

2017 NCPERS Public Retirement Systems Study

January 10, 2018

Study conducted by the
National Conference on Public Employee Retirement Systems and
Cobalt Community Research

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*This study
reviews funds'
current fiscal
condition and
steps they are
taking to ensure
fiscal and
operational
integrity*

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Overview

Over the last 7 years, responding funds have become increasingly confident in their ability to adapt and address issues in this volatile environment surrounding public pensions.

About Cobalt Community Research

Cobalt Community Research is a nonprofit research coalition created to help governments, local schools and other nonprofit organizations measure, benchmark and manage their efforts through high-quality, affordable surveys, focus groups and facilitated meetings. Cobalt is headquartered in Charlotte, Michigan.

Executive Summary

From September to December 2017, the National Conference on Public Employee Retirement Systems (NCPERS) undertook a comprehensive study exploring retirement practices of the public sector. In partnership with Cobalt Community Research, NCPERS has collected and analyzed the most current data available on funds' fiscal condition and steps they are taking to ensure fiscal and operational integrity.

The *2017 NCPERS Public Retirement Systems Study* includes responses from 164 state and local government pension funds with more than 15.5 million active and retired members and assets exceeding \$1.77 trillion in actuarial assets and \$1.80 trillion in market assets. The majority – 62 percent – were local pension funds, while 38 percent were state-wide pension funds.

NCPERS is the largest trade association for public sector pension funds, representing more than 500 funds throughout the United States and Canada. It is a unique, nonprofit network of public trustees, administrators, public officials and investment professionals who collectively manage \$3 trillion in pension assets. Founded in 1941, NCPERS has been the principal trade association working to promote and protect pensions by focusing on advocacy, research and education for the benefit of public sector pension stakeholders.

To access the interactive *2017 NCPERS Public Retirement Systems Study* dashboard, please contact Amanda Rok, communication and social media manager, at Amanda@NCPERS.org.

To view previous editions of this report, please visit: www.NCPERS.org/surveys.

Overview - Continued

2017 Key Findings

1. The market value of fund assets now exceed the actuarial value of assets for the 2017 respondents, and the 1-year, 5-year and 20-year investment returns are near or above investment assumptions. Despite strong returns, funds continue to become more conservative in their assumptions. About 85 percent of funds in the 2017 study have either reduced their investment return assumptions already or plan to do so. In addition, the smoothing period for investment returns continues to be shortened – down from 5.7 years to 5.0 years.
2. The trend of public funds remaining cost effective continues. While all responding funds report the total cost of administering their funds and paying investment managers is 55 basis points (100 basis points equals 1 percentage point), which is a 1-point increase over 2016 total cost of 54, funds that participated in both 2016 and 2017 show a drop to 52 basis points. According to the *2017 Investment Company Fact Book*, the average expenses of most equity funds average 63 basis points and hybrid funds average 74 basis points. This means public funds with lower expenses provide a higher level of benefit to members for each dollar invested (and produce a higher economic impact for the communities those members live in).
3. The average investment assumption is 7.5 percent. This is the same as 2016. As noted above, about 85 percent of funds who responded in 2017 have reduced their assumption or are considering doing so. The inflation assumption is 2.9 percent, down 0.1 from 2016. These changes have had some effect on the funded levels, which dipped to 71.3 percent. Funds who replied in both 2016 and 2017 have an average funded level of 72.9 percent, down from 74.7 percent.
4. With more conservative assumptions, employer contribution rates have risen from 18 percent of fund income in 2016 to 22 percent of fund income. In addition, plan sponsors are becoming more diligent in making required contributions. The percentage of funds receiving full contributions increased from 70 percent to 74 percent.

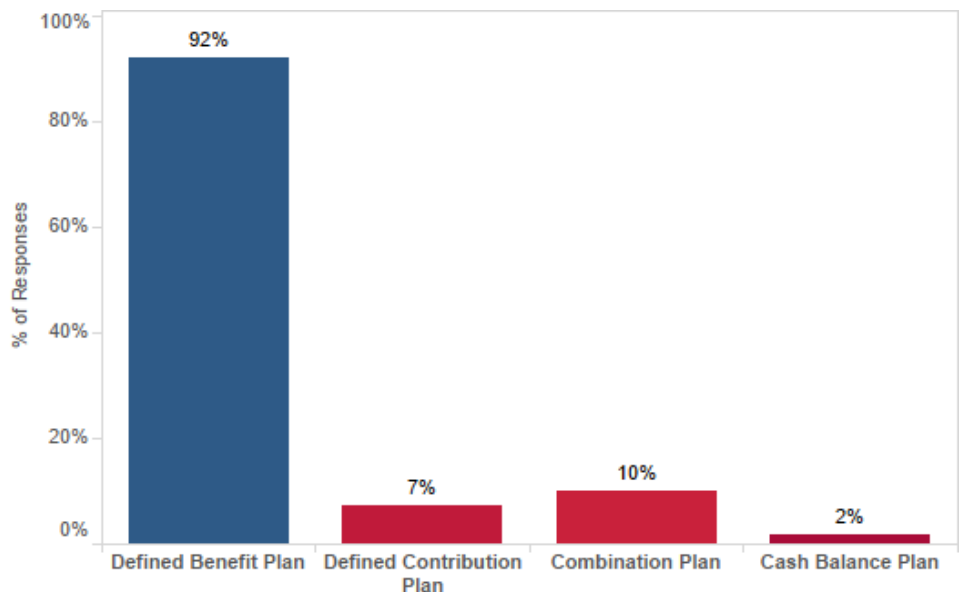
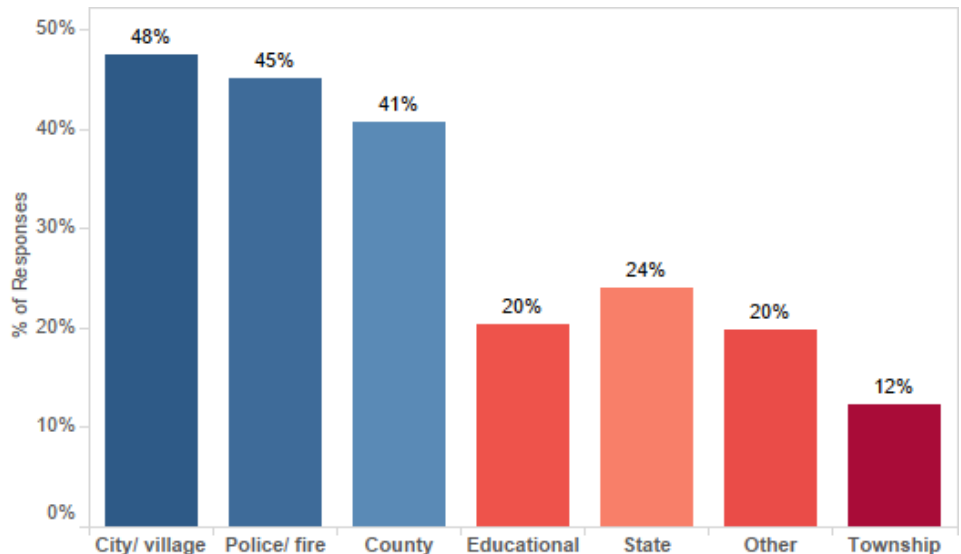
Who Responded

There were 164 public retirement funds who responded to the 2017 *NCPERS Public Retirement Systems Study*. There were 159 respondents in 2016.

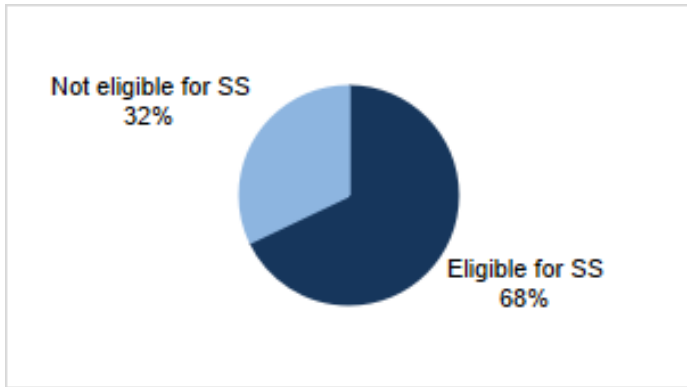
Of the 164 respondents, 86 also completed the study in 2016. Data on the following pages reflect the findings from the 164 funds and references the group of 86 comparable funds when referring to 2016.

About 48 percent serve city and village employees and beneficiaries. About 45 percent of the responding funds serve police and fire employees. The graph in the top shows the 2017 distribution of employee types the funds serve (totals may exceed 100 percent because of multiple responses).

The overall distribution of responding funds is similar to prior years; however, there was a 10 percent decrease in the number of educational funds.



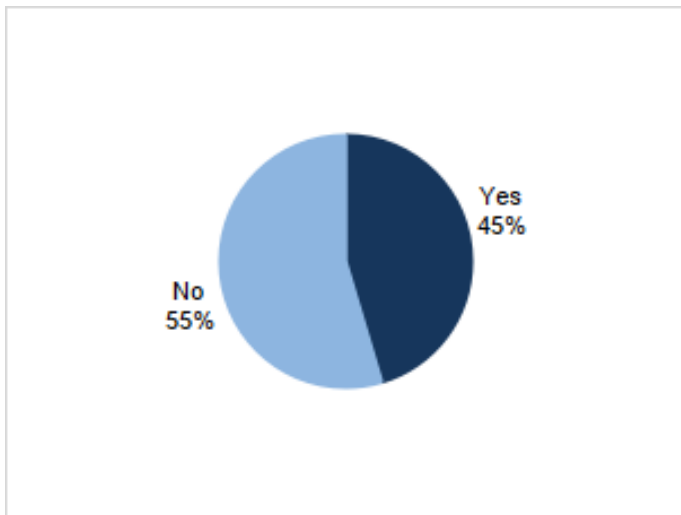
Members' Social Security Eligibility



About 68 percent of responding funds have members who are eligible for Social Security, and 32 percent are not eligible. In this report, breakdowns are presented for “Eligible for Social Security” and for “Not Eligible for Social Security.”

Funds whose members are not eligible for Social Security tend to offer higher levels of benefits to make up for the loss of income typically supplemented by Social Security.

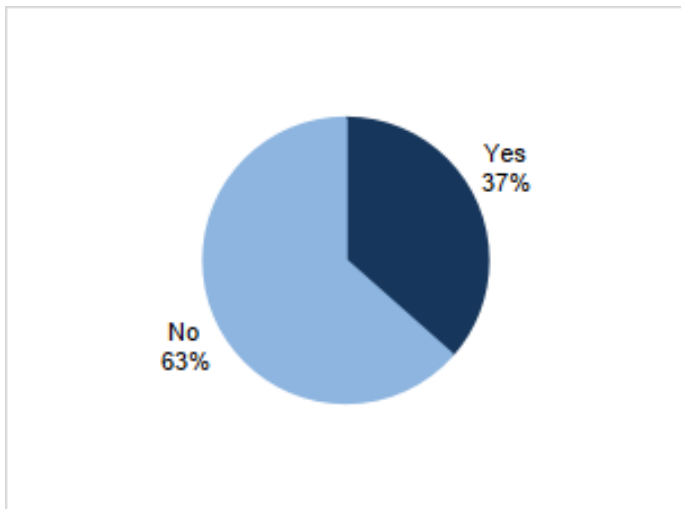
Includes Overtime in Benefit Calculation



Two areas of interest in public retirement are the inclusion of overtime in the calculation of a retirement benefit and also the provision of health care benefits to retirees.

According to the 2017 study, 45 percent of respondents include overtime in the benefit calculation, which is the same percentage reported last year.

Provides Retiree Health Benefits



About 37 percent provide some level of health coverage for retirees. This is a 5 percent increase from what was reported in 2016.

For more information regarding funds and their health plan(s), see page 27.

