualized			ITD
								3 Years	5 Years	10 Years						3 Years	5 Years	10 years	
US EQUITY LARGE CAP																			
E2 MODEL	INDEXED	04/01/1997	4,939	-1.40	1.13	8.35	19.74	22.97	15.69	8.16	7.66	0	1	1	1	-3	-1	5	7
	<i>S&P 500 INDEX</i>			-1.40	1.13	8.34	19.73	22.99	15.70	8.11	---								
INTECH LARGE CAP	QUANTITATIVE	01/01/2003	470	-0.79	1.52	6.85	19.88	21.84	16.16	8.22	9.93	31	-41	-251	-167	-78	-48	-68	50
	<i>S&P/CITIGROUP 500 GROWTH</i>			-1.09	1.92	9.36	21.55	22.62	16.64	8.90	---								
LSV ASSET MANAGEMENT	QUANTITATIVE	01/01/2003	799	-2.88	-0.80	6.88	19.40	27.37	16.88	9.36	11.53	-113	-105	-35	163	391	214	210	238
	<i>LSV CUSTOM INDEX</i>			-1.75	0.25	7.23	17.77	23.46	14.73	7.26	---								
E7	INDEXED	08/01/2012	774	-0.61	1.49	9.90	19.96	---	---	---	17.96	-3	-3	-7	-11	---	---	---	11
	<i>MSCI USA High Dividend Yield Index</i>			-0.59	1.52	9.96	20.07	---	---	---	---								
E8	INDEXED	08/01/2012	501	-0.78	1.69	8.01	16.31	---	---	---	15.51	-2	-2	13	37	---	---	---	64
	<i>MSCI USA Minimum Volatility Index</i>			-0.76	1.71	7.88	15.94	---	---	---	---								
TOTAL US EQUITY LARGE CAP			\$ 7,482																
US EQUITY MID CAP																			
WELLINGTON MANAGEMENT COMPANY LLP	FUNDAMENTAL	07/01/2002	401	-4.25	-4.68	5.31	14.93	24.95	16.04	11.80	11.42	29	-70	210	311	252	-32	151	115
	<i>S&P 400 MIDCAP INDEX</i>			-4.55	-3.98	3.22	11.82	22.43	16.37	10.29	---								
E3 MODEL	INDEXED	12/01/2000	489	-3.78	-3.31	1.63	10.24	20.65	17.15	11.20	8.47	-2	-2	-1	2	26	47	55	56
	<i>S&P/CITIGROUP 400 GROWTH</i>			-3.76	-3.29	1.64	10.22	20.39	16.67	10.66	---								
CRM MID CAP VALUE	FUNDAMENTAL	01/01/2004	98	-3.90	-3.56	0.97	11.04	20.29	13.28	9.39	9.63	145	113	-391	-245	-429	-281	-48	-12
E4 MODEL	INDEXED	07/01/2002	499	-5.40	-4.75	4.75	13.29	24.41	16.03	10.13	10.46	-4	-6	-13	-21	-18	-6	26	20
	<i>S&P/CITIGROUP 400 VALUE</i>			-5.35	-4.69	4.88	13.50	24.59	16.09	9.88	---								
TOTAL US EQUITY MID CAP			\$ 1,486																
US EQUITY SMALL CAP																			
DIMENSIONAL FUND ADVISORS EQFD	QUANTITATIVE	09/01/1998	377	-6.53	-5.49	0.12	11.98	26.29	17.15	9.84	12.26	-49	129	275	524	220	149	81	138
	<i>DFA BLENDED BENCHMARK</i>			-6.04	-6.78	-2.62	6.74	24.09	15.66	9.03	---								
TIMESQUARE CAPITAL MANAGEMENT	FUNDAMENTAL	04/01/2005	436	-3.91	-3.51	-3.13	7.35	25.06	17.89	---	12.11	47	69	-273	-69	237	105	---	255
	<i>RUSSELL 2500 GROWTH</i>			-4.39	-4.21	-0.41	8.05	22.68	16.85	---	---								
CHAMPLAIN INVESTMENT PARTNERS LLC	FUNDAMENTAL	01/01/2008	87	-3.85	-4.94	-4.44	2.89	18.17	14.41	---	8.98	152	179	-71	-286	-469	-184	---	35
E6	INDEXED	02/01/2007	451	-5.40	-6.75	-3.81	5.66	22.81	16.07	---	7.59	-3	-3	-8	-8	-5	-17	---	36
	<i>S&P 600 SMALL CAP</i>			-5.37	-6.73	-3.72	5.74	22.86	16.24	---	---								
TOTAL US EQUITY SMALL CAP			\$ 1,351																
TOTAL US EQUITY				\$ 10,320															
INTERNATIONAL DEVELOPED LARGE CAP																			
BRANDES INVESTMENT PARTNERS INT EQ	FUNDAMENTAL	10/01/1998	569	-4.32	-6.79	0.08	5.73	13.67	6.16	6.42	9.32	-48	-92	146	144	-35	-136	-137	290
	<i>BRANDES CUSTOM INDEX</i>			-3.84	-5.88	-1.38	4.29	14.01	7.52	7.78	---								
AMERICAN CENTURY	FUNDAMENTAL	07/01/2014	505	-2.71	-4.84	---	---	---	---	---	-4.84	113	104	---	---	---	---	---	104
BGI EAFE INDEX	INDEXED	07/01/2009	2,300	-3.86	-5.87	-1.15	4.46	13.93	6.87	---	10.21	-1	0	23	17	-8	-9	---	-9
THOMSON, SIEGEL & WALMSLEY	FUNDAMENTAL	07/01/2014	152	-3.96	-5.86	---	---	---	---	---	-5.86	-11	1	---	---	---	---	---	1

ASRS Pension and HBS Assets
Public Securities Markets
Investment Managers Performance Summary

Period Ending Sep 30, 2014
FINAL



				Net Returns (%)							Excess Returns (basis points)								
	Style	Inception	Amount (\$mil.)	Month	3 Months	YTD	1 Year	Annualized			Month	3 Months	YTD	1 Year	Annualized				
								3 Years	5 Years	10 Years					3 Years	5 Years	10 years	ITD	
TRINITY STREET	FUNDAMENTAL	07/01/2014	324	-3.27	-6.44	---	---	---	---	---	-6.44	57	-57	---	---	---	---	---	-57
<i>MSCI EAFE NET</i>				-3.84	-5.88	---	---	---	---	---	---								
TOTAL INTERNATIONAL DEVELOPED LARGE CAP			\$ 3,851																
INTERNATIONAL DEVELOPED SMALL CAP																			
AQR CAPITAL	FUNDAMENTAL	06/01/2013	170	-5.33	-6.76	-2.14	4.92	---	---	---	12.30	10	106	61	189	---	---	---	143
BLACKROCK EAFE SMALL CAP	INDEXED	06/01/2010	440	-5.41	-7.86	-2.79	2.90	14.43	---	---	12.45	2	-5	-5	-14	-32	---	---	-23
DIMENSIONAL FUND ADVISORS INTL SC	QUANTITATIVE	09/01/2005	211	-5.93	-8.99	-1.42	5.35	15.65	7.34	---	6.00	-51	-118	133	232	90	-185	---	11
FRANKLIN TEMPLETON INVESTMENTS	FUNDAMENTAL	04/01/2011	381	-6.78	-10.72	-8.64	-4.21	15.90	---	---	8.30	-135	-290	-590	-725	115	---	---	188
<i>MSCI EAFE SMALL CAP NET</i>				-5.43	-7.82	-2.74	3.03	14.75	---	---	---								
TOTAL INTERNATIONAL DEVELOPED SMALL CAP			\$ 1,202																
INTERNATIONAL EMERGING MARKETS																			
BLACKROCK EMERGING MARKETS	INDEXED	10/01/2010	674	-7.42	-3.55	2.19	4.14	6.95	---	---	0.60	-1	-6	-24	-19	-49	---	---	-46
EATON VANCE EMERGING MARKET EQUITY	QUANTITATIVE	12/01/2010	507	-4.86	-2.25	4.56	7.27	8.98	---	---	2.31	255	124	213	294	154	---	---	125
LSV EMERGING MARKET EQUITY	QUANTITATIVE	12/01/2010	306	-7.43	-3.53	4.69	7.08	9.25	---	---	2.43	-1	-4	226	275	181	---	---	138
WILLIAM BLAIR & COMPANY	FUNDAMENTAL	11/01/2010	465	-5.57	-1.57	6.06	9.82	11.29	---	---	3.07	184	192	363	549	385	---	---	272
<i>MSCI EMF NET</i>				-7.41	-3.50	2.43	4.33	7.44	---	---	---								
TOTAL INTERNATIONAL EMERGING MARKETS			\$ 1,953																
TOTAL INTERNATIONAL EQUITY			\$ 7,005																
RISK FACTOR PORTFOLIO																			
RISK FACTOR PORTFOLIO	OVERLAY	06/01/2013	517	-1.22	1.42	7.83	19.15	---	---	---	17.23								
TOTAL RISK FACTOR PORTFOLIO			\$ 517																
TOTAL EQUITY W/ RISK FACTOR OVERLAY			\$ 17,844																
CORE FIXED INCOME																			
BGI US DEBT FD	INDEXED	04/01/2014	714	-0.62	0.23	---	---	---	---	---	---	6	6	---	---	---	---	---	---
F2 MODEL	INDEXED	10/01/2000	1,854	-0.59	0.19	3.98	4.06	2.61	4.31	4.85	5.62	9	3	-12	10	18	19	23	15
<i>Barclays Aggregate</i>				-0.68	0.17	4.10	3.96	2.43	4.12	4.62	---								
BGI GOVT/CRDTBD INDEX	INDEXED	11/01/2008	24	-0.45	0.00	2.36	2.35	2.14	3.52	---	4.90	6	3	14	15	12	10	---	10
<i>Barclays Gov/Credit Int</i>				-0.51	-0.03	2.22	2.20	2.01	3.42	---	---								
TOTAL CORE FIXED INCOME			\$ 2,591																
HIGH YIELD FIXED INCOME																			
COLUMBIA MANAGEMENT INV. ADVISORS, LLC	FUNDAMENTAL	10/01/2009	637	-2.11	-1.82	3.33	6.71	10.73	9.91	---	9.91	-2	4	-16	-49	-36	-66	---	-66
JP MORGAN HIGH YIELD	FUNDAMENTAL	07/01/2013	325	-1.94	-1.93	2.78	6.65	---	---	---	7.11	16	-6	-71	-55	---	---	---	-52
<i>Barclays Corp High Yield</i>				-2.09	-1.87	3.49	7.20	---	---	---	---								
TOTAL HIGH YIELD FIXED INCOME			\$ 963																



	Style	Inception	Amount (\$mil.)	Net Returns (%)								Excess Returns (basis points)							
				Month	3 Months	YTD	1 Year	Annualized			ITD	Month	3 Months	YTD	1 Year	Annualized			ITD
								3 Years	5 Years	10 Years						3 Years	5 Years	10 years	
EMERGING MARKETS DEBT																			
ASHMORE EMERGING MKT DBT BLEND	FUNDAMENTAL	01/01/2013	402	-3.74	-4.35	1.61	1.23	---	---	---	-2.56	-48	-128	-187	-229	---	---	---	-92
<i>EMERGING MARKETS BLENDED INDEX</i>																			
PIMCO EMERGING MARKET DEBT LC	FUNDAMENTAL	01/01/2013	333	-3.25	-3.07	3.48	3.51	---	---	---	---	-22	90	105	56	---	---	---	-47
<i>JPM GBI-EM Global Diversified Index</i>																			
TOTAL EMERGING MARKETS DEBT			\$ 735																
TOTAL PUBLIC FIXED INCOME			\$ 4,289																
GTAA																			
BRIDGEWATER ASSOCIATES GLBL TAA	FUNDAMENTAL	01/01/2004	3,141	-2.79	-2.35	5.11	11.40	14.80	13.86	9.52	9.03	-79	-90	94	117	69	355	274	249
<i>GTAA CUSTOM BENCHMARK</i>																			
WINDHAM	QUANTITATIVE	10/01/2011	588	-2.00	-1.44	4.17	10.23	14.11	10.32	6.78	---	-237	-270	-305	-416	-388	---	---	-388
<i>WINDHAM CUSTOM INDEX</i>																			
TOTAL GTAA			\$ 3,729																
GLOBAL INFLATION LINKED																			
GRESHAM	FUNDAMENTAL	09/01/2010	769	-5.91	-10.88	-4.54	-5.47	-3.09	---	---	0.61	31	95	105	111	226	---	---	290
<i>Bloomberg Commodity Index Total Return</i>																			
TOTAL GLOBAL INFLATION LINKED			\$ 769																
TOTAL PUBLIC MARKET			\$ 26,997																