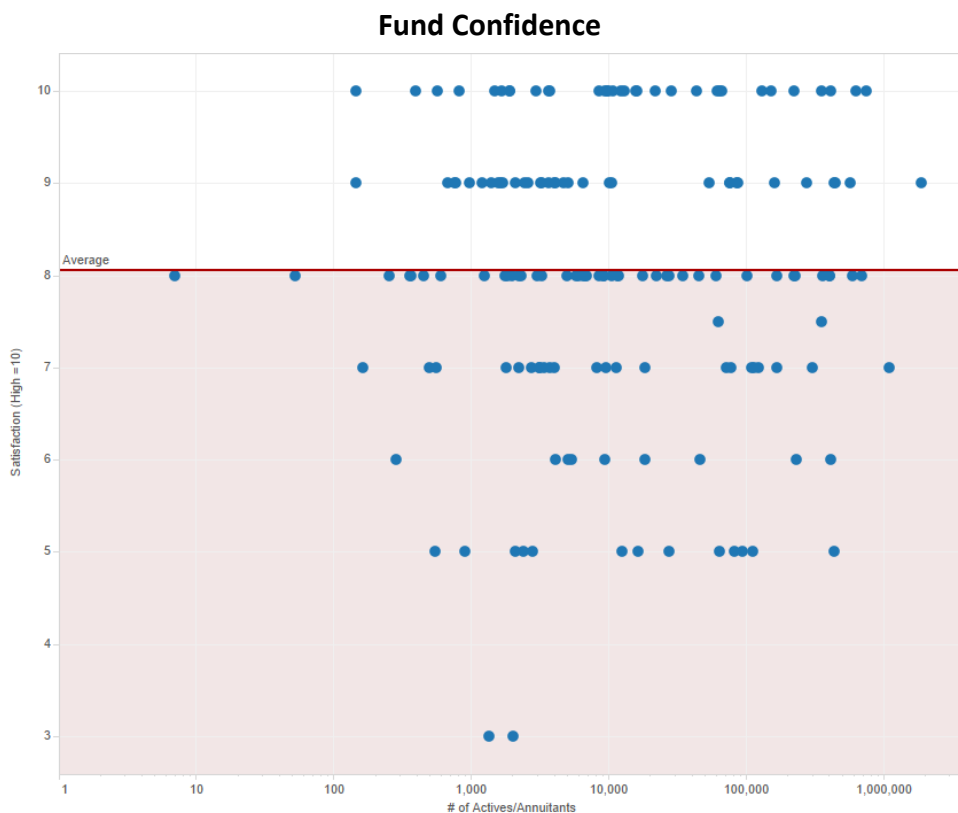
Fund Confidence

The study asked respondents “How satisfied are you with your readiness to address retirement trends and issues over the next two years?” Respondents provided an overall “confidence” rating of 8.1 on a 10-point scale (very satisfied =10). This is stable with 2016, but up from a 7.4 in 2011.

Over the last 7 years, responding funds have become increasingly confident in their ability to adapt and address issues in this volatile environment surrounding public pensions.

Responding funds have been proactive in making changes to their plan assumptions and benefits to ensure their sustainability.

Social Security eligible and not eligible funds rated this question 8.0 and 8.1 respectively.



Expenses

The overall average expense for all respondents to administer the funds and to pay investment manager fees is 55 basis points (100 basis points equals 1 percentage point). This is an increase from 54 basis points in 2016; however, plans that participated in both 2016 and 2017 show a drop to 52 basis points.

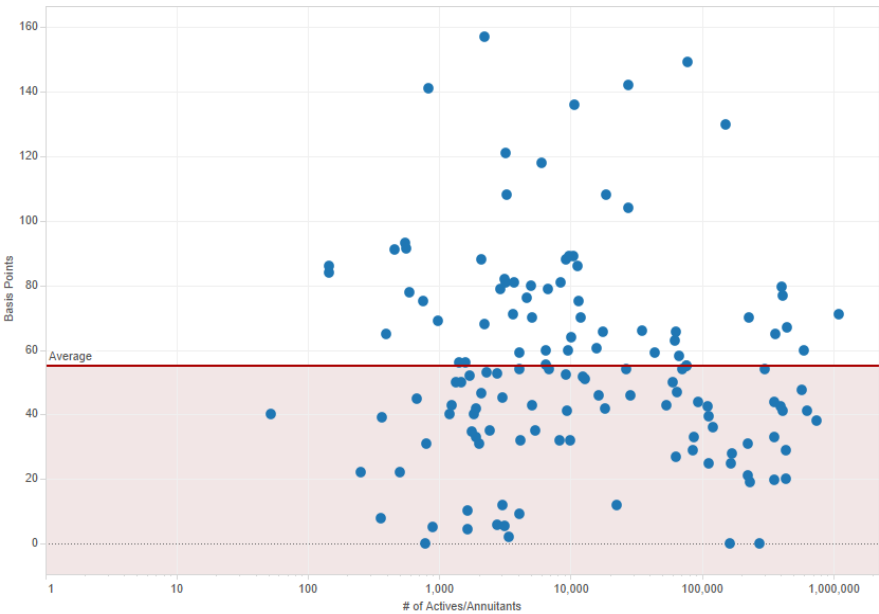
While the respondent pool between studies has fluctuated, the general theme is funds have largely reduced fees the last few years by automating processes, gaining workflow efficiencies and negotiating fee structures with investment managers.

According to the *2017 Investment Company Fact Book*, the average expenses of most equity funds average 63 basis points and hybrid funds average 74 basis points.

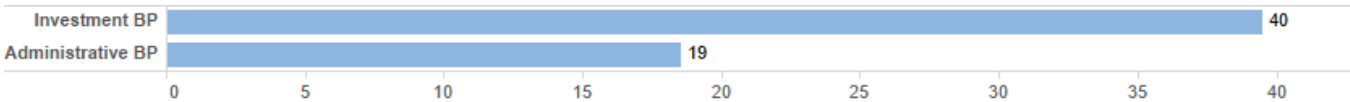
The graph above shows distribution of total expenses (in basis points) on the vertical axis and the size of the fund (by total participants) on the horizontal. The red line represents average expense.

The graph below shows average administrative and investment expenses. (Note: the averages below do not total the average expense above because not all plans reported both investment and administrative numbers separately.)

2017 Total Plan Expense by Fund Size

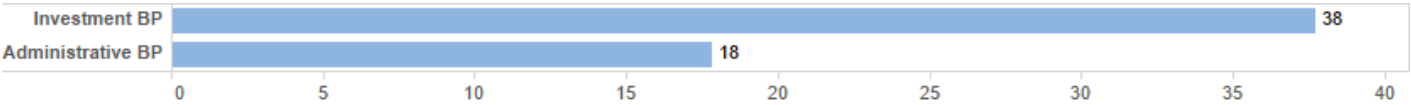


2017 Study Plan Expenses (Basis Points)

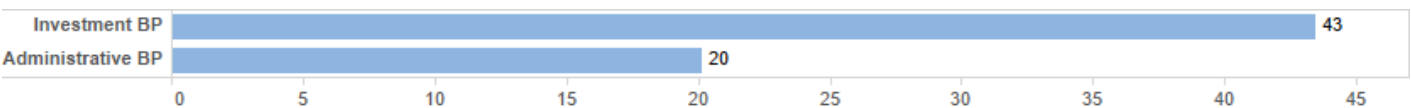


Below are expenses separated by funds eligible for Social Security and Not Social Security eligible. Total expenses are 56 and 63, respectively. Plans that didn't specify if members were eligible for Social Security report total expenses of 52 bps.

Plan Expenses: Social Security Eligible

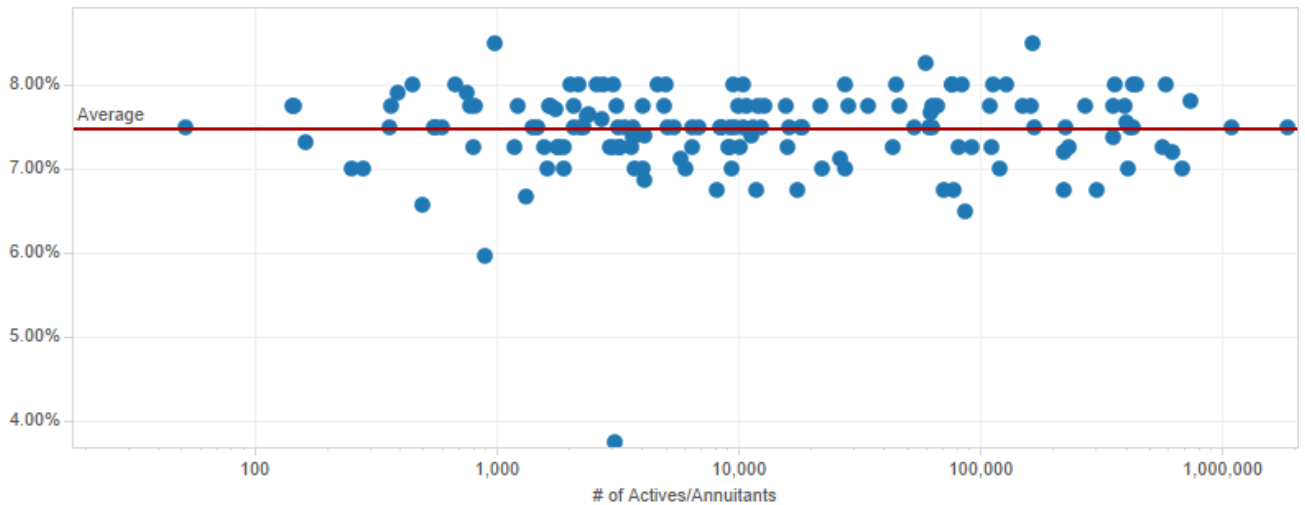


Plan Expenses: Not Social Security Eligible



Actuarial Assumptions

Investment Assumption



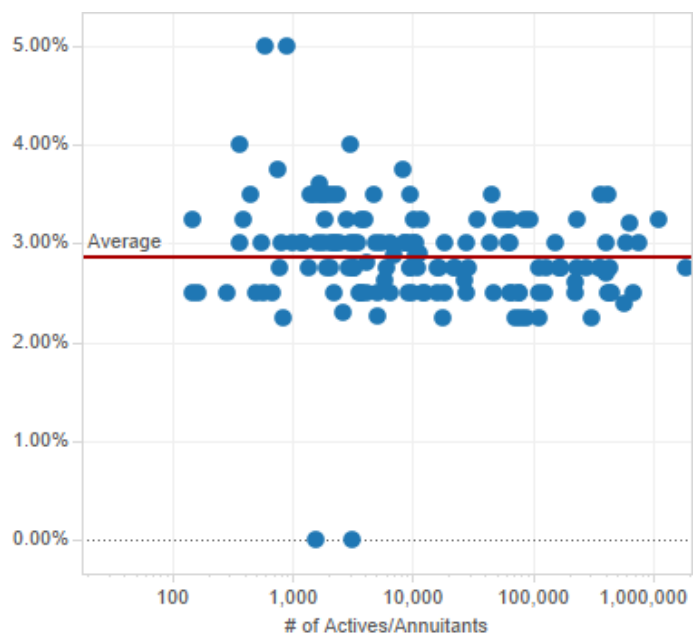
Retirement funds utilize a long-term planning horizon to ensure liabilities are fully funded at the time the liability is due to be paid. To help a fund set contribution rates and measure progress toward meeting its financial obligations, funds make actuarial assumptions to estimate what investment and demographic experience is likely to be over that time horizon.

Such assumptions have powerful effects on the funding level of a plan and what the required contributions will be to pay for future benefits. Assumptions that are overly optimistic (high market returns, lower-than-expected retirement rates) tend to increase a plan's funded level and reduce the contribution rates an employer is obligated to pay today. Conversely, overly pessimistic assumptions reduce the funded level and increase short-term contribution rates.

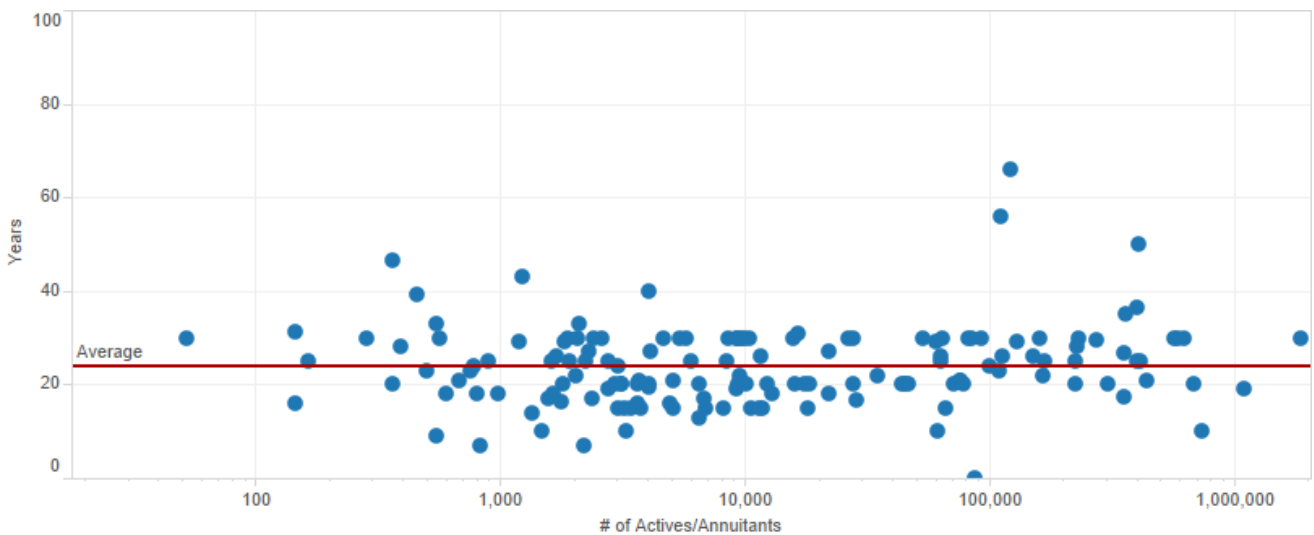
The average investment assumption for responding funds is 7.5 percent, the same aggregated average as 2016. However, about 85 percent of funds who responded in 2017 reduced their assumption or are considering doing so.

The aggregated inflation assumption in 2017 is 2.9 percent, down 0.1 from 2016.

Inflation Assumption



Amortization Period



Pension funds are designed to fund liabilities over a period of time, which ensures long-term stability and makes annual budgeting easier through more predictable contribution levels.

For responding funds, that period of time averages to 23.8 years in 2017, slightly higher than 23.3 in 2016.

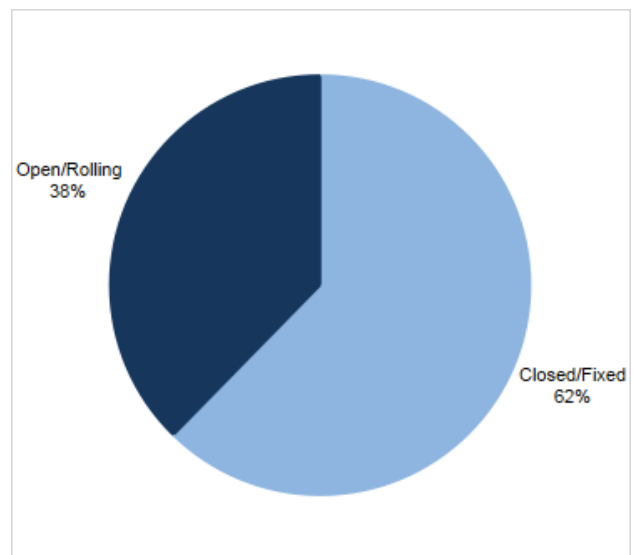
Funds who responded in both 2017 and 2016 reduced their amortization between the two studies. This group collectively shortened their amortization by an aggregate average of 0.85 years.

Groups can tighten their amortization period by adjusting the period in years or using a fixed (or closed) method which pays all liabilities in a fixed timeframe.

Open (or rolling) amortization periods are used to determine the actuarially required payment but is recalculated each year. The same number of years is used in determining the payment each year.

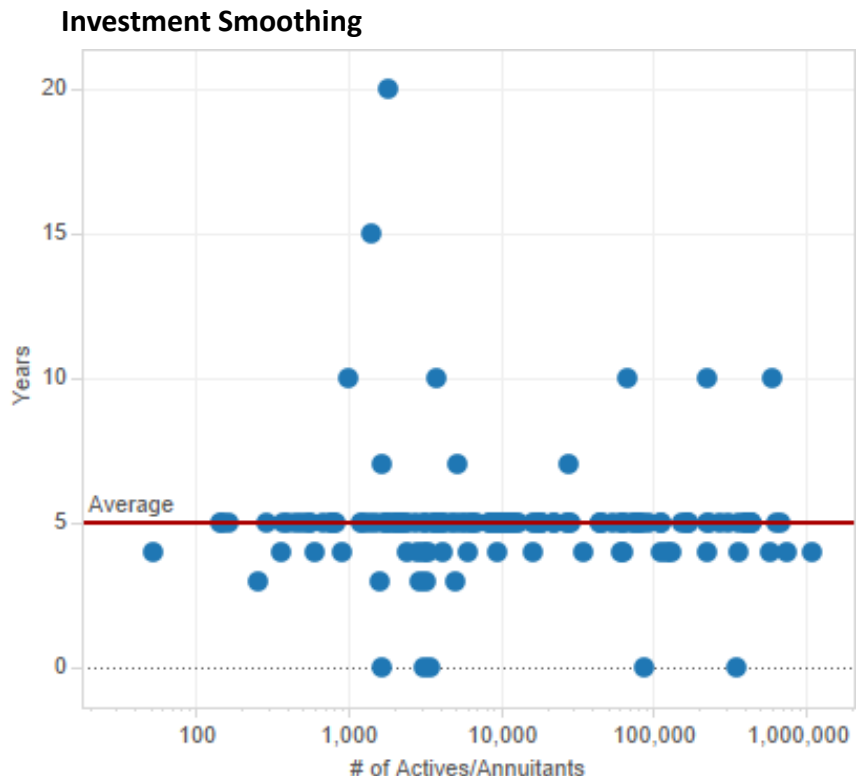
60 percent of Social Security eligible funds have a closed amortization period, while 67 percent of not eligible funds have a closed period.

Type of Amortization Period



The investment smoothing period is a key factor in calculating the assets currently held by the fund and the contribution levels required to continue moving toward full funding over the amortization period. By smoothing investments, funds are able to dampen sharp changes in short-term investment returns. This helps stabilize contribution levels over time without undermining the long-term integrity of the funding mechanism.

The average investment smoothing period for respondents is 5.0 years, down from 5.7 years in 2016. However, the distribution of responding funds on the graph to the right shows the vast majority have 5-year smoothing periods or fewer. For Social Security eligible funds, the smoothing period averages 5.2 years, down from 6.0 years last year. Not Social Security eligible plans have an average smoothing period of 4.6 years, which is the same as 2016.

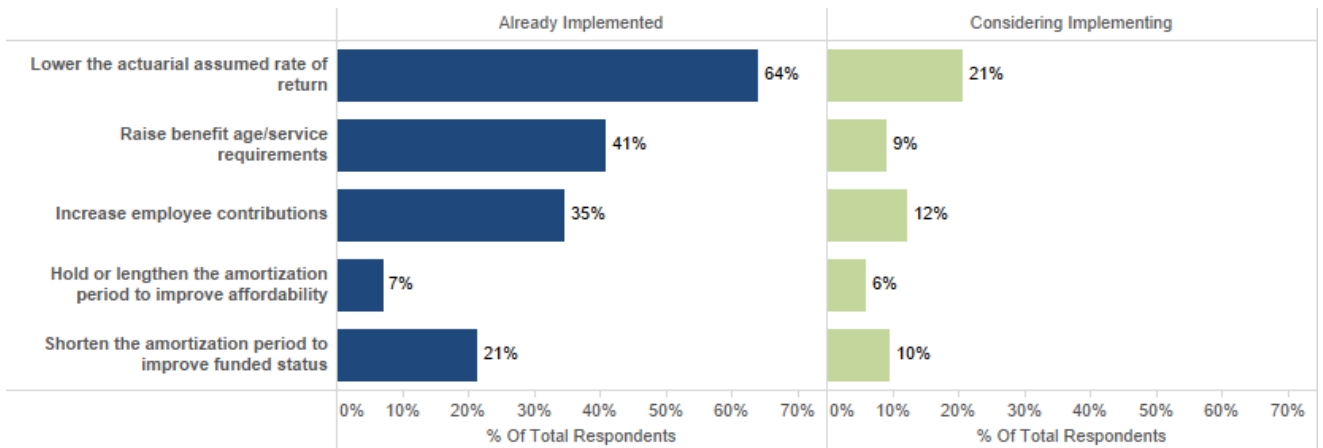


Trends in Plan Changes

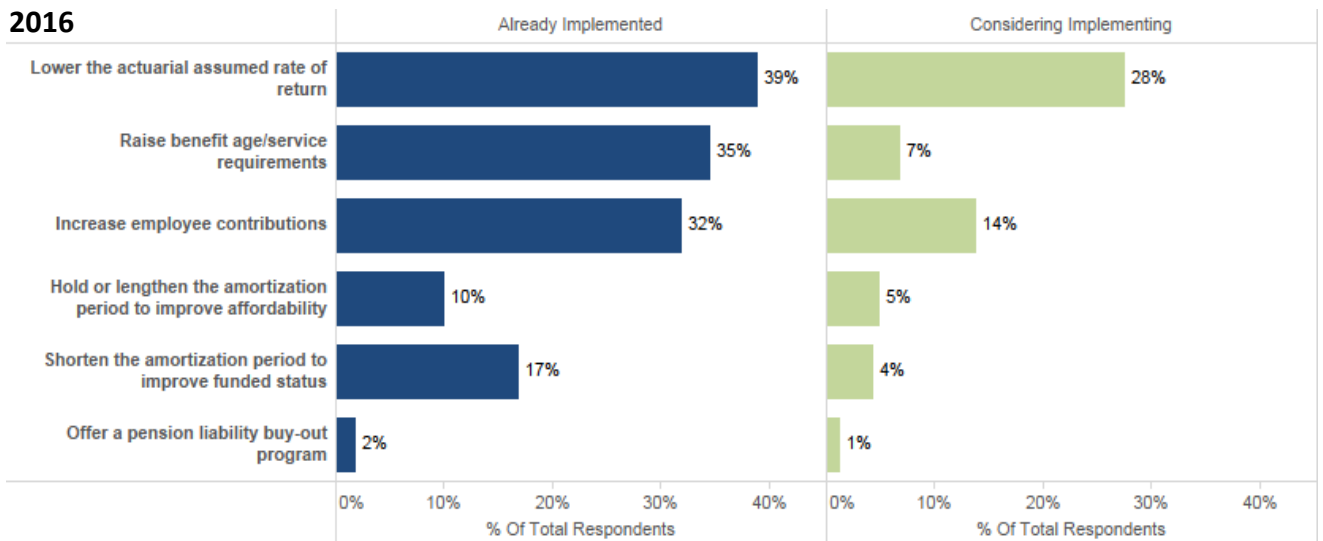
As changes emerge in the political, economic and demographic landscape, funds are adapting their design and assumptions to respond and to maintain the sustainability of the plans. It is important to note more than three-quarters of all responding funds are considering or have lowered their actuarial assumed rate of return.