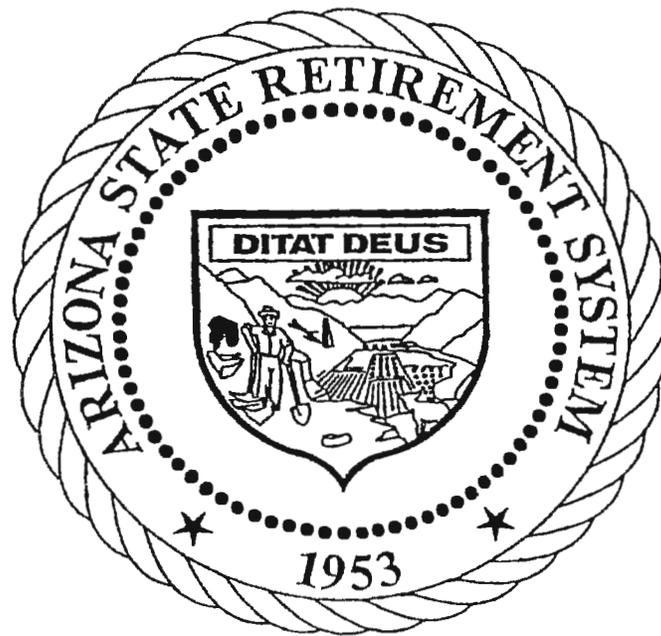
			Net Returns (%)								Excess Returns (basis points)							
	Inception	Amount (\$mil.)	Annualized								Annualized							
			Month	3 Months	YTD	1 Year	3 Years	5 Years	10 Years	ITD	Month	3 Months	YTD	1 Year	3 Years	5 Years	10 years	ITD
BLACKROCK - US DEBT FUND B	01/01/2011	31.6	-0.62	0.21	4.27	4.07	2.49	---	---	3.75	6	5	17	11	6	---	---	4
<i>Barclays Aggregate</i>			-0.68	0.17	4.10	3.96	2.43	4.12	4.62	---								
BLACKROCK - US HIGH YIELD FUND B	01/01/2011	18.0	-2.33	-2.13	3.41	7.12	10.98	---	---	8.03	-23	-26	-9	-8	-11	---	---	-35
<i>Barclays Corp High Yield</i>			-2.09	-1.87	3.49	7.20	11.09	10.57	8.33	---								
BLACKROCK-LTD-EM BD INDX FD B	01/01/2013	9.6	-5.23	-5.90	-0.40	-2.26	---	---	---	-6.06	-12	-23	-40	-72	---	---	---	-82
<i>JPM GBI-EM Global Diversified Index</i>			-5.11	-5.66	-0.01	-1.54	2.21	4.43	8.80	---								
BLACKROCK - RUSSELL 1000 FUND B	01/01/2011	95.6	-1.74	0.66	7.95	18.96	23.21	---	---	15.19	2	1	-2	-5	-2	---	---	1
<i>RUSSELL 1000</i>			-1.75	0.65	7.97	19.01	23.23	15.90	8.46	---								
BLACKROCK - RUSSELL 2000 FUND B	01/01/2011	16.1	-6.03	-7.28	-4.28	4.08	21.44	---	---	11.20	2	7	12	15	18	---	---	18
<i>RUSSELL 2000</i>			-6.05	-7.36	-4.41	3.93	21.26	14.29	8.19	---								
BLACKROCK - EAFE INDEX FUND B	01/01/2011	36.3	-3.83	-5.88	-1.33	4.24	13.70	---	---	6.18	1	0	4	-5	-31	---	---	-31
<i>MSCI EAFE NET</i>			-3.84	-5.88	-1.38	4.29	14.01	6.96	---	---								
BLACKROCK EAFE SMALL CAP FUND B	01/01/2011	8.9	-5.39	-7.81	-2.72	2.99	14.48	---	---	6.58	3	0	2	-5	-27	---	---	-25
<i>MSCI EAFE SMALL CAP NET</i>			-5.43	-7.82	-2.74	3.03	14.75	9.19	---	---								
BLACKROCK MSCI EMERGING MARKETS FUND B	01/01/2011	15.8	-7.41	-3.56	2.14	4.03	6.94	---	---	-1.26	0	-7	-29	-30	-50	---	---	-49
<i>MSCI EMF NET</i>			-7.41	-3.50	2.43	4.33	7.44	---	---	---								
BGI-LTD- R ESTATE FD	01/01/2005	21.4	-5.83	-3.03	14.51	13.20	16.03	15.55	---	6.56	-2	2	18	-26	-132	-87	---	-47
<i>WILSHIRE RESI</i>			-5.81	-3.05	14.33	13.46	17.34	16.41	8.49	---								
BLACKROCK DJ UBS COMM FUND B	01/01/2011	6.4	-6.21	-11.90	-5.83	-7.01	-5.56	---	---	-8.29	1	-7	-24	-42	-22	---	---	-33
<i>Bloomberg Commodity Index Total Return</i>			-6.23	-11.83	-5.59	-6.58	-5.34	-1.37	-1.04	---								
LONG TERM DISABILITY - CASH	07/01/1995	1.4	0.00	0.00	0.00	0.00	0.01	0.08	1.70	2.76	0	-1	-3	-5	-6	-2	9	-5
<i>91 DAY TREASURY BILL</i>			0.00	0.01	0.03	0.05	0.07	0.10	1.61	---								
TOTAL LTD		\$ 261.3																

Long Term Disability (LTD)

Tuesday, September 30, 2014

Account Manager	Account Manager Style	Fixed Income	Equity	Inflation Linked	Total	Pct of Fund	Target (Range)
StateStreet B&T: Boston	Cash	\$1,232,380			\$1,232,380	0.47%	
BlackRock: San Francisco	Fixed Core (Passive)	\$31,596,706			\$31,596,706	12.03%	13%
BlackRock: San Francisco	Fixed High Yield (Passive)	\$17,953,494			\$17,953,494	6.84%	8%
BlackRock: San Francisco	Emerging Market Debt (Passive)	\$9,712,400			\$9,712,400	3.70%	4%
						22.57%	25% (15-35%)
BlackRock: San Francisco	Russell 1000 (Passive)		\$96,114,154		\$96,114,154	36.60%	34%
BlackRock: San Francisco	Russell 2000 (Passive)		\$16,397,347		\$16,397,347	6.24%	6%
						42.85%	40% (33-45%)
BlackRock: San Francisco	EAFE (Passive)		\$36,531,032		\$36,531,032	13.91%	14%
BlackRock: San Francisco	EAFE SC (Passive)		\$8,907,702		\$8,907,702	3.39%	3%
BlackRock: San Francisco	Emerging Markets (Passive)		\$16,116,859		\$16,116,859	6.14%	6%
						23.44%	23% (16-28%)
BlackRock: San Francisco	Dow Jones UBS Commodities (Passive)			\$6,473,933	\$6,473,933	2.47%	4% (1-7%)
BlackRock: San Francisco	US Real Estate (Passive)			\$21,535,172	\$21,535,172	8.20%	8% (6-10%)
						10.67%	12% (8-16%)
	TOTAL Amounts	\$60,494,981	\$174,067,093	\$28,009,105	\$262,571,179		
	TOTAL Percent	23.04%	66.29%	10.67%			
Actual Portfolio		23.04%	66.29%	10.67%			
Policy		25% (15-35%)	63% (53-70%)	12% (8-16%)			

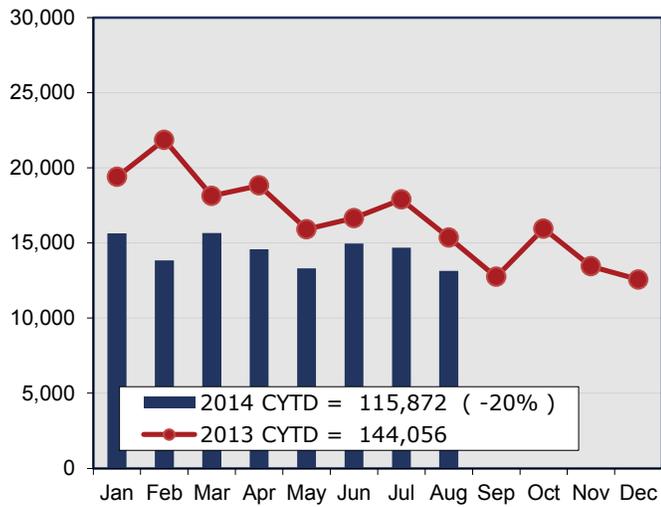
Director's Report Operations



Member Advisory Center: Phone

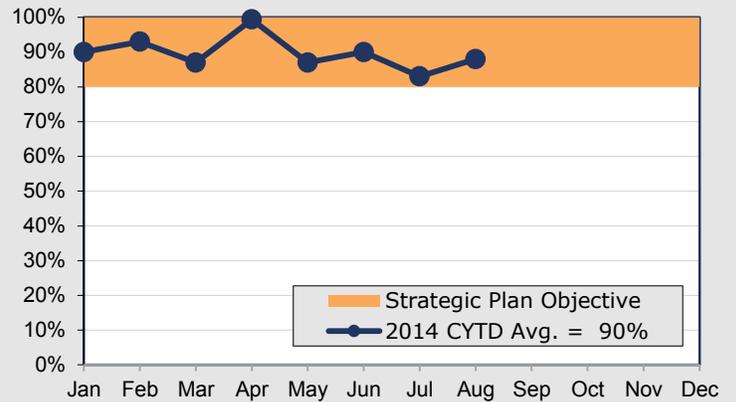
Volume

comparison of calls by month and year



Timeliness

percent answered in 20 seconds or less

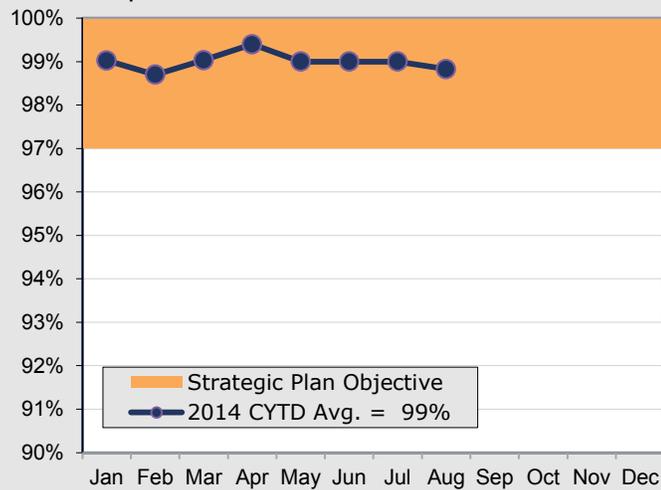


Timeliness (average wait time in seconds)

55	7	14	12	15	9	12	10				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Resolution Rate