■ Already Implemented
 ■ Considering Implementing

2017

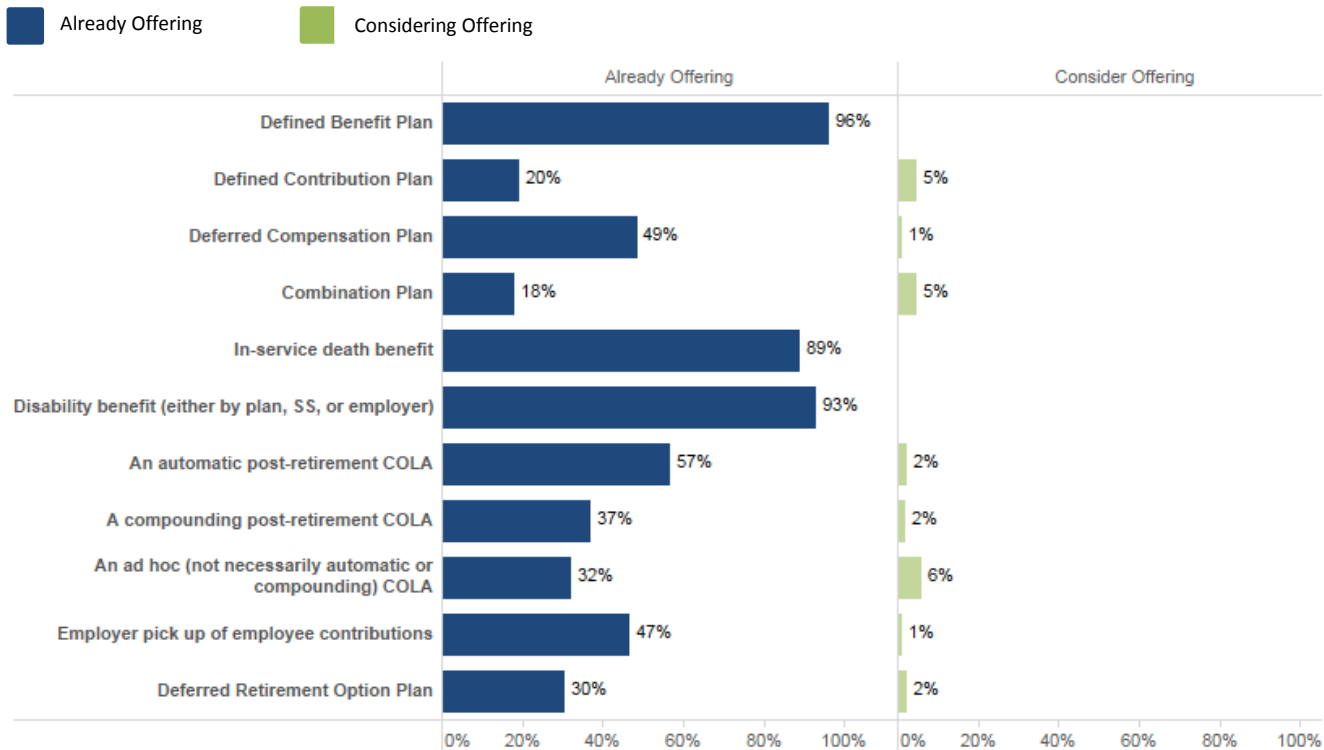


2016



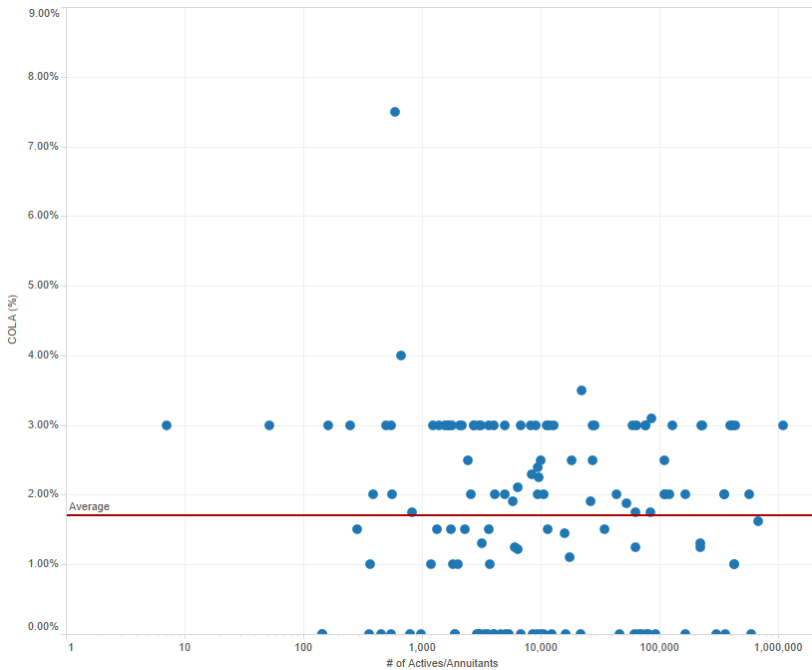
Trends in Retirement Benefits

There is minimal activity in terms of responding funds considering offering additional benefits to their members. Most funds provide a disability benefit, in-service death benefit and some variation of a cost of living adjustment (COLA).



Cost of Living Adjustments

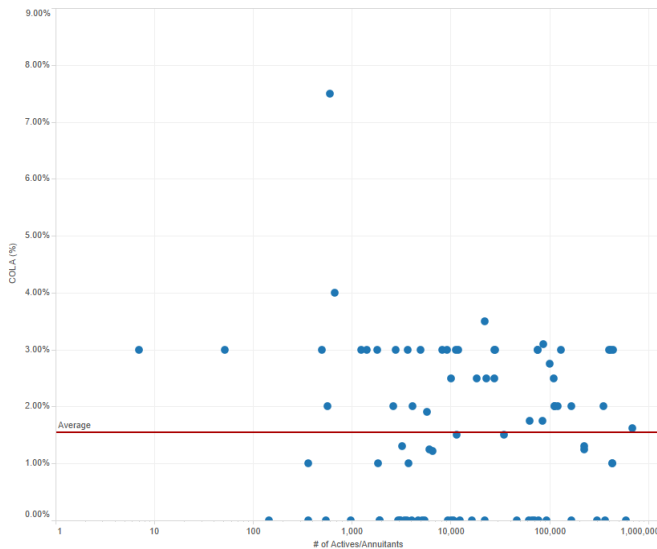
Overall Cost of Living Adjustment Offerings



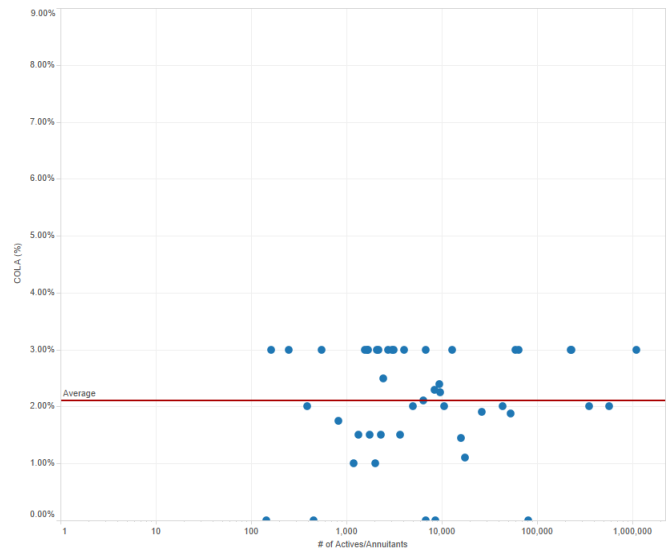
The chart at the left shows the distribution of funds offering various percentages of cost of living adjustments (COLA). The aggregated average COLA offered to members was 1.7 percent, slightly above the 1.4 percent in 2016. Many responding funds did not offer a COLA in the most recent fiscal year.

Funds with members who are not eligible for Social Security tend to offer higher cost of living adjustments (2.1 percent) than those who are eligible for Social Security (1.6 percent).

Social Security Eligible



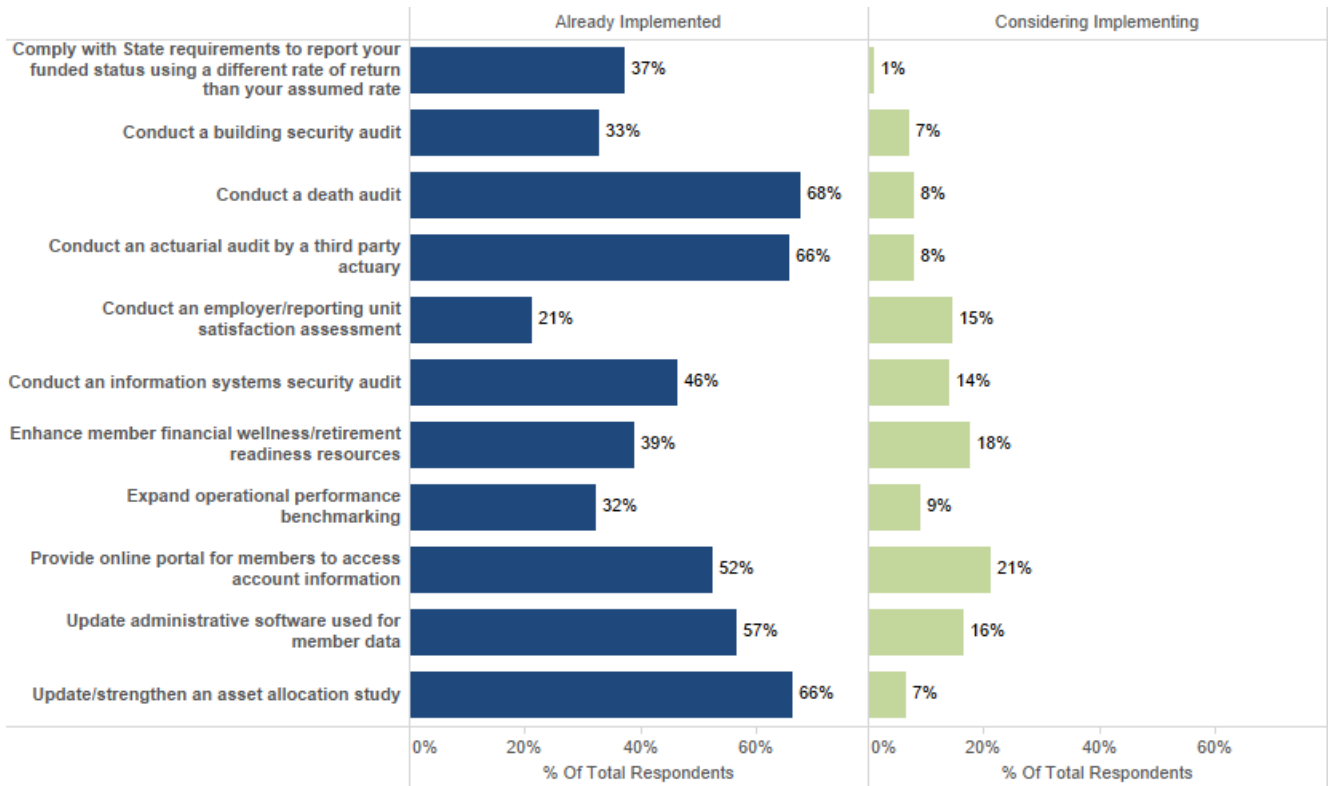
Not Social Security Eligible



Trends in Business Practices

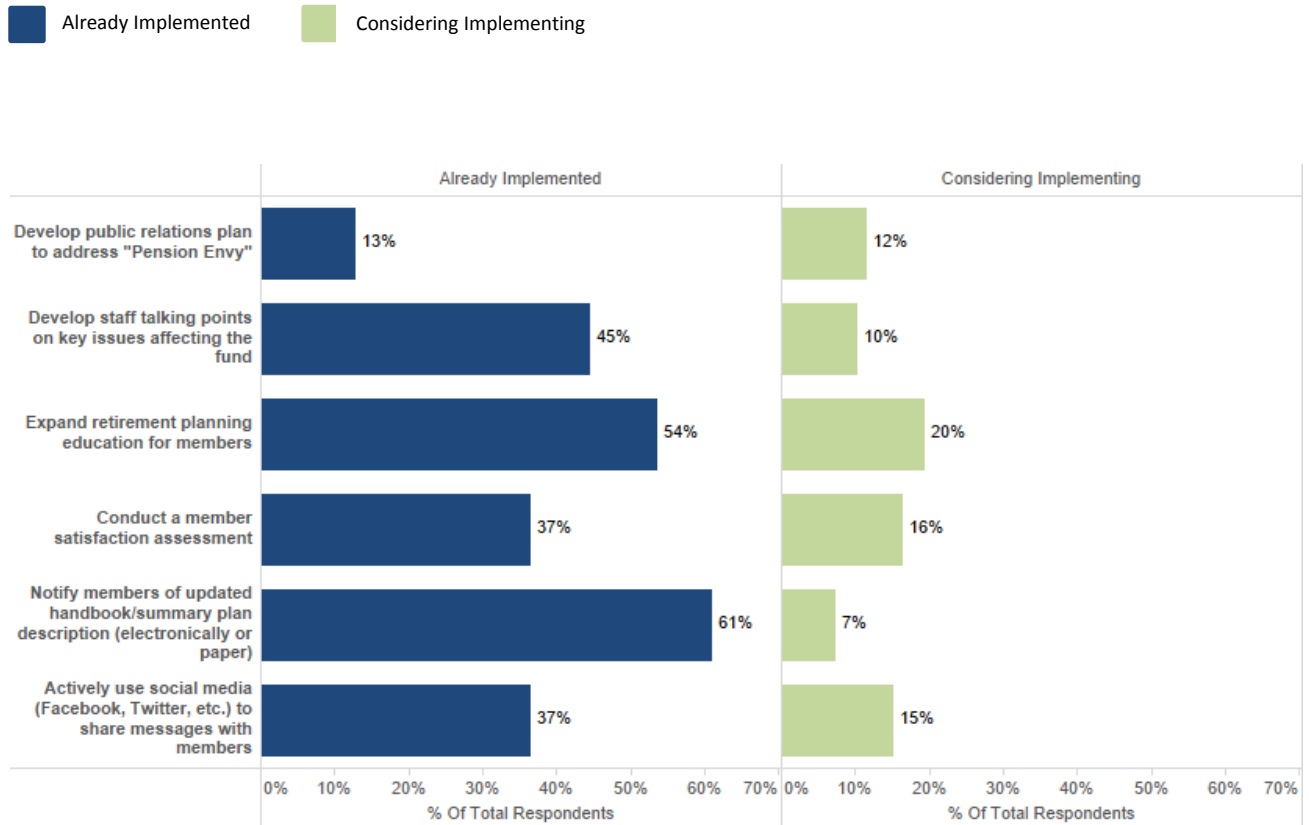
Several areas have seen significant increases in implementation compared to 2016. Building security audits are up 7 percent, death audits are up 11 percent, actuarial audits are up 14 percent, administrative software updates are up 12 percent, and asset allocation study updates are up 13 percent.