percent resolved on first contact



Abandonment Rate

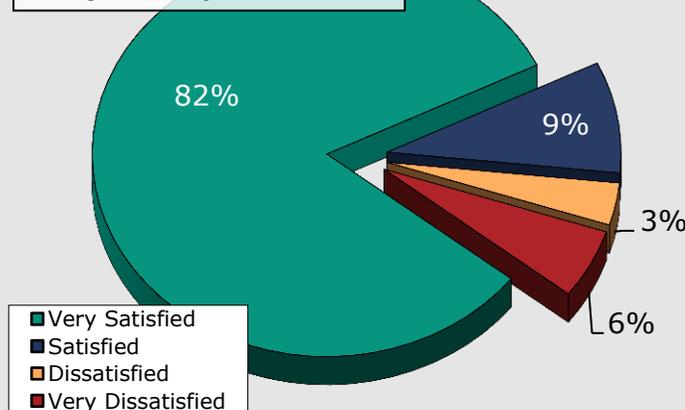
percent of calls abandoned



Member Satisfaction

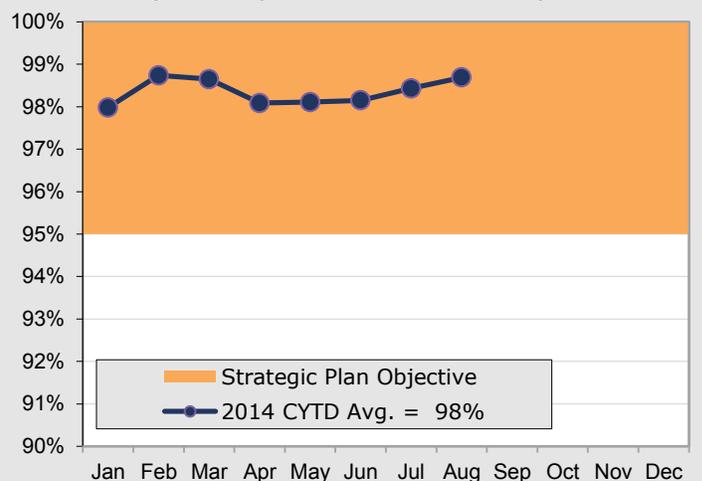
2nd Quarter 2014

Very Satisfied + Satisfied = 91%
Strategic Plan Objective = 90%

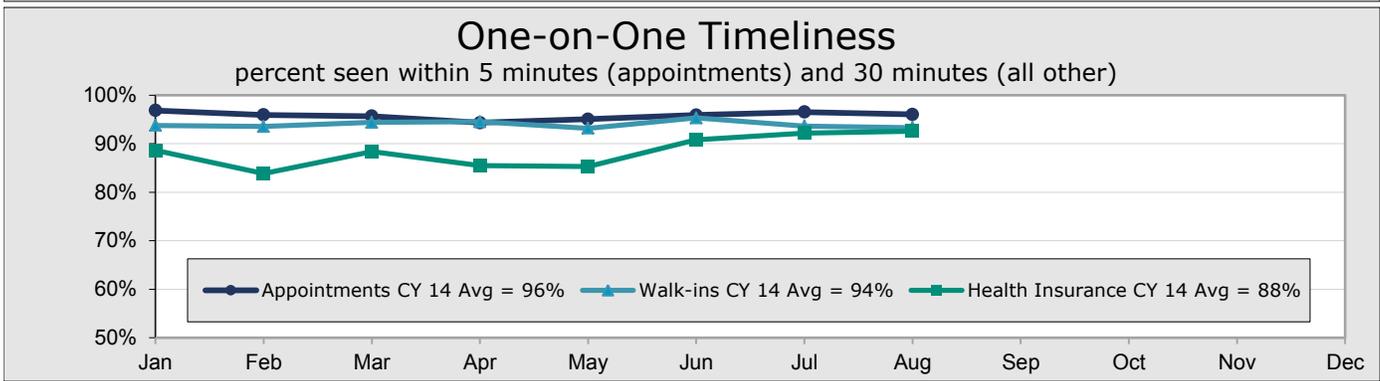
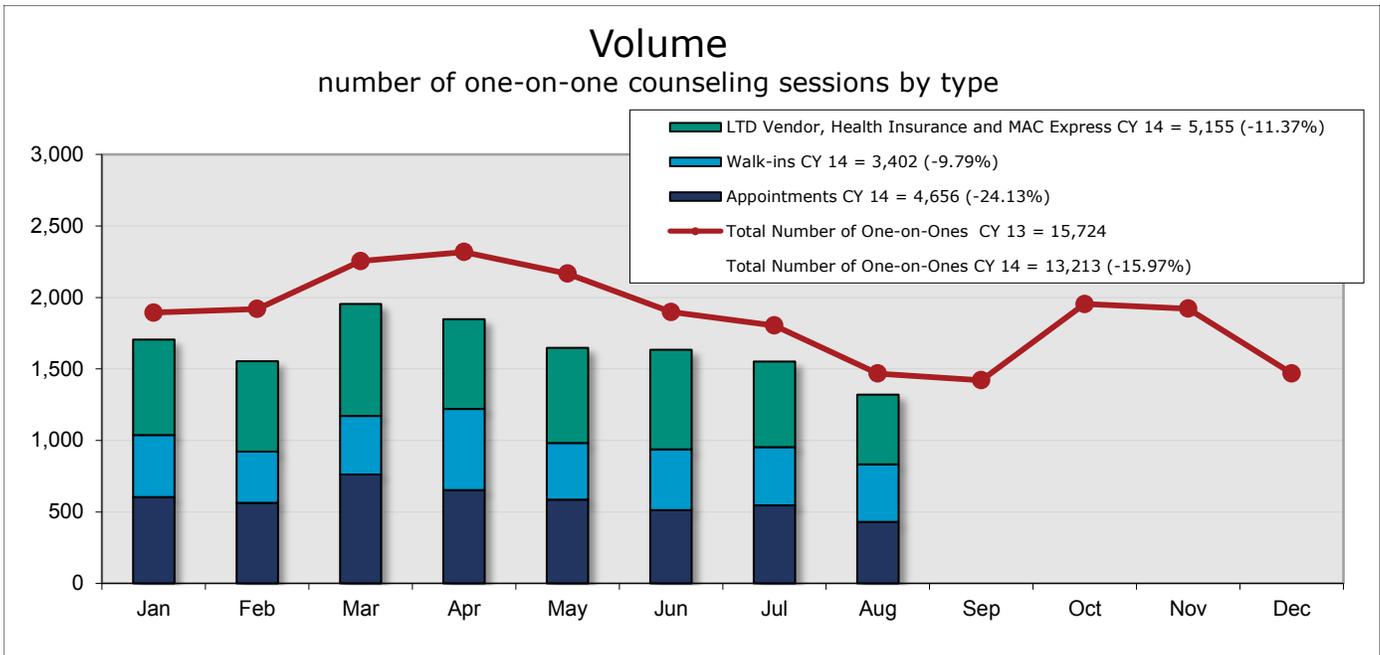


Quality

of agent response to member inquiries

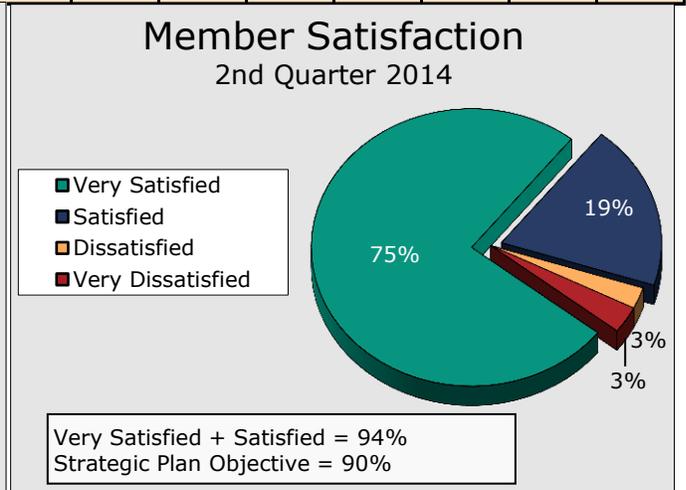
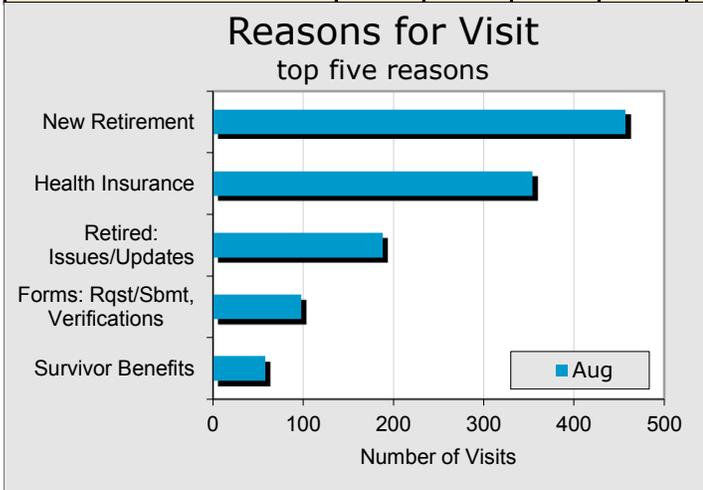


Member Advisory Center: One-on-One

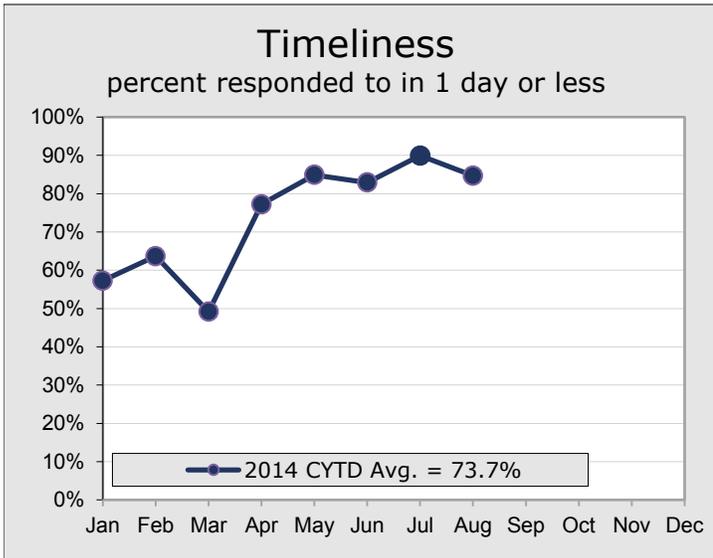
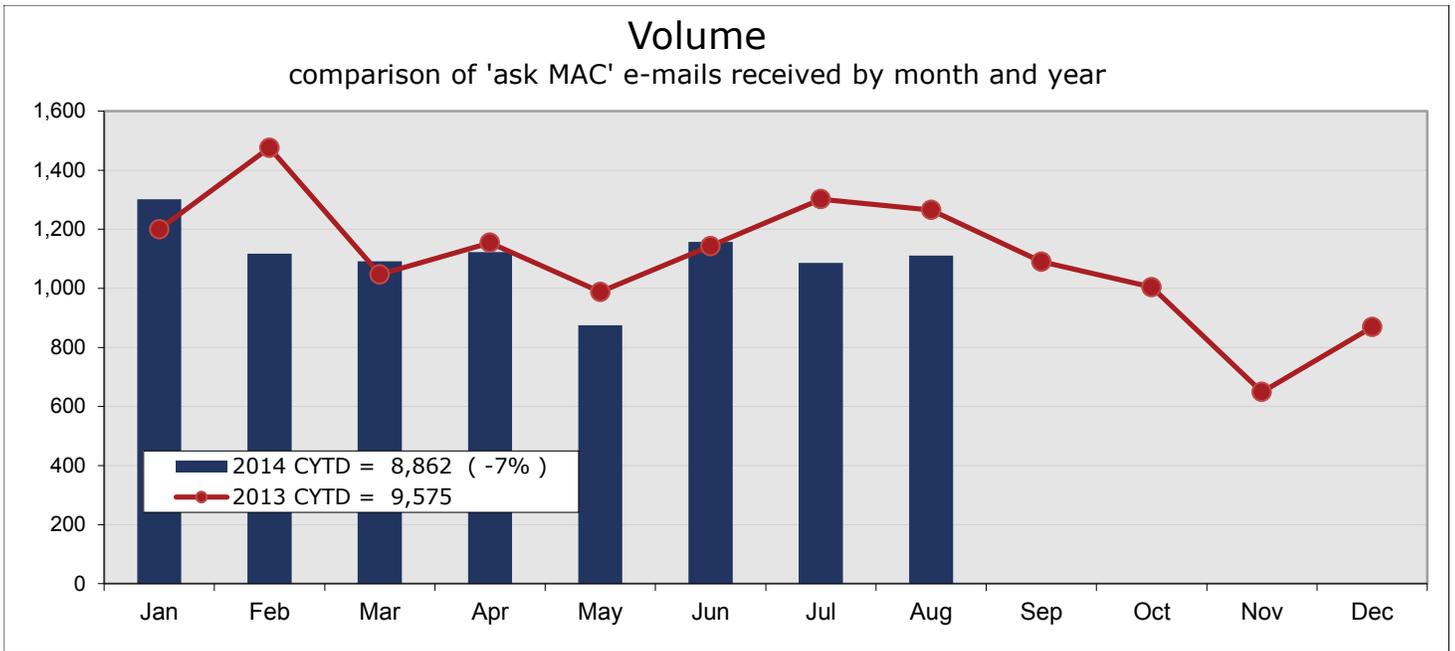


Timeliness (average wait time in minutes)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Appointments	1	1	1	2	1	1	1	0				
Walk-Ins	9	10	8	7	7	7	7	8				
Reception/MAC Express	0	0	0	0	0	0	0	0				
Health Insurance	6	7	7	7	7	5	4	5				
LTD Vendor	0	n/a	n/a	0	n/a	0	0	0				

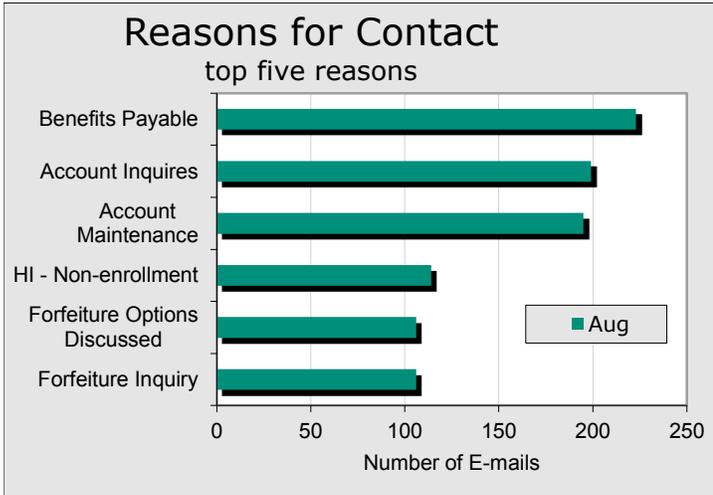
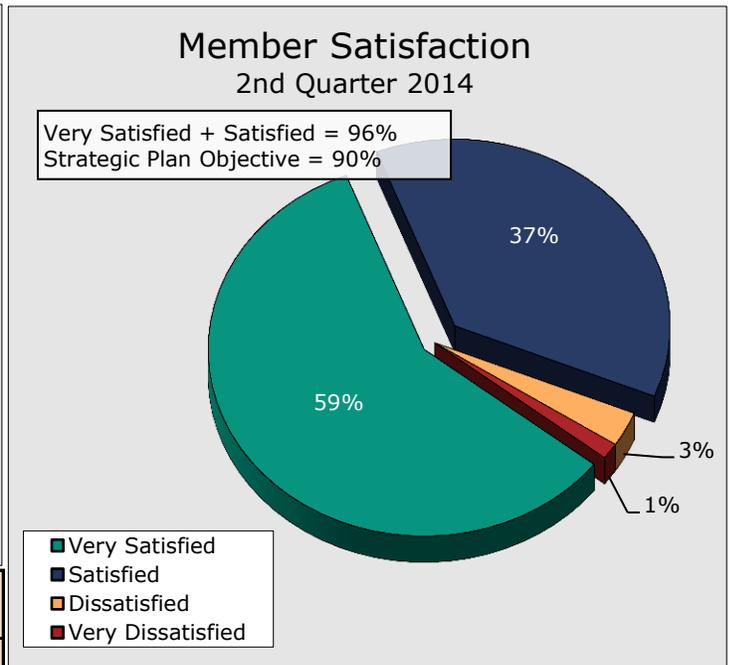