Already Implemented
 Considering Implementing



Trends in Engagement

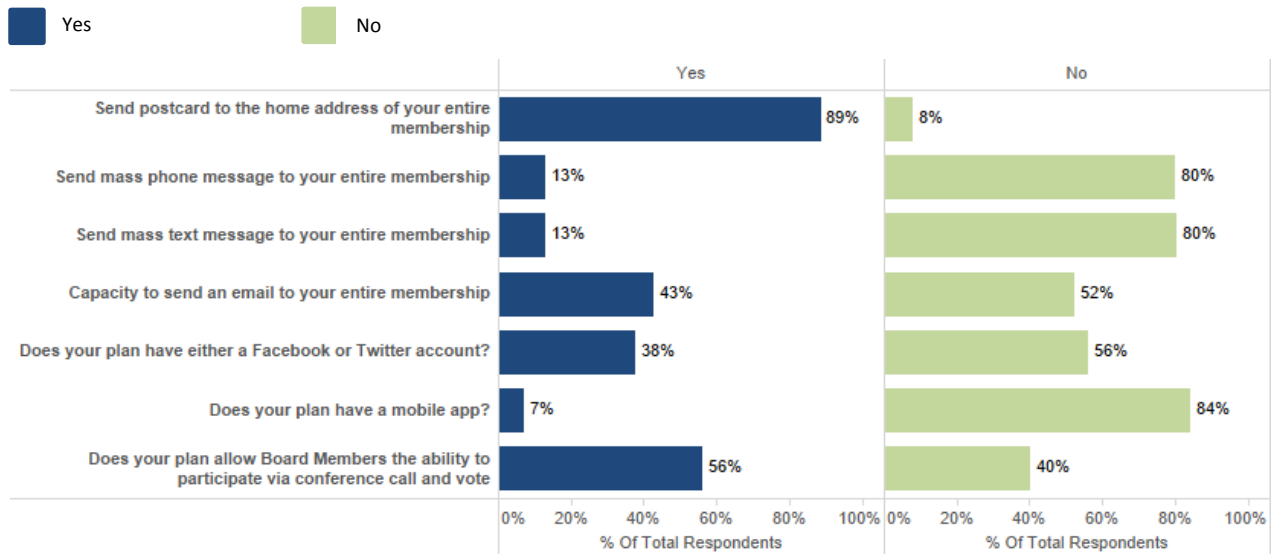
Both notification of updated handbook/summary plan descriptions and use of social media are up compared to a year ago. Implemented handbook notifications rose 15 percent, while use of social media rose 7 percent. Consideration of social media use rose 6 percent.



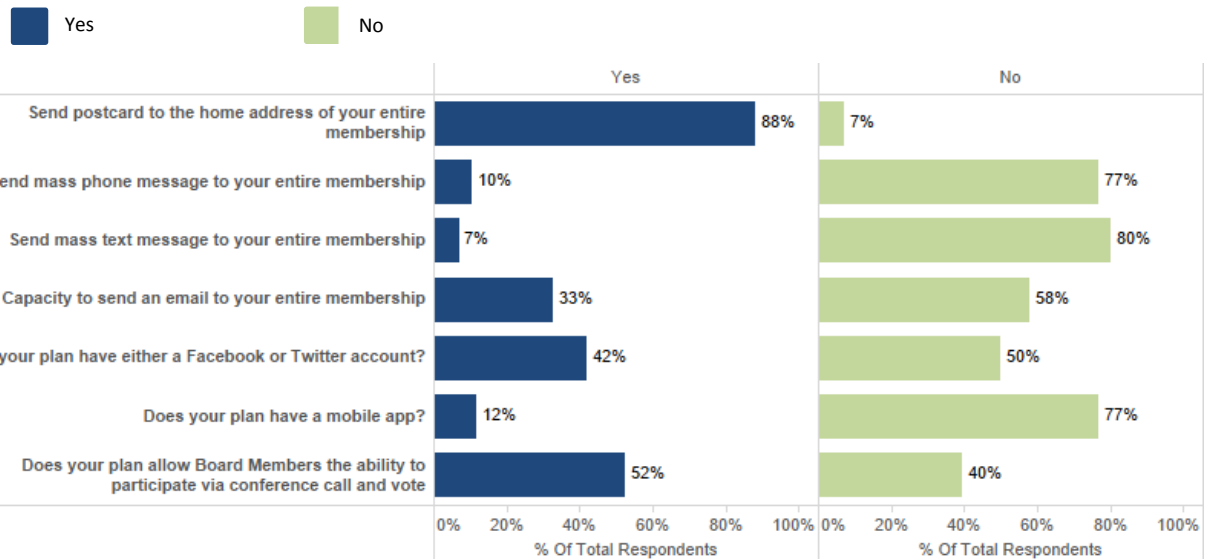
Trends in Communication

Communication capabilities are very similar to 2016, with modest growth in mass phone/text messaging.

2017 Communication Capabilities

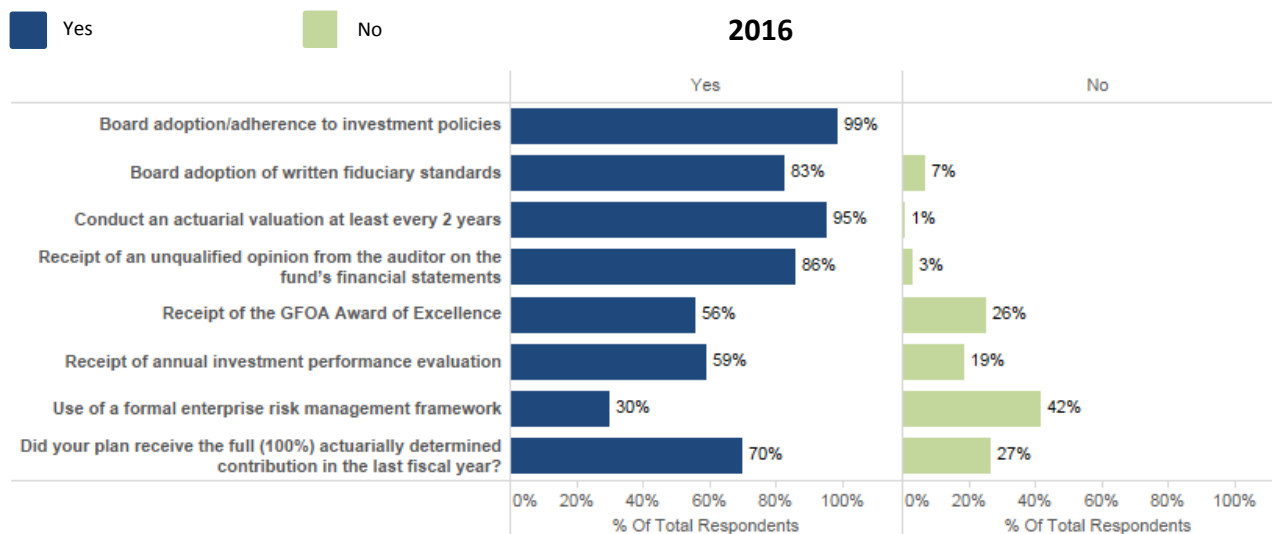
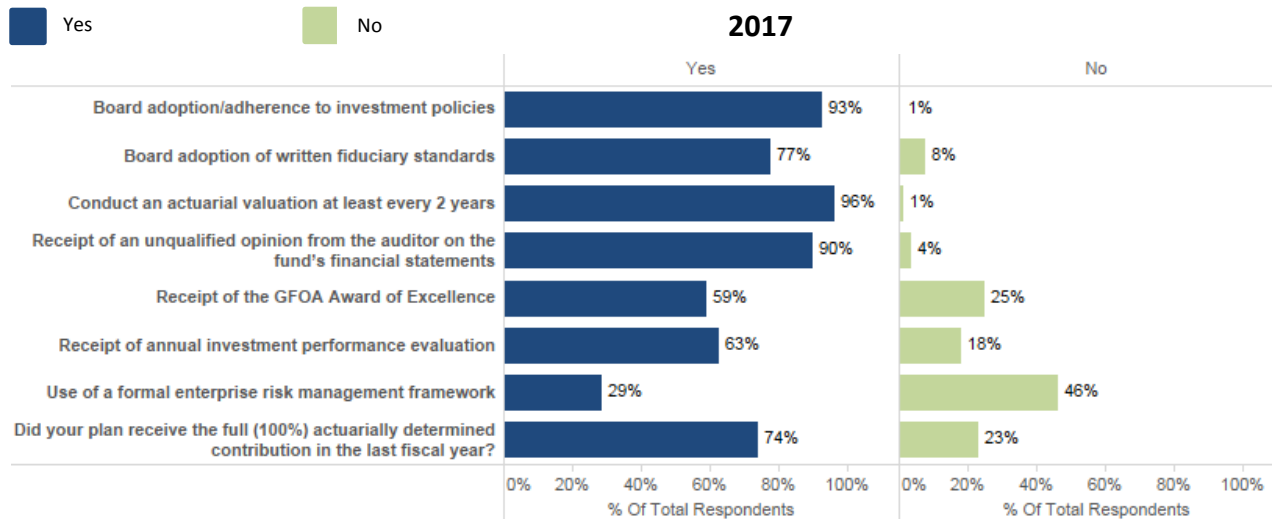


2016 Communication Capabilities



Trends in Oversight Practices

Most oversight practices saw little fluctuation between the 2016 and 2017 studies. A new question in 2016 asked funds whether or not they received the full actuarially determined contribution in the last fiscal year. The percentage that were fully funded increased since 2016.



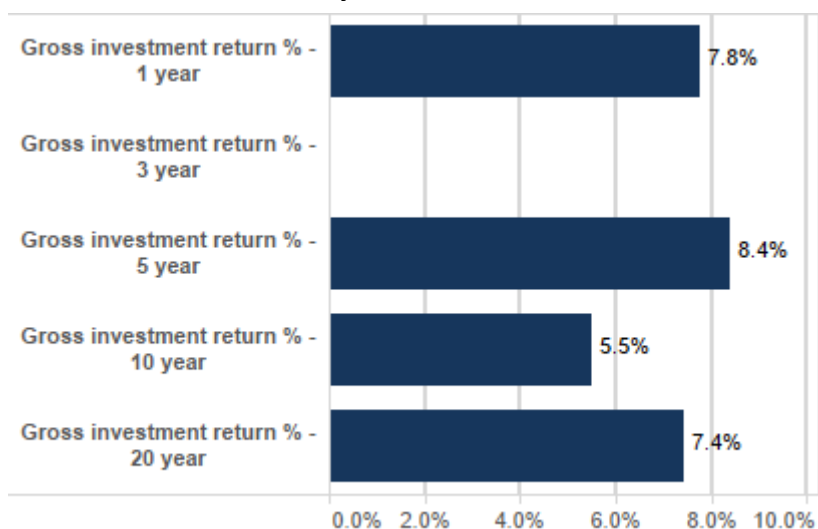
Investment Returns

Reporting funds saw, on average, 1-year returns around 7.8 percent. The 5-year and 20-year average returns also hovered near or above the assumed rate of return. The latter percentages point to continuing long-term improvement in funded status.