Member Advisory Center: E-Mail



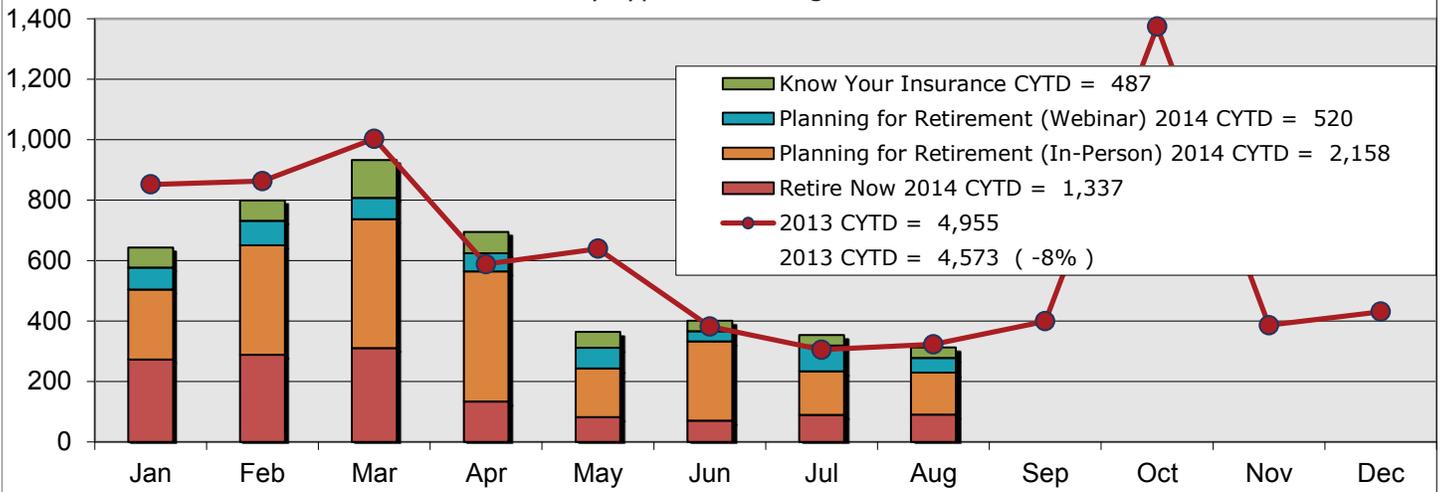
E-mail Timeliness (average response in hours)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average	24.0	21.8	25.4	16.5	9.8	12.4	8.4	10.3				



Outreach Education and Benefit Estimates

Total Meeting Attendees by type of meeting

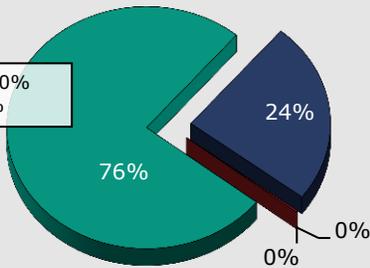


Member Satisfaction

Planning for Retirement Meetings 2nd Quarter 2014

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

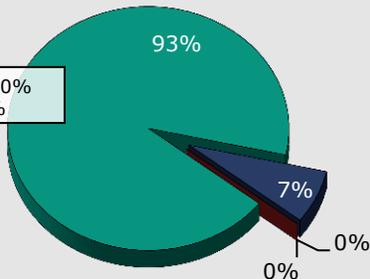
- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



Retire Now Meetings 2nd Quarter 2014

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

- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



Benefit Estimate Timeliness

percent completed within 3 business days



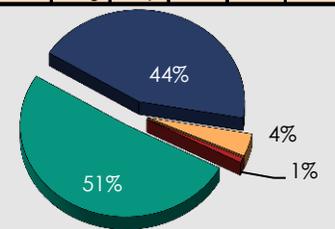
Benefit Estimate Timeliness (average TAT in days)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average TAT (days)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Benefit Estimates 2nd Quarter 2014

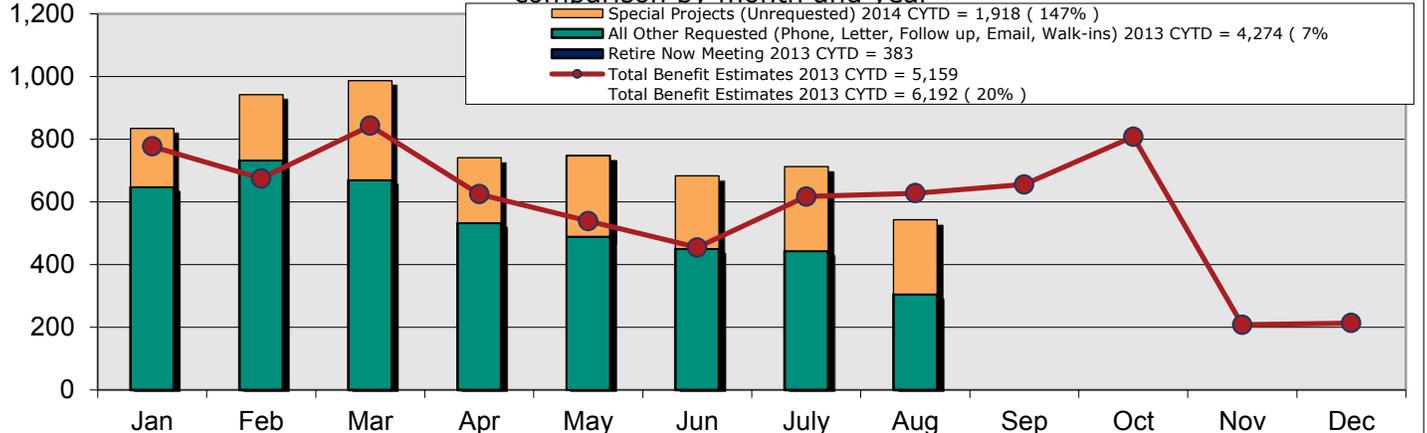
Very Satisfied + Satisfied = 95%
Strategic Plan Objective = 90%

- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied



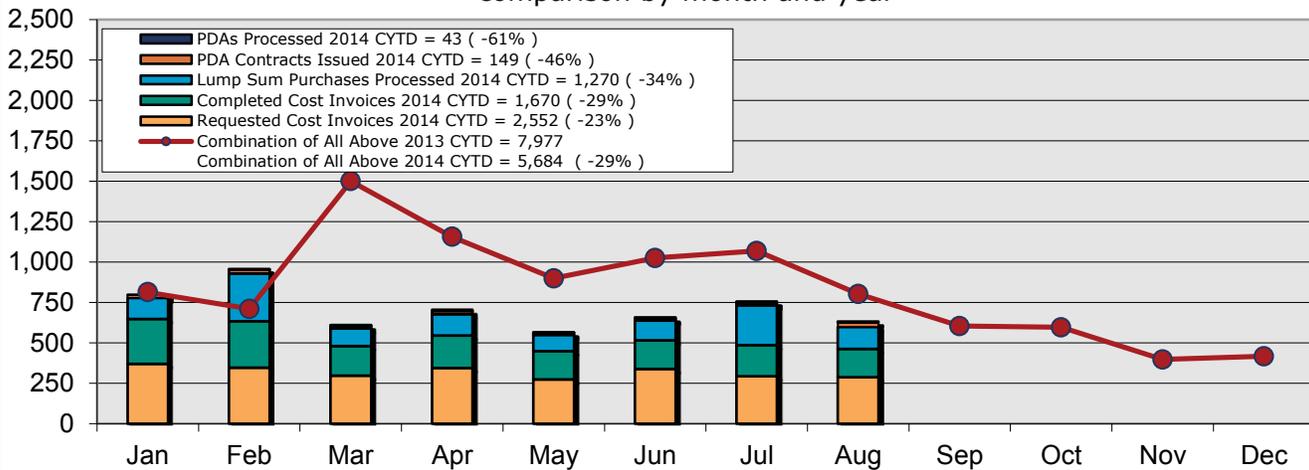
Benefit Estimate Volume

comparison by month and year



Service Purchase

Total Volume comparison by month and year



Requests Pending

as of August 31, 2014

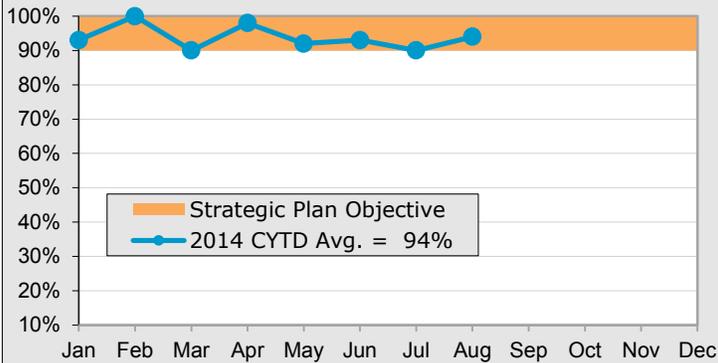
Cost Invoices Pending

471

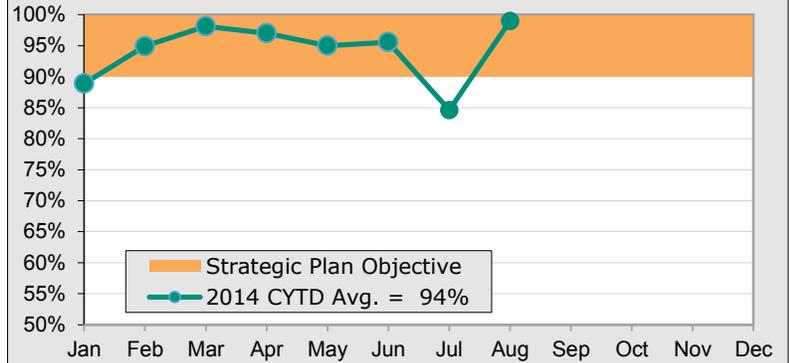
Payments Pending

15

Lump Sum Timeliness percent within 5 business days



Cost Invoices Timeliness percent within 10 business days



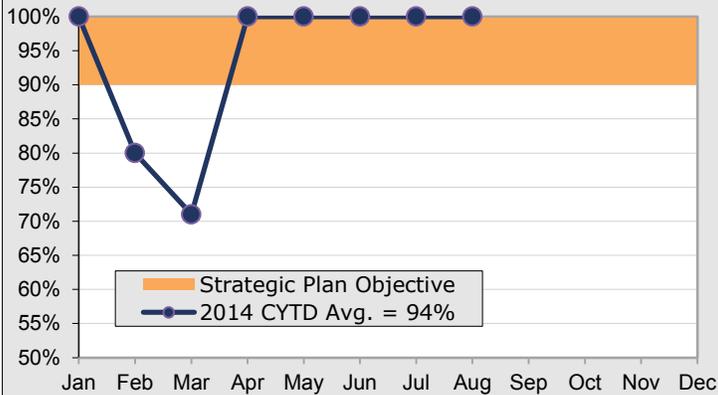
Timeliness (average turnaround time in business days)

2	1	2	1	2	2	4	2				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Timeliness (average turnaround time in business days)

6	3	3	4	5	4	7	3				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

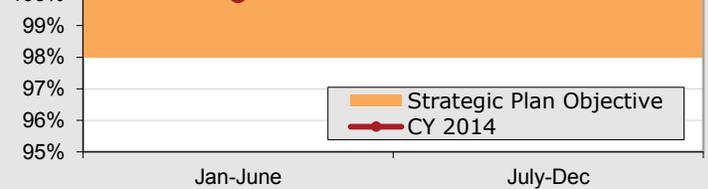
Payroll Deduction Agreement Timeliness percent within 5 business days



Timeliness (average turnaround time in business days)

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

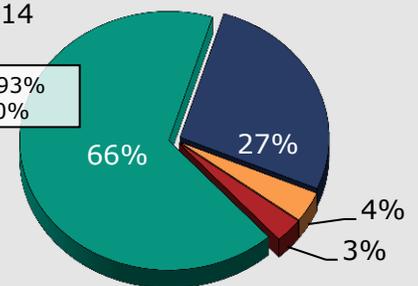
Cost Invoice Quality Rating CY 2014



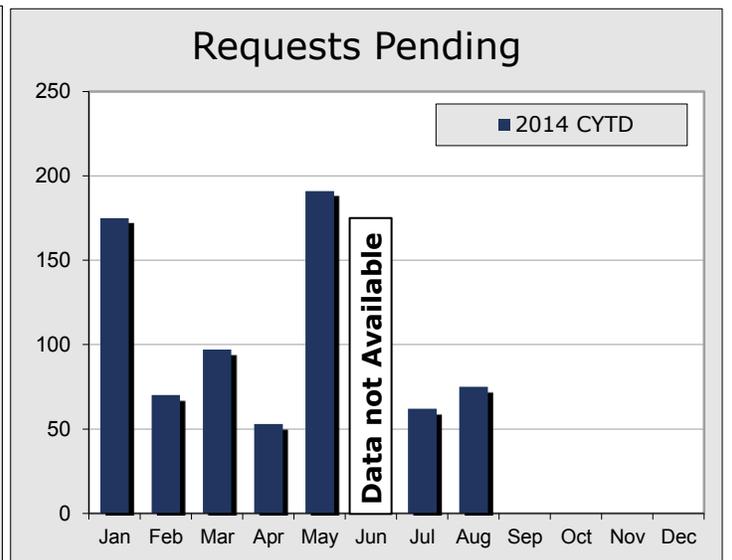
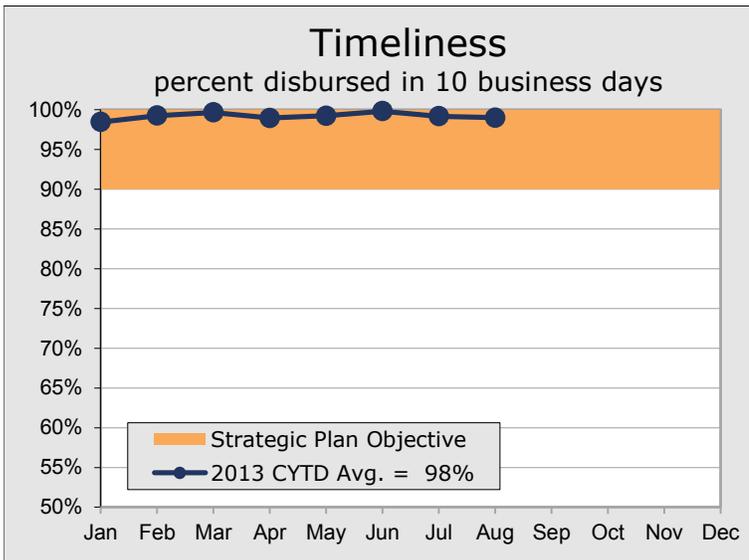
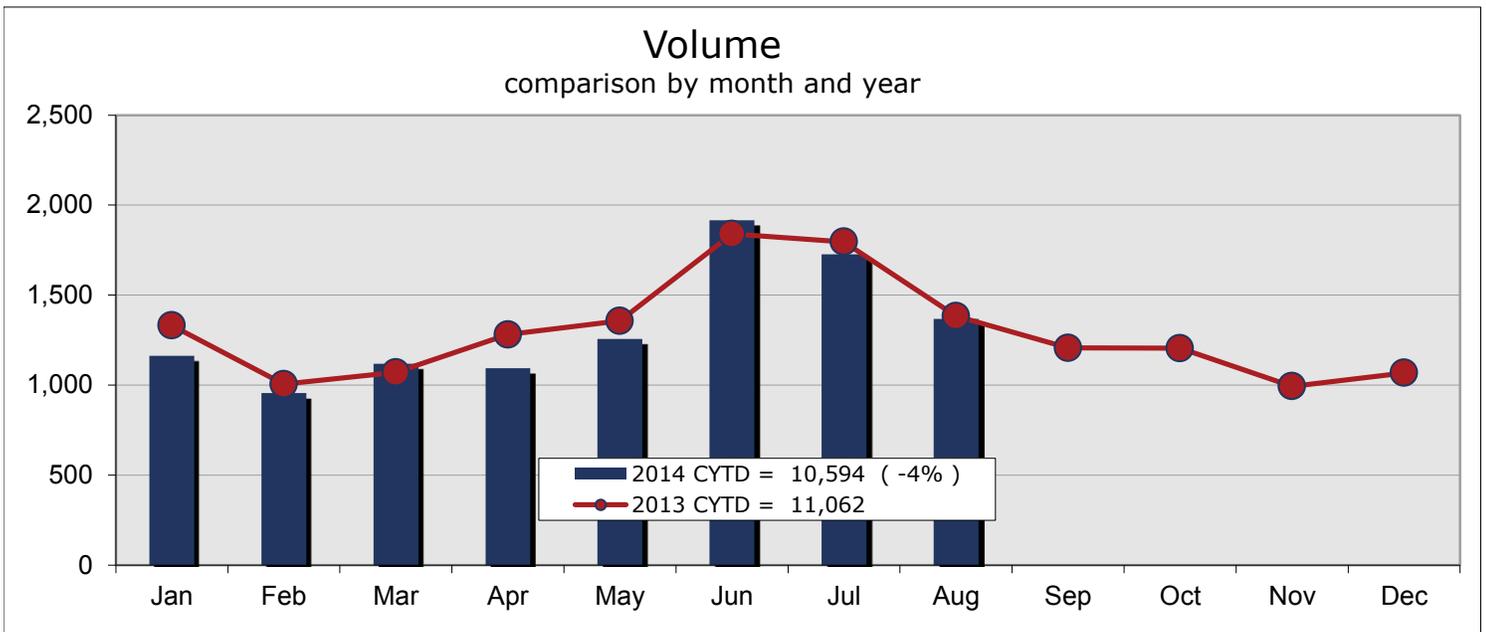
Member Satisfaction 2nd Quarter 2014

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

■ Very Satisfied
 ■ Satisfied
 ■ Dissatisfied
 ■ Very Dissatisfied

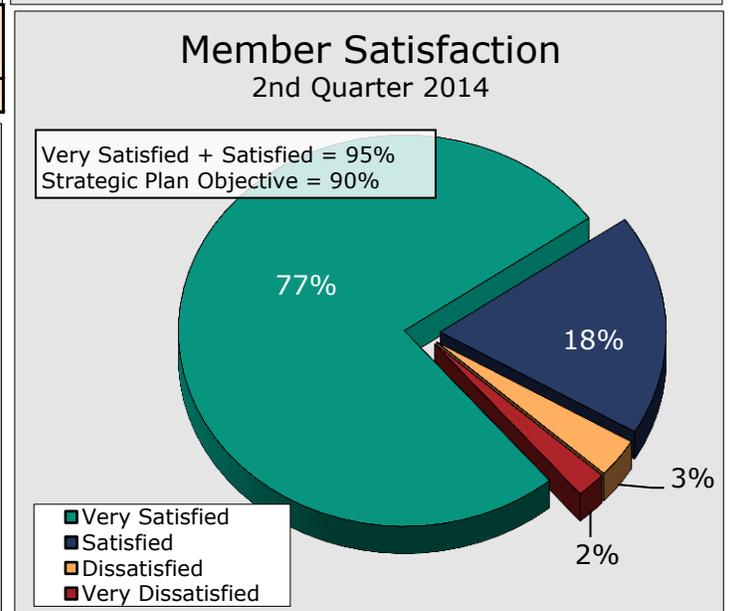
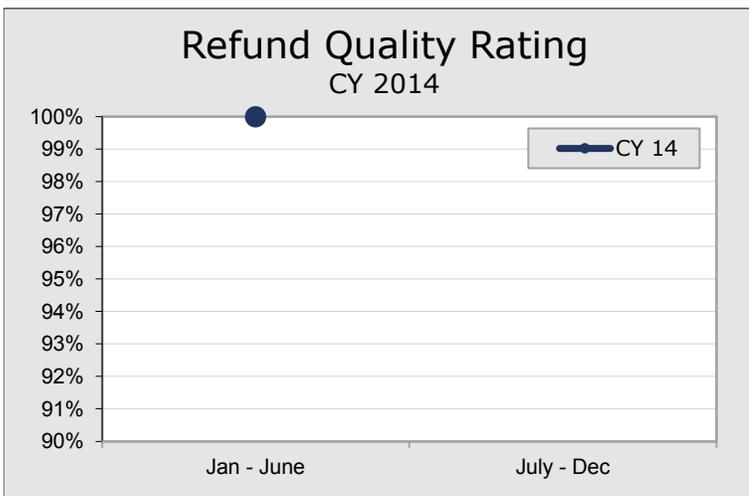


Refunds



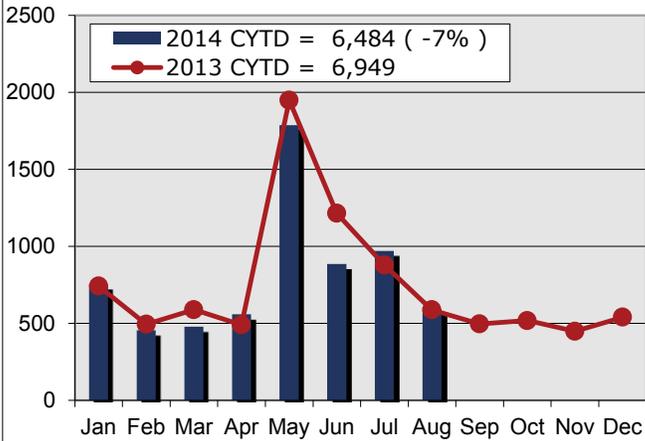
Timeliness (average turnaround time in business days)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Turnaround	3	2	2	1	1	2	2	2				

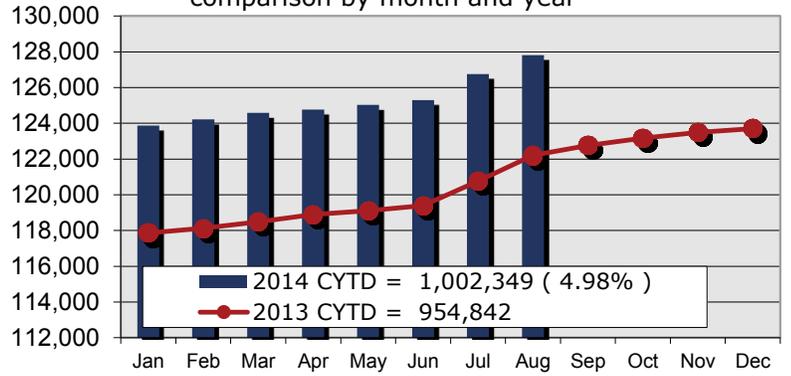


New Retirees

First Payment Volume comparison by month and year



Pension Volume comparison by month and year



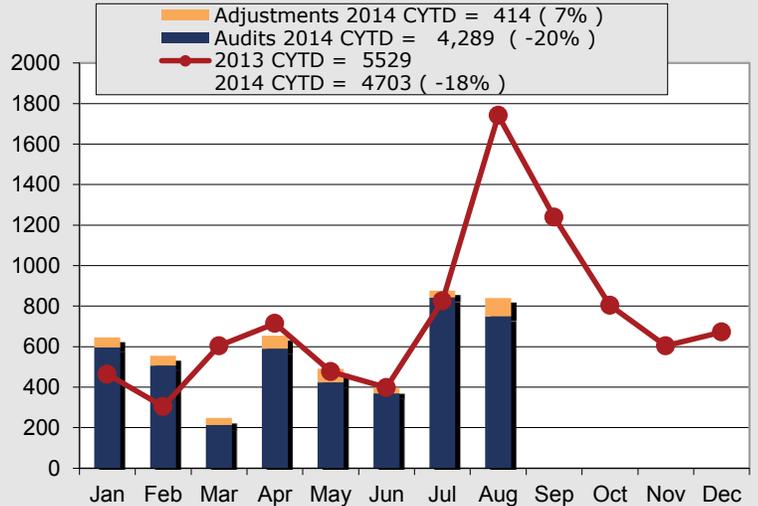
Pension Payment (percent disbursed by 1st of the month)

100%	100%	100%	100%	99.9%	100%	100%	100%					
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

First Payment Timeliness percent disbursed in 10 business days



Audits & Adjustments comparison by month and year

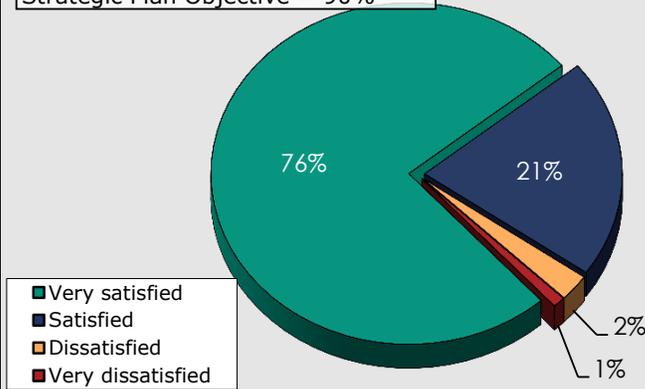


First Payment Timeliness (average turnaround time in days)