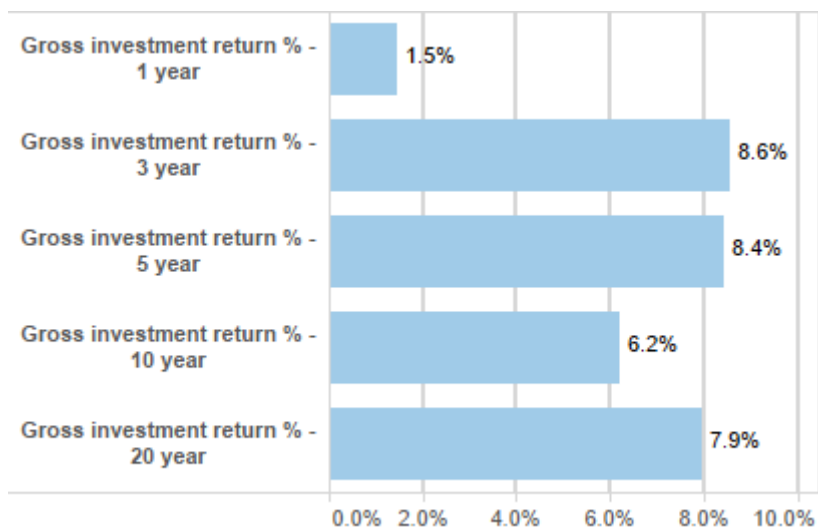
It is important to note not all responding funds have the same fiscal year end date. The timing of when a fiscal year ended accounts for significant difference in investment experience between funds. Funds who have June fiscal year ends saw 1-year returns averaging much lower than those with a September date.

10-year returns, driven by the market crash of 2008, have aggregated returns around 5.5 percent.

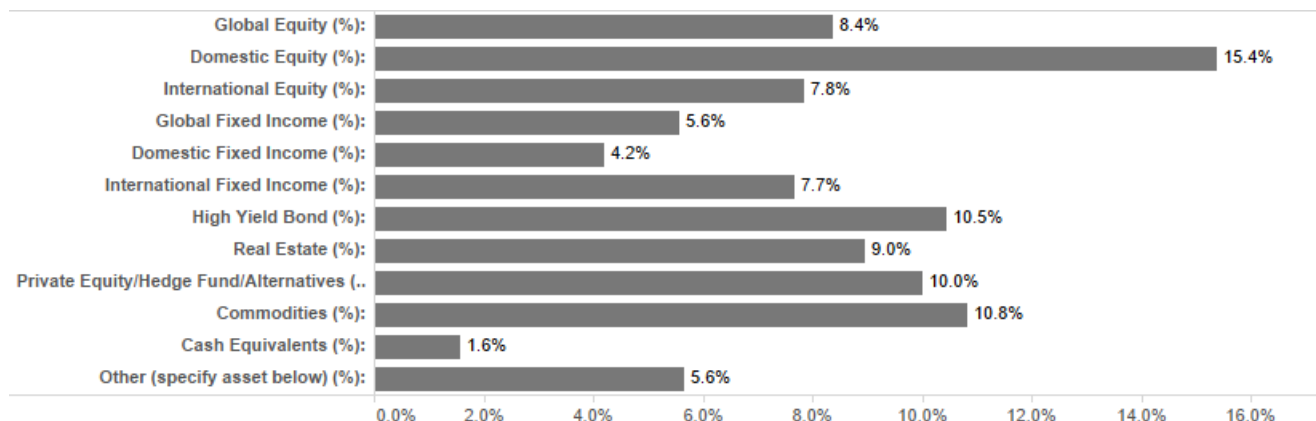
2017 Study Investment Returns



2016 Study Investment Returns

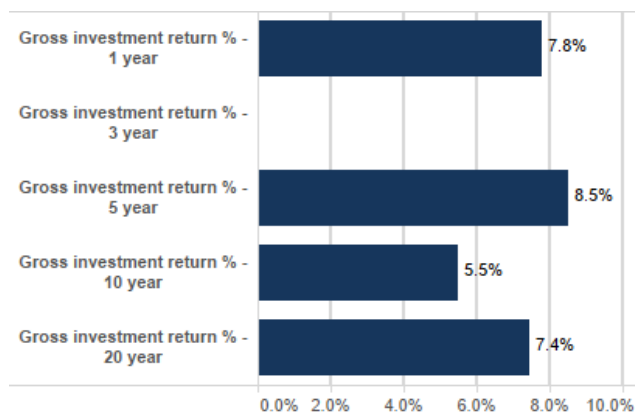


The graph below shows the 1-year gross investment returns based on the various asset classes in which responding funds are invested. Domestic equity and commodities saw the largest returns.

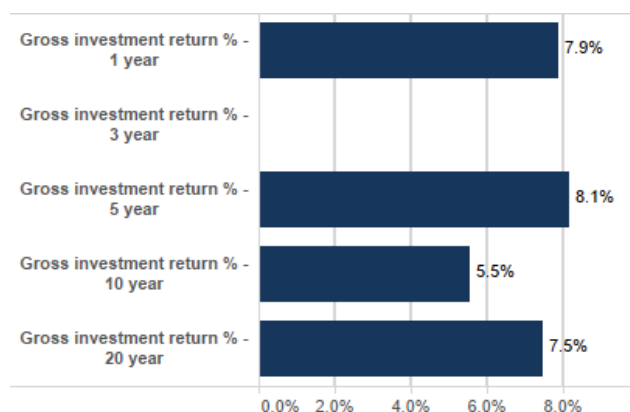


Funds with members who are not Social Security eligible reported slightly higher 1-year returns than Social Security eligible funds. However, both experienced similar returns over time.

2017 Returns: Social Security Eligible



2017 Returns: Not Social Security Eligible

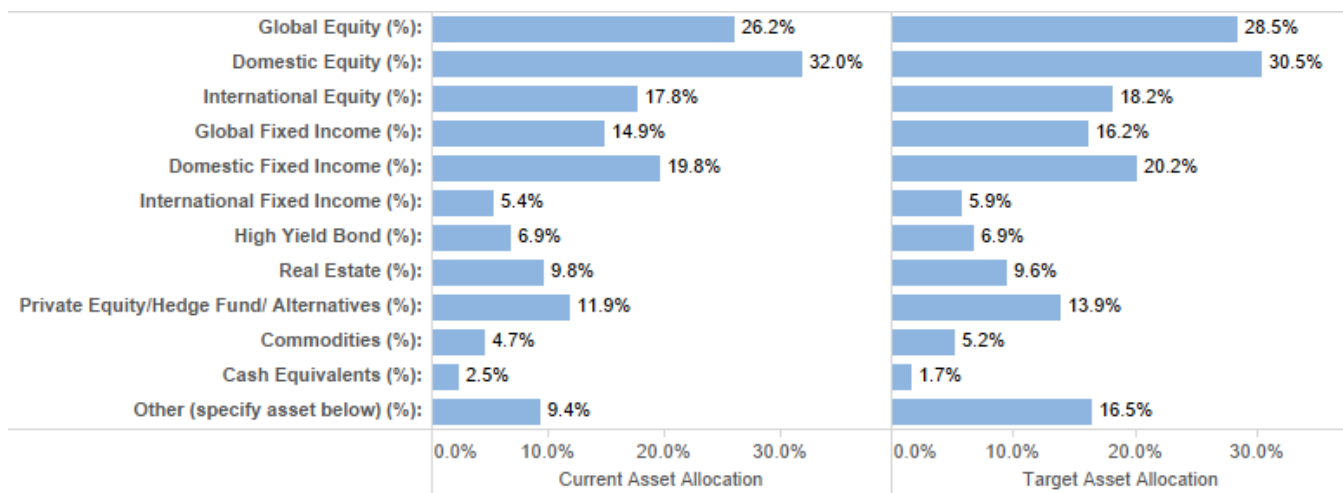


Investment Asset Allocation

Responding funds increased their exposure to equities since 2016 (50 to 76 percent), with the greatest surge in global equity. Global fixed income also showed a significant increase. Compared to current allocations, target allocations show growing exposure to global equities, global fixed income, and “other.”

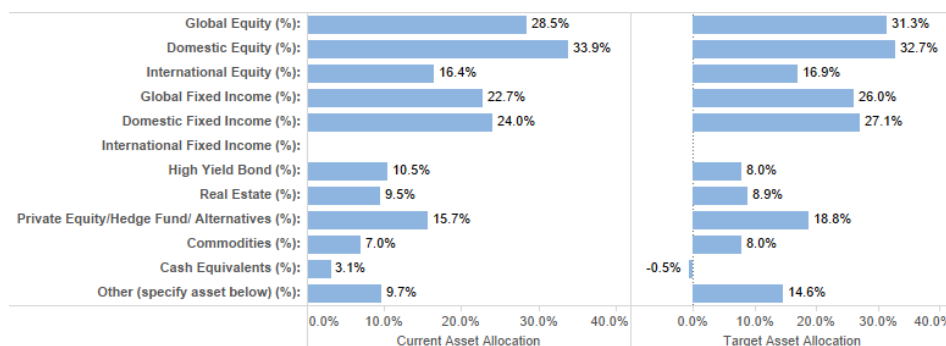
2017 Current Investment Asset Allocation

2017 Target Investment Asset Allocation



Note: Average allocations in each asset class do not total to 100% because of how individual allocations were reported.

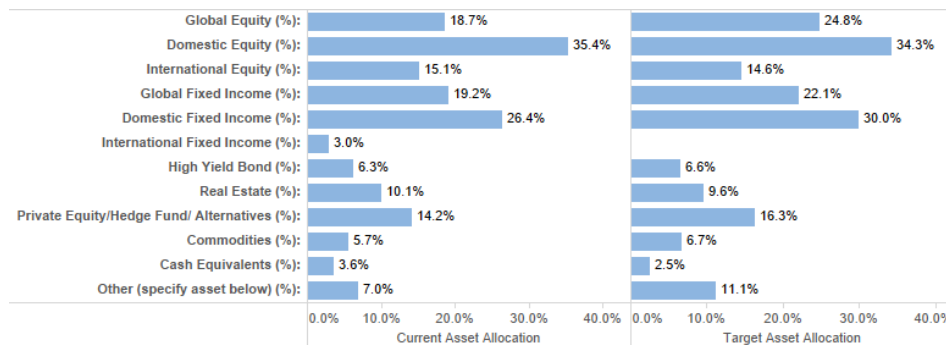
Highest 1-Year Return



On the left are two graphs that show the asset allocations for 20 funds who reported the highest 1-year and funds with the highest 10-year investment returns.

Funds with the highest 1-year returns had higher allocations to domestic equities and fixed income with lower exposure to cash and commodities.

Highest 10-Year Return



Similarly, funds with the highest 10-year returns have higher allocations to domestic equities and fixed income with lower allocations to international fixed income and cash.

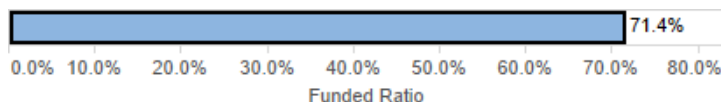
Funding Levels

Aggregate average funded level is 71.3 percent, down slightly from 74.7 in 2016. Plans that responded in both 2016 and 2017 had an aggregate funded level of 72.9. Larger plans and plans not eligible for Social Security tended to have lower funded levels.

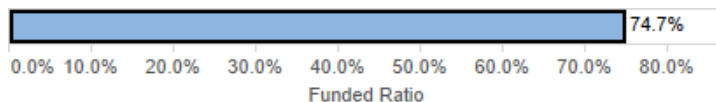
The black line denotes the average of 71.3 percent, and the red line denotes the 70-percent funding target that Fitch Ratings considers to be adequate.

The graph to the bottom right shows the distribution of funded levels and fund size. The vertical axis shows level of funding, and the horizontal axis shows the size of the fund by total active and retired participants.