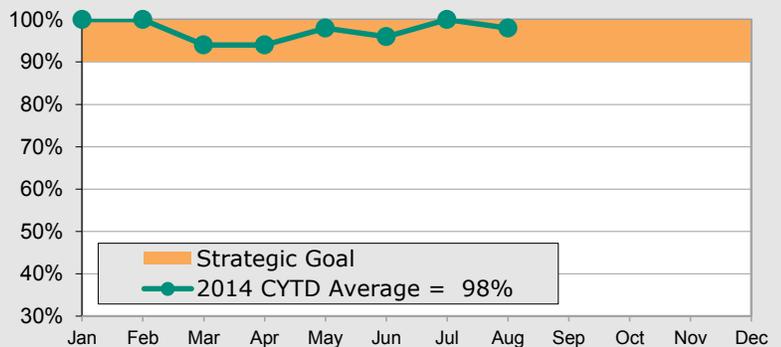
6	8	7	9	3	6	5	7					
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Member Satisfaction 2nd Quarter 2014

Very Satisfied + Satisfied = 97%
Strategic Plan Objective = 90%



Adjustments Timeliness Percent completed in 20 business days



Adjustments Timeliness (average turnaround time in days)

1	2	3	6	5	4	4	8					
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Death Notifications

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	CYTD
CY13	352	516	354	343	263	315	266	353	291	395	333	303	2,409
CY14	264	272	261	382	349	292	326						2,146
Change	-88	-244	-93	39	86	-23	60						-263
	-25%	-47%	-26%	11%	33%	-7%	23%						-11%

Packet Volume

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	CYTD
CY13	347	471	425	406	323	280	301	396	318	481	285	371	2,553
CY14	355	309	286	398	357	322	363						2,390
Change	8	-162	-139	-8	34	42	62						-163
	2%	-34%	-33%	-2%	11%	15%	21%						-6%

Payment Volume

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	CYTD
CY13	119	145	196	172	120	115	143	156	154	124	144	159	1,010
CY14	151	124	168	143	132	151	143						1,012
Change	32	-21	-28	-29	12	36	0						2
	27%	-14%	-14%	-17%	10%	31%	0%						0%

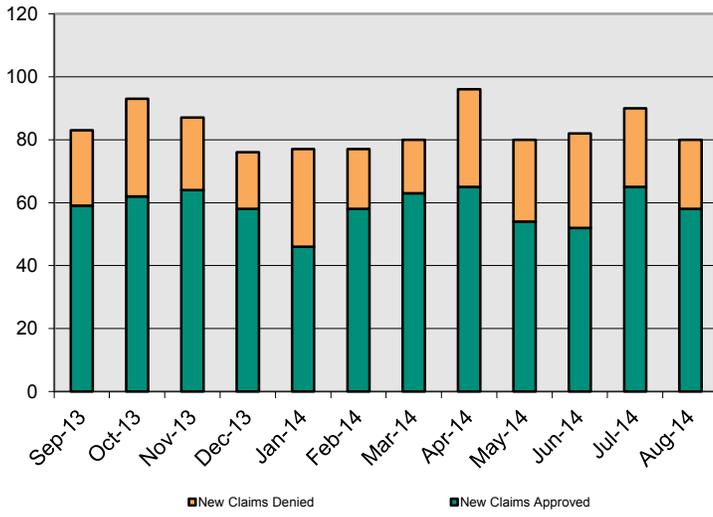
Packet Timeliness

Retired	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	CYTD
CY13	100%	97%	99%	99%	100%	99%	100%	99%	95%	99%	100%	100%	99%
CY14	100%	100%	100%	99%	98%	99%	99%						99%
Change	0%	3%	1%	0%	-2%	0%	-1%						0%
Non-Ret	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	CYTD
CY13	70%	81%	74%	77%	75%	89%	48%	63%	85%	88%	90%	83%	73%
CY14	67%	77%	78%	85%	86%	74%	70%						77%
Change	-4%	-5%	5%	10%	15%	-17%	46%						3%

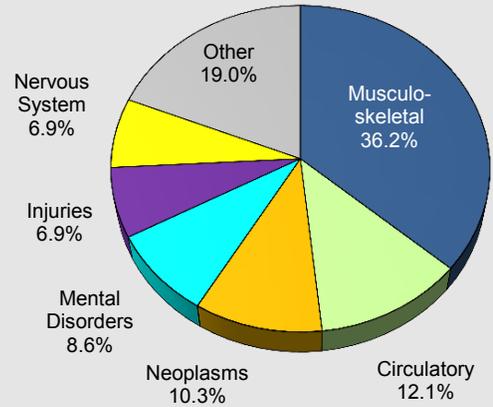
ASRS Disability Plans - Monthly Highlights

August 2014

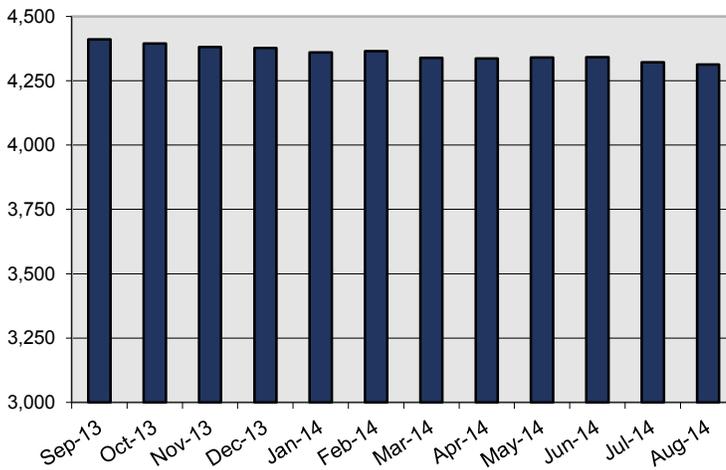
New Claims Processed



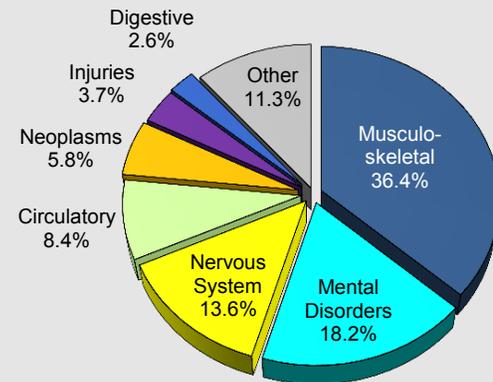
New Claims Approved



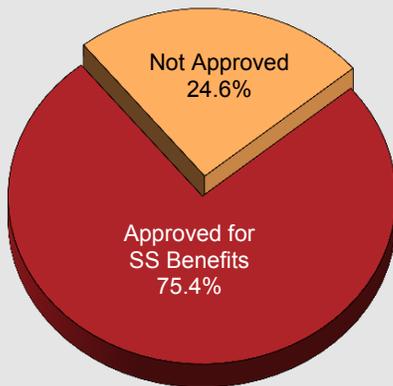
Open LTD Claims



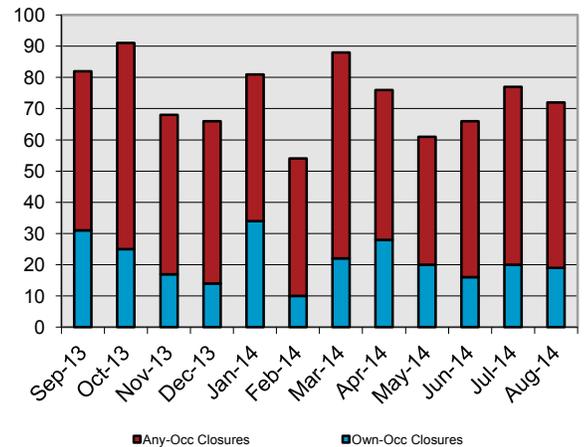
Open LTD Claims



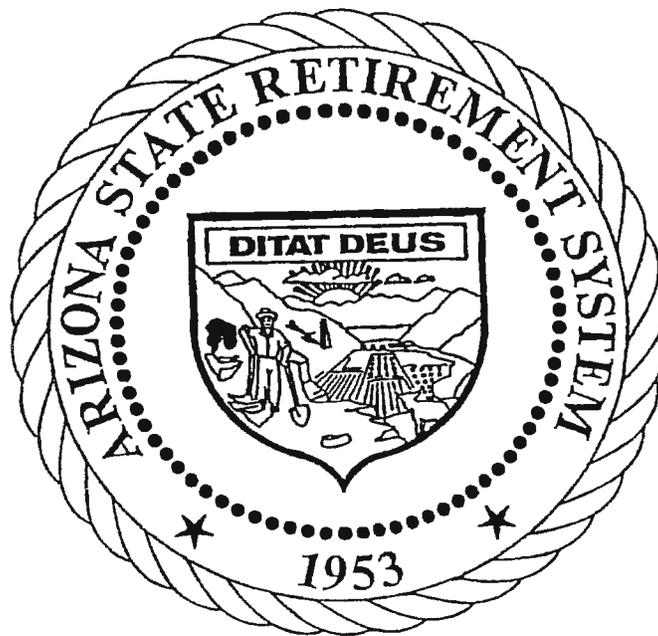
SS Approval Percentage



Active Claim Closures



Director's Report Budget & Staffing



Arizona State Retirement System
FY 2015 Appropriated Budget
(as of September 30, 2014)

	APPROPRIATIONS FISCAL YEAR 2015	EXPENDED YTD	% EXPENDED
OPERATING BUDGET			
Personal Services	\$ 12,757,000	\$ 2,563,700	20.10%
Employee Related Expenses	\$ 5,021,000	\$ 1,046,900	20.85%
Professional & Outside Services	\$ 1,079,300	\$ 208,100	19.28%
Travel	\$ 78,600	\$ 18,100	23.03%
Other Operating Expenses	\$ 2,684,800	\$ 379,800	14.15%
Equipment	\$ 389,500	\$ 16,200	4.16%
Operating Subtotal	\$ 22,010,200	\$ 4,232,800	19.23%
OTHER APPROPRIATIONS			
Long Term Disability Administration	\$ 2,800,000	\$ 404,200	14.44%
Oracle Forms and Reports Modernization (Yr. 2)	\$ 4,484,500	\$ 218,600	4.87%
TOTAL FY 2014 Appropriated Funds	\$ 29,294,700	\$ 4,855,600	16.58%

	APPROPRIATIONS PRIOR YEAR	EXPENDED TO DATE	% EXPENDED
PRIOR YEAR LEGISLATIVE APPROPRIATIONS (NON-LAPSING)			
FY 2014 - Oracle Forms and Reports Modernization (Yr. 1)	\$ 1,390,000	\$ 1,255,300	90.31%
FY 2014 - HB 2562 - 401(a) and LTD for Ineligibles	\$ 502,400	\$ 40,300	8.02%
FY 2012 - SB 1614 - ASRS Contribution Rate	\$ 600,000	\$ 595,700	99.28%
FY 2011 - HB 2389 - ASRS Plan Design Changes	\$ 1,341,700	\$ 1,244,900	92.79%

	APPROPRIATIONS REMAINING	EXPENDED YTD	% EXPENDED
PRIOR YEAR OPERATING APPROPRIATIONS (NON-LAPSING)			
FY 2011, ASRS Operating Budget & LTD Admin	\$ 796,800	\$ -	0.00%

Budget Summary for Fiscal Year 2015 As of September 30, 2014

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, 2014 through June 30, 2015. 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 six pay periods (23.1 % of the annual payrolls) of fiscal year 2015.

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. Expended year-to-date amounts reflect payments for services through 8/31/2014.

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

Non-Lapsing Appropriations for Legislative Initiatives

The amount appropriated by the Legislature for the implementation of:

- FY 2014 - Oracle Forms and Reports Modernization (Yr. 1)
- FY 2014 - HB 2562 - 401(a) and LTD for Ineligibles
- FY 2012 - SB 1614 - ASRS Contribution Rate
- 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 2015, 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 2015, CONTINUOUSLY APPROPRIATED REPORT

(with summarized Appropriated Expenses)

DESCRIPTION	ESTIMATED ANNUAL EXPENSES <small>(Projections updated quarterly)</small>	EST. ANNUAL EXPENSES AS % OF AUM	EST. ANNUAL EXPENSES PER MEMBER
Custodial Banking, Security Lending and Master Cash STIF Fees	2,692,000		
Internal Investment Management (Salaries and Benefits)	1,500,000		
<u>Public Markets</u>			
External Investment Management Fees	77,298,000		
Transactional and Other Fees	3,865,000		
<u>Private Markets</u>			
Private Equity Management Fees	39,160,000		
Private Equity Performance Incentive and Other Fees	33,286,000		
Real Estate Management Fees	25,523,000		
Real Estate Performance Incentive and Other Fees	24,246,000		
Opportunistic Management Fees	15,000,000		
Opportunistic Performance Incentive and Other Fees	30,000,000		
Investment Management Expenses	\$ 252,570,000	0.730%	\$ 465.74
Investment Consulting Services	4,310,000		
Investment Related Legal Services	881,000		
Investment Electronic Information Services	1,714,000		
External Financial Consulting Services	75,000		
Investment Related Consulting, Legal and Information Services	\$ 6,980,000	0.020%	\$ 12.87
Rent	1,505,000	0.004%	\$ 2.78
Actuarial Consulting Fees	1,225,000	0.004%	\$ 2.26
Retiree Payroll (Disbursement Administration)	2,215,500	0.006%	\$ 4.09
Total Continuously Appropriated Expenses	\$ 264,495,500	0.765%	\$ 487.73
*Total Current Year Appropriated Expenses	\$ 29,794,700	0.086%	\$ 54.94
<small>*Includes estimate prior year non-lapsing legislative appropriations of \$500,000</small>			
Total Expenses (Continuously Appropriated and Appropriated)	\$ 294,290,200	0.851%	\$ 542.67

ASRS Estimated Total Market Value of Assets Under Management (AUM) as of June 30, 2014

\$ 34,584,497,000

ASRS Total Membership as of June 30, 2013

542,300

Continuously Appropriated Expenses for FY 2015 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).
 - Transactional and other fees include foreign taxes and commissions on derivatives and other incidental costs.
- Private Markets
 - Private Equity, Real Estate and Opportunistic 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.

Investment 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.
-

The report includes projected expenditures for the current fiscal year. Actual expenditures will be reported monthly and estimated annual expenses will be reviewed and adjusted quarterly.

ASRS Cost Savings Initiatives

Estimated as of June 30, 2013, in Millions of Dollars

Action	Calendar Year Proposed	Calendar Year Adopted	Reduction in Total Contribution Rate*	Annual Reduction in Total Contribution Amount	Present Value of Savings on Closed Group Basis		Present Value of Savings on Open Group (No Growth**) Basis	
					Past	Future	Past	Future
Cost Savings Initiatives Contained in Current Valuation & Reflected in Lower Current Contribution Rate¹								
1 Change basis for service purchases from normal cost to actuarial present value (APV)	2003	2004	0.60%	\$52.51	\$667.40	\$366.18	\$667.40	\$1,141.52
2 Correction of Permanent Benefit Increase (PBI) reserve	2003	2004	0.04%	\$3.50	\$44.30	\$24.41	\$44.30	\$24.41
3 Decrease interest credited on withdrawn contributions from 8% to 4%	2004	2004	0.27%	\$23.63	\$349.95	\$164.79	\$349.95	\$513.70
4 Decrease interest credited on withdrawn contributions from 4% to 2%	2012	2012	0.44%	\$38.51	\$40.58	\$268.55	\$40.58	\$837.17
5 Redesign non-retired survivor benefits***	2013	2013	0.02%	\$1.75	\$1.84	\$12.20	\$1.84	\$38.04
sub-total, past and future			1.37%	\$119.90	\$1,104.07	\$836.13	\$1,104.07	\$2,554.84
sub-total, savings in current valuation			1.37%	\$119.90	\$1,940.20		\$3,658.91	
Cost Savings Initiatives Contained in Future Experience²								
6 Long Term Disability (LTD) program design changes	2003	2004	0.02%	\$1.75	\$26.52	\$12.20	\$26.52	\$38.04
7 Reimbursements for early retirement incentives	2003	2004	0.18%	\$15.75	\$233.08	\$109.83	\$233.08	\$342.39
8 Increase interest rate on payroll deduction agreements (PDAs) from 0% to 8%	2004	2004	0.16%	\$14.00	\$207.62	\$97.63	\$207.62	\$304.35
9 Pop-up restrictions	2005	2006	0.41%	\$37.51	\$415.67	\$261.58	\$415.67	\$815.43
10 Rescinding modified Deferred Retirement Option Plan (mDROP)	2005	2006	0.50%	\$43.72	\$499.68	\$304.89	\$499.68	\$950.43
11 LTD changes to offsets and pre-existing condition period	2005	2007	0.15%	\$13.13	\$128.03	\$91.56	\$128.03	\$285.43
12 Recapture of unclaimed monies	2007	2008	0.01%	\$0.56	\$5.59	\$3.91	\$5.59	\$12.17
13 Eliminate 80% cap on retirement benefits	2008	2009	0.04%	\$3.50	\$18.13	\$24.41	\$18.13	\$76.09
14 Require 20/20 Rule for dual employment situations	2009	2009	0.04%	\$3.25	\$16.77	\$22.66	\$16.77	\$70.65
15 Eliminate enhanced refunds****	2005	2010	0.16%	\$14.07	\$31.19	\$98.12	\$31.19	\$305.87
16 Replace Rule of 80 with Rule of 85****	2006	2010	0.30%	\$26.38	\$58.47	\$183.96	\$58.47	\$573.48
17 Replace 36-month average salary with 60-month average****	2006	2010	0.25%	\$21.99	\$48.73	\$153.35	\$48.73	\$478.04
18 Apply Alternative Contribution Rate (ACR) to return-to-work****	2011	2011	0.25%	\$21.99	\$48.73	\$153.35	\$48.73	\$478.04
19 Compute service purchases with 6% discount rate	2012	2012	0.08%	\$7.08	\$7.46	\$49.37	\$7.46	\$153.91
20 Eliminate service purchases through partial lump sums	2012	2012	0.07%	\$5.74	\$6.05	\$40.03	\$6.05	\$124.78
21 Eliminate Permanent Benefit Increases for future members	2013	2013	0.11%	\$9.63	\$10.15	\$67.16	\$10.15	\$209.35
Non-ASRS Initiatives								
22 Replace Rule of 85 with 55&30 or 60&25****	2011	2011	0.00%	\$0.60	\$1.30	\$4.18	\$1.30	\$13.04
23 Change pre-retirement death benefit to sum of employee and employer balances (ASRS Initiative)	2011	2011	0.04%	\$3.22	\$7.13	\$22.45	\$7.13	\$70.00
24 Adopt 6-month delay in contributions from state members****	2011	2011	-0.13%	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25 Prospective cost-shift of 6-month delay (not included in totals)****	2011	2011	N/A	(\$11.63)	(\$25.48)	(\$81.08)	(\$25.48)	(\$252.74)
sub-total, past and future				\$243.87	\$1,770.30	\$1,700.64	\$1,770.30	\$5,301.49
sub-total, savings emerging in experience			2.64%	\$243.87	\$3,470.94		\$7,071.79	
GRAND TOTAL			4.01%	\$363.77	\$5,411.14		\$10,730.70	

*These changes to the total contribution rate are multiplied by current payroll to give annual savings amounts in the next column. The annual savings amounts are then converted to the present values shown in the last two columns. These values include both accumulated past savings and estimated future savings. The savings from basing service purchases on actuarial present value is a reduction in future service liabilities. For the reduction in the interest crediting rate and the changes to LTD offsets and pre-existing condition period, the savings arise from reductions in future service and past service liabilities. Other Actuarial Valuation Basis savings are reductions to past service liabilities, i.e., capitalizations of the annual savings amounts over 30 years. Recapture of unclaimed monies will occur every year, but the numbers above are converted to a level annual savings amount.

** No growth scenario means that the projection maintains the size and age distribution characteristics of the current active population.

*** Redesign includes removal of \$5,000 requirement to elect an annuity and elimination of the present value calculation.

**** Savings will increase each year, from zero to the open-group amount, as new hires become subject to the new provisions.

*****6-month delay will eliminate contributions for members with less than 6 months of service at the valuation date, but will transfer costs to other members and employers.

Cost will increase each year, from zero to the open-group amount as new hires are subject to the new rules.

Costs above give the combined effect of each bill -- if a bill changes three plan provisions, the cost of each reflects the adoption of the other two provisions.

Some of these changes will not be reflected in their entirety in the current valuation report, but will be captured in future reports as actuarial gains. For example, the Plan valuation contains no assumption on Payroll Deduction Agreements (PDAs), so the absence of interest charges in the past has been reflected as an actuarial loss. The change to 8% interest charges will end the losses and eventually reduce the total contribution rate by 0.16%.

Explanation of Cost Reduction Initiatives

¹ASRS changed the basis for service purchases from the average normal cost rate to the actuarial present value rate. In this way, members who buy service pay the entire cost of their service purchases, and the purchases have no effect on contribution rates.

¹ASRS reduced the rate of interest credited on members' account balances from 8% to 4% as of July 1, 2005.

¹The 2001 addition to the Permanent Benefit Increase reserve was overstated in that year. ASRS corrected the reserve and thereby reduced the reserve committed to future Permanent Benefit Increase awards.

²Members can enter into Payroll Deduction Agreements to purchase service over time through payroll deduction. ASRS revised the method of calculating payments under these agreements to include 8% annual interest.

²ASRS members have been able to change the form of benefit they elect (e.g., joint & survivor to straight life) after they have begun to receive payments, and to do so as many times as they want whenever they want. By legislative action, this ability will be limited to a one-time election to change to a single life pension.

²Some ASRS employers have offered their employees incentives to retire early. These incentives can increase ASRS liabilities. By legislative action, future incentives will be funded by the employers who offer them.

²By legislative action, the modified Deferred Retirement Option Plan, which would have allowed members to earn as much as six years of service for three years of work, was rescinded.

²The legislature closed certain loopholes in the Long Term Disability program that allowed members to receive benefits for a longer period than intended.

²Legislation increased the offsets for Social Security income to 85% and extended the pre-existing condition period to six months.

²2008 Legislation exempts ASRS from unclaimed property procedures and allows ASRS to recapture assets abandoned after participant's age 73.5.

²2009 Legislation eliminated the 80% cap on benefits that had been in place since 2001.

²2009 Legislation requires a member to meet membership (20/20 Rule) in ASRS before contributing to a second employer, subject to a grandfathering clause.

²Upon withdrawal, members receive 25-100% of employer contributions depending on years of service. 2010 Legislation eliminates the return of employer contributions for members hired on or after July 1, 2011. Since 2010 changes are for prospective members only, we show open-group present values.

²Normal retirement can be achieved when a member's age + years of service equals 80 (points). 2010 Legislation requires members hired on or after July 1, 2011 to reach 85 points for normal

²Retirement benefits are calculated based on an average of the member's highest 36 months of salary in the 10 years prior to retirement. 2010 Legislation substitutes a 60 month average for members hired on or after July 1, 2011.

These rows represent legislative initiatives from non-ASRS sources.

2011 legislation replaced rule of 85 for members hired after 6/30/2011 with age 55 and 30 years of service or age 60 with 25 years of service.

2011 legislation changed the split of member/employer contributions from 50%/50% to 53%/47%, effective 7/1/2011

2011 legislation instituted a 6-month delay in contributions from or on behalf of members with less than 6 months of service, effective 7/1/2011.

**Arizona State Retirement System
Staffing Report
(September 30, 2014)**

ASRS by Division	247 Full Time Equivalents (FTEs)	New Hires	New Exits	Vacancies	Vacancy Rate
Administrative Services Division (ASD)	16	1.0	0.0	1.5	9.38%
Director's Office (DIR)	11	1.0	0.0	0.0	0.00%
External Affairs (EAD)	11	1.0	0.0	0.0	0.00%
Financial Services (FSD)	62	0.0	0.25	2.75	4.44%
Technology Services (TSD)	48	2.0	2.0	5.0	10.42%
Internal Audit (IAD)	5	0.0	0.0	0	0.00%
Investment Management (IMD)	11	0.0	0.0	2.0	18.18%
Member Services (MSD)	83	0.0	1.0	3.0	3.61%
	247	5.0	3.25	14.25	5.77%

Turnover	September 2014 New Hires	September 2014 Exits	Total Exits (Last 12 Months)	Annualized Turnover %
	5.0	3.25	29	12.58%

DIR – Administrative Project Analyst: Currently recruiting for one position
 IMD – Assistant Portfolio Manager: Currently recruiting
 TSD – Help Desk Analyst: Currently recruiting
 TSD – Software Engineer (2): Currently recruiting for two positions
 TSD – Project Management/Business Analyst: Currently recruiting
 TSD – Technical Lead: Currently recruiting

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	● ○ ○	
FSD	Monthly Pension Payroll Processing	● ○ ○	
FSD	New Retiree Processing	○ ● ○	During September 2014, New Retiree Processing did not meet their strategic objectives for audits and adjustments. Two experienced FTEs are on extended leave and three new hires are in training. New Retiree Processing will return to normal risk once training has been completed and all FTEs have returned.
MSD	New Retiree Processing	● ○ ○	
FSD	Survivor Benefit Processing	● ○ ○	
MSD	Survivor Benefit Processing	● ○ ○	

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	Refund Processing	●○○○	
MSD/FSD	Service Purchase Processing	●○○○	
FSD	Records Management (data processing/imaging)	●○○○	
IA	Internal Audit	●○○○	
EA	Employer Relations	●○○○	
EA	Rule Writing	●○○○	Up to September 2014, limited rule writing functions had been carried out by ASRS staff and through the procurement of outside professional services. In mid-September 2014, the Rules Writer position was filled.
EA	Legislative Relations	●○○○	
EA	Communications/Media Relations	●○○○	
EA	Web Services	●○○○	
EA	Health Insurance/LTD Benefits Administration and Communication	●○○○	
MSD	LTD Member Contacts, Benefit Processing	●○○○	