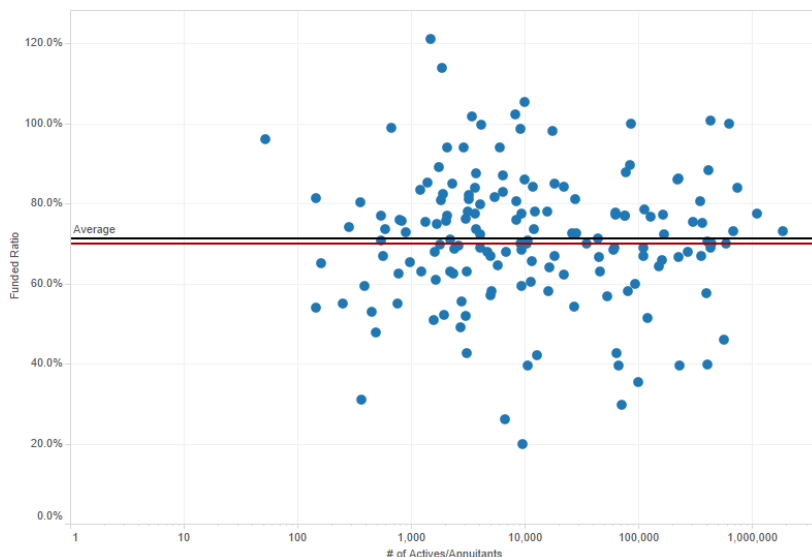
2017 Funded Level



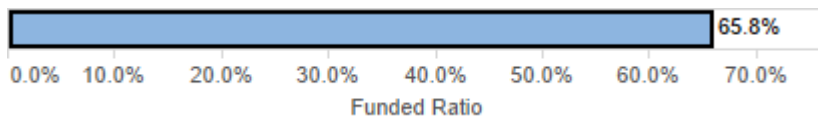
2016 Funded Level



2017 Funded Level Distribution

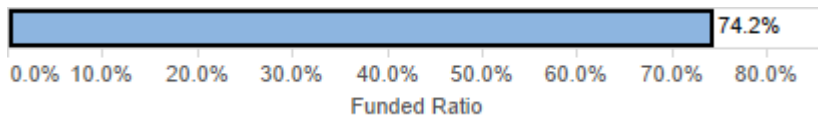


Funds Not Eligible for Social Security



Many funds include members who are not eligible to receive Social Security at the time of retirement. For this reason, such funds often have higher benefit levels to offset the loss of this source of retirement funding. Those funds that include such members report an average funded level of 65.8 percent, which is down from 69.2 percent in the 2016 study.

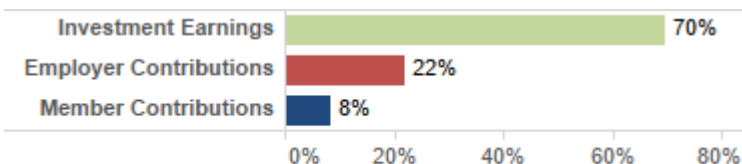
Funds Eligible for Social Security



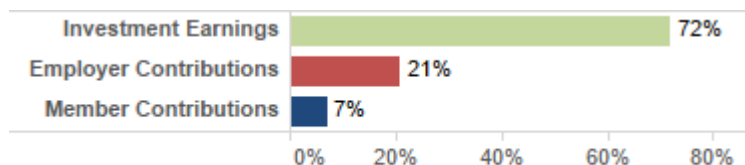
The graph to the left shows the funded level for those plans that include members who are eligible for Social Security. The average funded level for this group is 74.2 percent, down from 76.2 percent in the 2016 study.

Sources of Funding

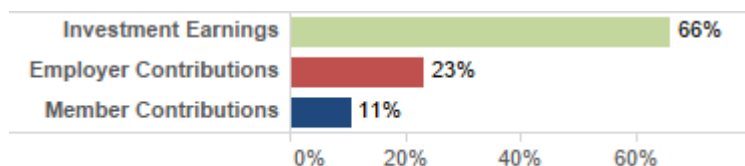
Overall Sources of Revenue



Social Security Eligible



Not Social Security Eligible



Income used to fund pension programs generally comes from three sources: member contributions, employer contributions and investment returns. The chart at the left shows the proportion of funding provided through each of these sources based on reported data.

Investment returns are by far the most significant source of revenue (70 percent.) This is a slightly lower percentage than reported in 2016. Member contributions stayed the same, but employer contributions went up because there is a higher percentage of employers fully funding their annual required payment and the required payments are higher because of more conservative actuarial assumptions.

The graphs to the left show funds with members who are not eligible for Social Security reported higher member and employer contributions.

The chart to the left shows that average contribution rates rose for both members and employers, and for those funds that responded in both 2016 and 2017, that rate of increase was equally shared.

The findings in this study are consistent with other industry studies showing annual fund expenditures and economic impact significantly exceed the annual contributions made by the plan sponsors/employers.

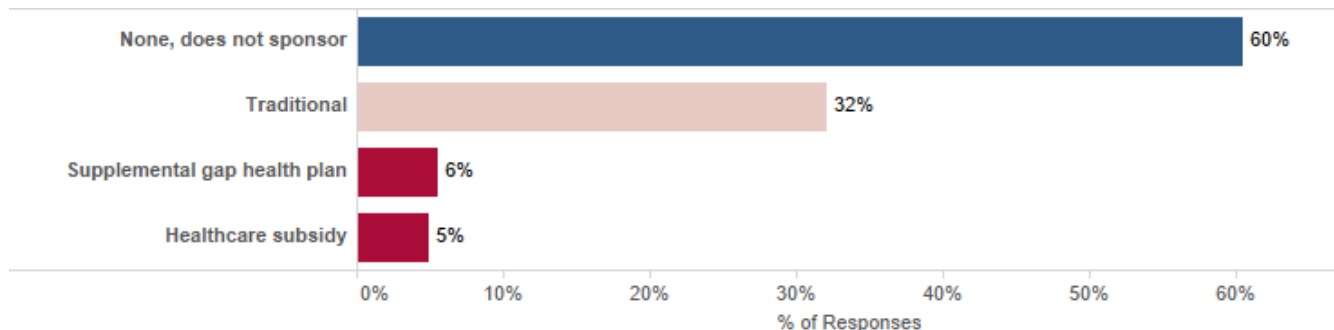
Contributions As a Percent of Payroll

Year	EE	ER	Total
2016	7.9%	18.5%	26.4%
2017	8.4%	21.8%	30.2%
2017 who responded in 2016	8.2%	18.8%	27.0%

Health Plans

In 2017, responding funds were asked whether or not the pension plan sponsors a health plan. About 60 percent of funds do not currently sponsor a health plan.

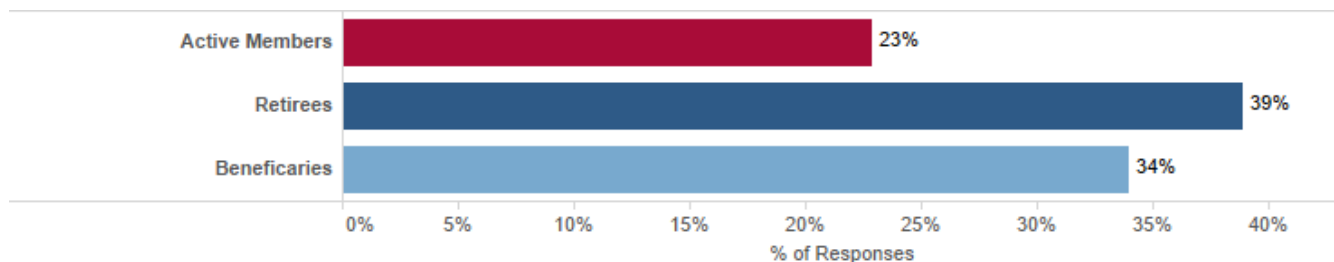
What type of health plan does your pension plan sponsor?



The funds who do sponsor some sort of health plan or subsidy were also asked to report which types of members are eligible to participate.

About 39 percent of responding funds allow retirees to participate, 23 percent allow active members, and 34 percent allow beneficiaries to participate in the sponsored health plan.

Who is eligible for the health plan?



Reducing Liability

Respondents were asked to share strategies they have put in place to reduce accrued actuarial liabilities beyond traditional amortization. Below is a text cloud showing the words that appear most often in respondents' comments. Verbatim comments can be found beneath the text cloud.



Top Themes:

- Increased employee and employer contributions
- Reduce plan benefits - especially COLAs and benefits for new hires
- Adjusted rate of return assumptions

Comments:

- 5.5% increasing fully funded 17 years
- A funding policy that sets contributions rates AT LEAST the ADC, but does not lower the rate from the prior year to at least 105% funded
- Accelerated amortization for closed groups, bridge down future benefit accruals, lowered the assumed rate of return and updated mortality tables.
- Actual contributions exceeded the actuarial determined contributions for 2016, increasing the ratio of assets to actuarial accrued liability.
- Additional retirement tier with reduced benefits for those hired on or after July 1, 2011. Increased in contributions in 2014
- ADJUST INVESTMENT POLICY TO MEET CURRENT INVESTMENT CLIMATE AND TO CHANGING REGULATIONS
- Adjusted investment allocation for higher return. Increased contribution rates.
- Amortization period will reduce from 30 to 20 years beginning with fiscal year 2017-18 as our funded ratio has reached 72%.
- Analyzed asset allocation and addressed the actuarial rate of return.
- Asset Liability Management framework, Risk Mitigation, Reduction of Discount Rate

- Board has adopted a framework to stay at or below the closed period funding period of 28 years as of 7/1/16. It will be 27 years 7/1/17. The framework suggests that plan design changes take place if the plan falls outside of the desired target. COLA reduction occurred after our most recent experience study to keep the plan on its desired course to full funding.
- By policy, contribution rate must be at least the ADC and do not decrease from one year to another until at least 105% funded
- Changed amortization from open period to closed period; shortened amortization period; changed from level percent of pay to level dollar amortization; withheld ad hoc COLA's since 2009; passed anti-pension spiking legislation in 2009; implemented combination DB/DC tier in 2009
- Changed benefits, increased contributions, altered the Investment Policy Statement.
- Closed amortization period
- Closed amortization through FY 2039
- Continue to work on asset allocation and new ways to improve sustainability.
- Created new benefit tier and increased employer contributions
- Current amortization period is 22 years.

Our goal is to be 100% funded.

- Currently have a request before the Plan Sponsor to increase the employer/employee matched contribution .25% per year for the next 4 years, going from 8% to 9% by year 2021
- Cut COLAs for all, increased age and service requirements for retirement for new hires, increased member and employer contributions.
- Diversification of assets to protect in all market cycles
- During the 2017 Legislative session legislation advanced to the Governor's desk, lowering the COLA from a fixed 2% to 1% for 5 years and then returning to 1.5% thereafter. The legislation would have also increased contributions by .5% for employees and .75% for employers as well as re amortized the unfunded liability to a new 30 year amortization period.
- Employee and member contributions are projected to be sufficient. The Plan has always been adequately funded
- Employee and member contributions are projected to be sufficient. The State of NE also contributes 2% of member salary.
- Ensure full funding of contribution rates.