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	Health Insurance Member Contacts, Benefit Processing Transfer Processing		
MSD	Health Insurance		
FSD	Transfer Processing		
FSD	General Accounting		
FSD	Contribution Collections and Posting		
TSD	Network Support		The addition of the security professional has helped in our security activities while demonstrating the need for more resources to continue to mature the security program. In addition, our current daily tasks continue to consume our Tier I and Tier II resources making it difficult to manage user requests and complete the system upgrades. Network Support is currently recruiting for a Help Desk Analyst.
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 is 41 (27 FTEs and 14 external resources). In September one FTE left and one external resource left. Currently recruiting for four FTEs, one Technical lead, two Software Engineers and one Project Manager/Business Analyst
IMD	Investment Management		
DIR	Board/Executive Staff Support		The management support staff struggled to meet business needs and strategic objectives. Recruitment for one position was completed in

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			
			September; recruitment for one remaining vacancy is underway. Greater than normal risk will continue until the recruitment is complete and the new hires complete training.
DIR	Strategic Planning/Analysis	○●○	Recruitment for one position was completed in September 2014. Normal Risk will be noted once training has been completed.
ASD	Human Resources	●○○	
ASD	Training and Development	●○○	
ASD	Contracts and Procurement	●○○	
ASD	Facilities Management	●○○	
ASD	Budget Administration	●○○	

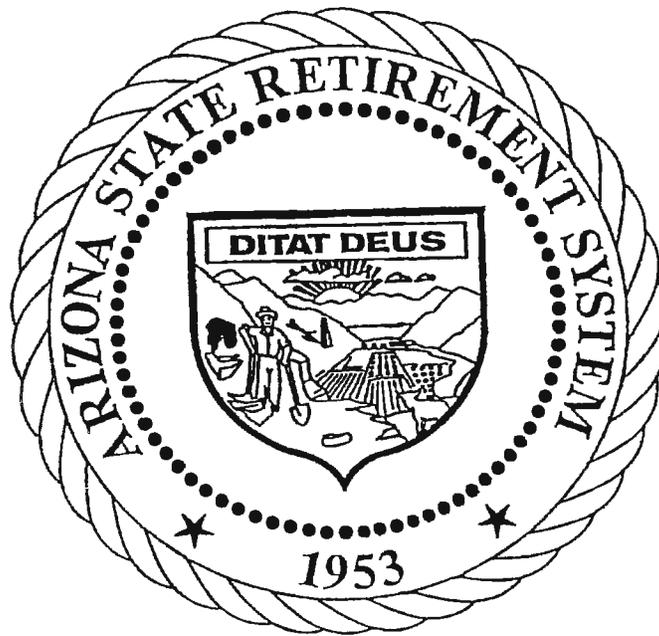
ASRS 2014 Out of State Travel Expenditures

*Numbers are Unaudited

<u>Date</u>	<u>Purpose</u>	<u>Location</u>	<u>Attendee</u>	<u>Cost</u>
July 27 - 30, 2014	NCSSSA Conference	New Orleans, LA	Michele Briggs	\$1,686.65
July 27 - Aug. 2, 2014	2014 AICPA Business Valuation Schools	Denver, CO	Kerry White	\$1,171.40
July 29- Aug. 2, 2014	ALEC Conference	Dallas, TX	Nicholas Ponder	\$1,979.14
August 2 - 6, 2014	NASRA Conference	Asheville, NC	Paul Matson	\$2,834.66
August 2 - 6, 2014	NASRA Conference	Asheville, NC	Dick Jacob	\$2,780.06
August 6 - 10, 2014	DEFCON Convention	Las Vegas, NV	Nick Dalmolin	\$1,389.83
August 6 - 10, 2014	DEFCON Convention	Las Vegas, NV	John Davis	\$1,093.61
August 18 - 22, 2014	NCSL Conference	Minneapolis, MN	Nicholas Ponder	\$2,463.96
August 23 - 27, 2014	NGIP Conference	Philadelphia, PA	Bruce Pampel	\$2,512.70
September 16 - 19, 2014	Due Diligence Annual Meetings	Cincinnati, OH; San Francisco, CA San Jose, CA Los Angeles, CA	Karl Polen	\$451.76
September 27 - Oct. 3, 2014	2014 NASIO Conference	Kissimmee, FL	Gary Dokes	\$157.25
			Total:	\$13,683.83

*Final amounts may vary due to adjustments in per diem and reimbursements.

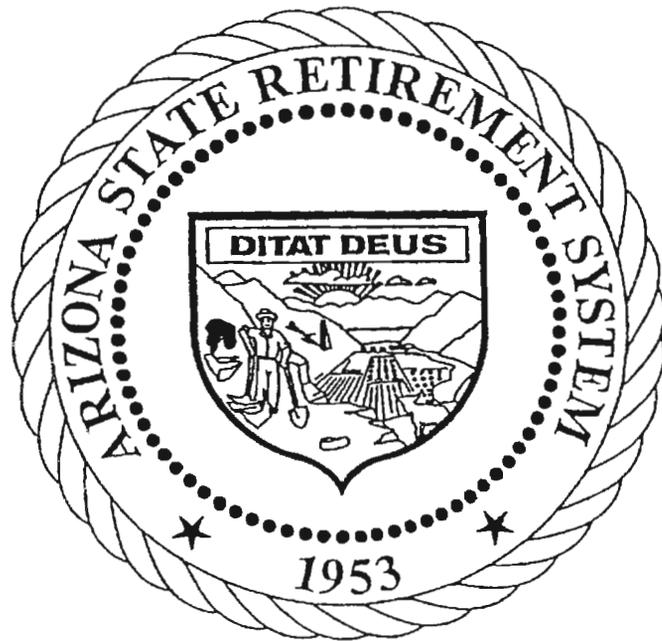
Director's Report Cash Flow Statement



ARIZONA STATE RETIREMENT SYSTEM
COMBINED STATEMENT OF CHANGES IN TOTAL FUND CASH
FOR THE MONTH ENDED SEPTEMBER 30, 2014

	Retirement Plan Fund	Retirement System Fund	Health Benefit Supplement Fund	Long-Term Disability Fund	Current Period September	Fiscal 2015 YTD September	Fiscal 2014 YTD September
ADDITIONS							
Contributions							
Member contributions	\$ 82,887,985	\$ 3,149	\$ -	\$ 867,825	\$ 83,758,960	\$ 224,748,884	\$ 217,619,386
Employer contributions	79,587,030	3,149	4,260,838	867,784	84,718,801	225,873,280	218,105,342
Alternative contributions (ACR)	2,122,709	-	45,601	13,680	2,181,989	5,244,989	4,821,262
Transfers from other plans	191,341	-	-	-	191,341	237,658	199,725
Purchased service	2,478,306	-	-	-	2,478,306	7,597,252	11,943,463
TOTAL CONTRIBUTIONS	167,267,371	6,299	4,306,439	1,749,289	173,329,398	463,702,063	452,689,179
DEDUCTIONS							
Investment management fees	914,312	-	-	-	914,312	18,369,583	15,339,446
Custody fees	-	-	-	-	-	-	-
Consultant and legal fees	517,604	-	-	-	517,604	769,418	313,528
Internal investment activity expense	105,931	-	-	-	105,931	351,574	621,525
Retirement and disability benefits	214,049,543	3,240,063	8,565,929	5,373,346	231,228,881	705,987,592	681,245,085
Survivor benefits	2,120,925	-	-	-	2,120,925	9,240,998	9,918,971
Refunds to withdrawing members, including interest	20,838,710	8,798	-	-	20,847,508	76,261,804	77,303,993
Administrative expenses	2,041,234	-	-	192,859	2,234,093	7,101,518	6,813,738
Transfers to other plans	13,024	-	-	-	13,024	196,788	236,696
Other	31	-	-	-	31	4,269	12,393
TOTAL DEDUCTIONS	240,601,314	3,248,861	8,565,929	5,566,205	257,982,309	818,283,544	791,805,375
INCREASE (DECREASE)	(73,333,943)	(3,242,562)	(4,259,490)	(3,816,916)	(84,652,911)	(354,581,481)	(339,116,196)
From securities lending activities:							
Security loan program	144,279	-	-	-	144,279	407,891	784,212
Security loan interest expense / (Rebate)	(17,536)	-	-	-	(17,536)	(77,676)	40,124
Net income from securities lending activities	161,815	-	-	-	161,815	485,567	744,088
Capital Calls / (Distributions)							
Farmland and Timber	9,823,709	118,655	435,542	-	10,377,907	10,377,907	64,871,308
Opportunistic Debt	52,008,326	565,159	2,292,220	-	54,865,705	122,227,066	28,583,408
Opportunistic Equity	35,345,530	371,851	1,556,903	-	37,274,284	19,614,619	30,875,425
Private Debt	(3,562,970)	(48,173)	(164,770)	-	(3,775,913)	37,524,644	128,971,909
Private Equity	11,043,178	-	522,697	-	11,565,876	69,087,815	(19,880,905)
Real Estate	(97,995,385)	(1,120,682)	(4,355,770)	-	(103,471,838)	(59,828,549)	(84,088,120)
TOTAL Capital Calls	6,662,388	(113,190)	286,823	-	6,836,021	199,003,502	149,333,025
NET INCREASE (DECREASE)	\$ (79,834,516)	\$ (3,129,372)	\$ (4,546,313)	\$ (3,816,916)	\$ (91,327,117)	\$ (553,099,416)	\$ (487,705,133)

Director's Report Appeals

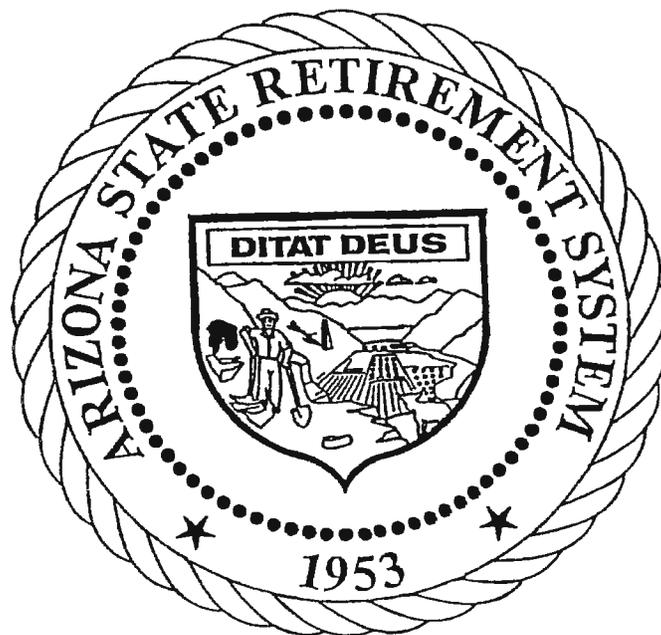


OUTSTANDING ASRS APPEALS

Date Received	Appeals	Issues/Questions Regarding	Status/Comments
04/16/2012	Arizona State University	Appellant is disputing an ASRS employer termination incentive program invoice.	ASU appealed to the Court of Appeals 02/12/2014. Court of Appeals case number is CA-CV 14-0083. Briefing completed 09/03/2014.
06/21/2012	Bonnie Pendergast	Appellant is seeking to purchase 9.89 service years.	ASRS Board denied service purchase in excess of five years. Superior Court overturned ASRS Board decision. Court of Appeals upheld Superior court decision. ASRS filed Petition for Review to the AZ Supreme Court on 07/01/2014. Pendergast filed Response to ASRS Petition on 10/09/2014.
07/01/2014	Lenny Tasa-Bennett	Disputing the denial of his LTD benefits.	OAH Hearing held on 08/18/2014. Recommended decision on 10/24/2014 agenda for Board action.
07/14/2014	Richard K. Hillis & Sharon Di Giacinto	Disputing the ASRS determination that a DRO term is unacceptable.	OAH Hearing re-scheduled for 10/22/2014.
10/06/2014	Elana Kaminski	Disputing membership eligibility from July 2006 through June 2012.	OAH Hearing Scheduled for 12/10/2014.

- Please note any updates have been bolded.

Director's Report Employers Reporting





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: October 14, 2014
RE: Delinquent Employers

As of October 14, 2014, 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:

Starshine Academy	\$ 18,000
Destiny School	\$ 23,000*
Westwind Academy	\$ 29,000
Caurus Academy	\$ 18,000
Park View Middle School	\$ 11,000
Town of Miami	\$ 13,000*
Sonoran Science Academy-Tucson	\$ 13,000*
Sonoran Science Academy-Phoenix	<u>\$ 4,000*</u>
Total	\$129,000*

*Estimated amount

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

Luz Academy of Tucson	\$ 18,600
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Total	\$147,600.*
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Agenda Item

#14

No Materials