Reducing Liability - *Continued*

- For the past 5 years, the Board has reviewed the investment return assumption and made small incremental reductions, moving from 7.5% to 6.95%. The Board will continue to annually review the investment return assumption each year.
- Fully funded
- Funding policy requires AT LEAST the ADC but does not lower the rate from prior year until at least 105% funded
- Funding Rehabilitation Program
- Increase employer contributions
- Increase Employer contributions and Employee contributions and add an additional state ongoing contribution until the plan is 100% funded.
- Increase in employee contributions; alternative investment strategies; asset allocation; and addition of Forward DROP
- Increase in employee contributions; alternative investment strategies; asset allocation; addition of Forward DROP
- Increased diversification, increased member and employer contributions
- Increased employee and employer contributions. No automatic cola's.
- Increased employee contributions. New hires contribute at a higher contribution rate and they have a lower multiplier and therefore have to work longer to max out, if they decide they want to.
- Increased employer and employee contributions
- Increased employer contribution by 2%
- Introduced new lower tier of benefits
- Introduced UAAL and Normal Cost floors
- investment allocation changes.
- Investments continues to diversify the portfolio and invest according to the Fund's risk return profile while the Fund implements strategies to secure stable and timely contributions
- Lower the discount rate, implemented Tier 2 with higher age requirement and cost sharing
- Lowering of benefits to new employees, lowering of actuarial investment assumption rate
- Not applicable; funded on the Aggregate Method
- Our plan recently completed a round pension reform that impacted several aspects of plan design including age & service requirements. In addition, recent legislation provided the board with the ability to adjust the COLA as necessary versus a legislatively mandated fixed COLA.
- Pay annual required contribution, pay additional above annual required contribution.
- Payment of ADEC is required including a closed amortization period not to exceed 25 years. Additional employee contributions are permitted to reduce liability.
- Pension reform passed in 2013 has put us on a path to amortize the UAAL.
- Pension reform, increased employer contributions. moratorium on retirement enhancements
- Plan changes via the legislature
- Propose legislation to increase employer/employee contributions (1% each is needed).
- Proposed cuts to benefit structure, including COLA
- Proposed Legislation in 2018 to increase Employer Contribution to cover ARC (Actuarial Required Contribution) less 9% Employee Contribution.
- Proposed legislation to increase employer and employee contributions.
- Proposed reduction of benefits for new hires
- Raised contribution rates, increased service requirement to retire, currently updating asset/liability study
- Raising retirement age and increasing contributions
- Rate collar, smoothing and bonding of debt
- Reducing amortization period each year by 1 until 2026. Then switching to a 15 year rolling amortization period
- request to the City for additional funds
- retirement reforms that in the long run will help to reduce the actuarial liability
- Revised asset allocation, proposed increased employer & employee contributions
- Revised plan document and added a new tier of benefits
- See answer to #4. Currently reviewing COLA.
- See SB 2190, Tex. 85th Legislature
- SJCERA has implemented new asset liability study and making cost reductions; primary employer paying additional contributions towards unfunded liability
- State contributions calculated under the statutory funding plan are below what would be required by conventional actuarial funding methods. The board of trustees certifies both the statutory amount and a higher amount based on actuarial standards. The board's focus in our new strategic plan is improving our funded status and emphasizing the economic impact that benefit payments have to the state.
- State law requires a shorter (10 year) amortization period.
- That is up to the plan sponsor as most of our employees are in CBA's. We do produce a 10 year historical report to be used as a look back and did implement an Actuarial Funding Policy a few years ago that shortened the amortization period for the whole plan and for an future benefit increases/changes
- The plan sponsor (legislature) has reduced benefits for new hires twice in the last decade; increased state contributions multiple times; and increased member contributions.
- The strategies adopted by our board for the State Patrol Retirement Fund include increases in EE and ER contributions as well as an increase in direct state aid until the fund reaches 100% funded.
- The UAAL is so small that it is not a consideration at this time.

Reducing Liability - *Continued*

- This plan is a unique pay-as-you go plan that was closed in 1995. There is a well thought out plan that responsibly manages and funds remaining liabilities. By design the plan will be 100% funded in the 2040 timeframe
- Tier II of reduced benefits for those hired after 1 Sept 2012
- Two of our three Plan Sponsors are paying supplemental contributions to reduce their UAAL.
- Under a Federal court ordered settlement agreement that anticipates full funding within 30 years of 1/1/2016.
- Updated County funding policy
- Variable Benefit Strategy
- VIA's funding policy is to contribute the Retirement Plan's normal cost and an amortization payment to fund the UAAL as a level percent of covered payroll over the period ending 9-30-2042. VIA may also contribute more than the recommended contribution amount depending on annual fiscal budgets.
- We are looking at changes to the plan for new hires.
- We have discussed additional funding methods.
- We have maxed out the total contributions for employer, as well as employee.
- We maintain the contribution rate at the higher of the actuarially determined rate or the historical high water mark, resulting in less contribution rate volatility but quicker paying off of unfunded liability.
- Working with employing agencies to pay down UAAL and reduce compensation earnable items of pay. Assist in objective evaluation of hybrid defined benefit/defined contribution plan. Provide input during bargaining meetings regarding pension costs and impacts of potential changes to compensation structure.

Innovations/Best Practices

In the study, respondents were asked to share a success story regarding a best practice or innovation that other plans may like to learn about. Below is a text cloud showing those words that appear most often in respondents' comments. Underneath the text cloud are the verbatim comments.



Top Themes:

- Improve education (especially for employers, but also for retirement readiness)
- Offering a health care savings plan
- Increased use of data, metrics and benchmarking

Comments:

- Automatic enrollment in our voluntary 457 deferred compensation plan for new state employees hired after 1 July 2015. Participation is voluntary, but default is to opt-in with 3% salary deferral. First 90 days invested in stable value (a permissible withdrawal period with no tax penalty or risk of market loss); afterwards person is invested in a target-date fund appropriate for their age. Hope to use as a model for non-state employers (school districts, cities & counties).
- Benchmarking operational areas
- Comparing our administrative and fee expenses with our retirement systems.
- Completed implementation of several straight through processing initiatives.
- Creating an employee portal whereby employees can access their 401(a) account information 24/7, view service dates, retirement eligibility dates,

benefit earned YTD, prepare future dated benefit calculations, in addition to all Retirement Board agendas, minutes, activities, news articles, pertinent information, links to outside resources.

Educating decision makers with new trends and investment allocation ideas to prevent major losses in a market downturn similar to 2008

- Enhanced security of member portal
- ERSGA implemented an online application for refund requests a few years ago and is currently implementing an online application for retirement applications.
- Establish a Retirement Investment committee that is comprised with top investment professionals in the community and is independent of political affiliations
- FPPA participated in the Baldrige Performance Excellence Program, as

administered by Rocky Mountain Performance Excellence, receiving the Timberline Award, which acknowledged FPPA has a high-performing organization.

- I believe the Board's annual review and reduction of the investment return assumption is considered a best practice. By making incremental reductions, the Board has limited the impact to the employer on the employer contribution rate.
- Implementation of an immunizing strategy for benefit shortfalls
- Implementation of risk management system
- Implemented Crisis Risk Offset (CRO) investment strategy intended to offset expected asset declines in a protracted down market.
- Implemented new portfolio structure.

Innovations/Best Practices – *Continued*

- Implementing a financial wellness strategy that will focus on providing tailored content to help participants better prepare for retirement.
- Implementing and revising our Leadership Scorecard. Metrics within the scorecard are tied to the goals of our Strategic Plan
- In 2001 MSRS created a post-employment pre-tax medical expense savings plan called the Health Care Savings plan. Participation is determined by employee bargaining unit contract and is mandatory to the extent determined by contract. The health care savings plan has proven an effective vehicle for addressing growing post-retirement health care expenses. This year the plan passed \$1 billion in assets.
- In a five year period we've increased plan assets by over 70%, increased our funded ratio over 27%, and decreased our UAAL by almost 50% because the Pension Board addressed and educated city council regarding properly funding the Plan, and city council listened. The Board also moved to the level dollar method, increased diversification, took advantage of changes in state law investment guidelines, and maintains active oversight of the Plan and its service providers. The Board implemented: a pension education policy, a fiduciary policy and a code of conduct policy. The Board is also a member of IFEFP, NCPERS, FPPTA and GAPPT. Only the well educated can educate.
- Individualized employee counseling sessions providing information based on their specific situation and goals.
- Large numbers of employees are able to telecommute through a secure portal.
- Moving all health care assets into a 115 Trust under Internal Revenue Code 115.
- MSRS administers a Health Care Savings Plan which is a DC plan which assists retirees in paying for post-employment medical expenses. The plan is popular among our employers and employees and recently passed the \$1 billion mark in assets under management.
- Negotiated additional employer contributions in lieu of approved pay raises.
- New Pension Administration System
- New pension administration system
- New Pension Administration System
- Not applicable at the moment
- Online submission of retirement application
- Our 10 year Historical report is a great tool. we use it to talk about how we went from 102% funded to 44% funded and now on our way back up. it shows that it is not all about investment earnings and employee/employer contributions. It is also a great leave behind for higher level executives that may not fully understand why we are where we are. it can be found on the reporting tab of www.wcers.org
- Pushing and negotiating with investment managers to move towards incentive based and performance based fees.
- Reorganized employer reporting staff and processes to increase efficiency and automation in conjunction with a renewed focus on employer outreach and training.
- The plan is working on Business Intelligence as it relates to membership and our employers. We are looking at data to see how we can better understand trends that impact our system. Our experience is the more you look at data, the better you can explain and understand nuances around our data set.
- The transition of investment's accounting method from a cost method to an equity method allowing for improved data to automate Accounting's year-end processes.
- Updates to core systems and member and retiree access.
- We have implemented a pre-retirement workshop for our actives within five years of retirement. It has really prepared our members for every element they will face once they do retire.
- WE HAVE IMPLEMENTED A TRUSTEE INTERNSHIP TO DEVELOPE A POOL OF QUALIFIED CANDIDATES WHO ARE UP TO DATE ON FUND MATTERS TO FILL FUTURE VACANCIES AND UNFORESEEN EMERGENCIES.
- We recently implemented a new member and retiree system that enables more web-based, self-service for all members and retirees.
- WE UPDATED AND IMPROVED OUR INVESTMENT ALLOCATION AND POLICY.
- We were required to refund contributions that members made for an early retirement option that was eliminated. The statutory timeframe for making the refunds was very short. We designed a process through which members could see the amount of their refunds online and apply for them online. The process ran very smoothly and we will use it as a model for future benefit distributions.

Respondents were asked to specify what “other” asset class they invested in. Below is a text cloud showing those words that appear most often in respondents’ comments. Underneath the text cloud are the verbatim comments.



Top Themes:

1. Private markets (equity, debt and real estate)
2. Risk Parity
3. Master limited partnerships (MLP)

Comments:

- % for Target Asset Allocations is midpoint of a range; Other is Private Debt which is included in private equity/hedge fund/alternatives
 - % for Target Asset Allocations is midpoint of a range; Other is Private Debt which is included in private equity/hedge fund/alternatives
 - % for Targets is midpoint of range
 - 4.50% rate sensitive credit, 4.50% non-rate sensitive credit, 3.00% convertibles
 - 5% TIPS and 5% Global Bond
 - Absolute Return
 - Absolute Return
 - Absolute Return
 - Absolute Return
 - Absolute Return
 - Absolute Return
 - Absolute Returns and Natural Resources/Infrastructure
 - Alternatives
 - Alternatives
 - Alternatives
 - Alternatives
 - Arbitrage
 - CAA (other) - Risk Parity (7.6%); TIPS (1.7%); Liquid Pool (Real Assets) (5%); and Private Real Assets (1.3%) GIR (other) - Risk Parity (4.1%); TIPS (1.2%); Liquid Pool (Real Assets) (N/A); and Private Real Assets (2.9%)
 - Collective Trust - Black Rock Equity Index A
 - Covered Calls
 - one year gross return of 6.7%; Risk Parity - current allocation is 13% with a target allocation of 14% and a one year gross return of 10.6%; Private Appreciation - current allocation of 12.1% with a target allocation of 12% and a one year gross return of 6%; Crisis Risk Offset - current allocation of 18.3% with a target of 20% and a one year gross return of -3.8%.
 - Current: Non Core FI=8.0%; Real Return=8.8%; Target Non Core FI=20%; Real Return=10%; Total 1 year gross Non Core FI=7.96%+Real Return=6.95%
 - DEFENSIVE EQUITY
 - Diversified Credit
 - Dynamic Asset Allocation
 - Emerging markets 4.6, Real Return 7.4, Absolute Return 10.9
 - Emerging Markets Debt
 - Emerging Markets Debt, 2% allocated, 2016 Return: 9.69%
 - EMERGING MARKETS EQUITY
 - Global Asset Allocation. Also our Real Estate is called Real Assets and includes Infrastructure
 - Global F.I. = Core, HY, Bank Loans and Global Opportunistic; Other = Public and Private Real Assets; One Year Gross return for Global Equity, Cash Equivalents, and Public and Private Real Assets = N/A
 - Global Real Assets
 - GTAA/Risk parity
 - Hedge Fund. The allocation is combined with Private Equity, but the return is shown separately.
 - In our case, Global Equity is Emerging Market Equity

Other Investments – *Continued*

- Inflation Linked Assets
- inflation protection fund and socially responsive fund
- Infrastructure
- Infrastructure
- Infrastructure
- Infrastructure and Master Limited Partnerships
- Infrastructure/Timber
- Liquid assets and GTAA
- long/short Equity 10%
- Marketable Alternatives
- Master Limited Partnership
- Master Limited Partnerships
- MLP
- MLP
- MLP - 4% Convertibles - 5%
- MLP Energy
- MLP's & Timber
- Mortgage Backed Securities
- Multi asset inflation Linked assets
- Multi-Asset Strategy, Infrastructure
- Natural Resources
- Opportunistic-Mezzanine Debt
- Opportunity current 2.1, alternatives current 5.8 target 5
- Other asset class - Global Inflation Linked Bonds. (HY is included in Domestic Fixed Income). Private & HF Returns not Available as composite (Private Equity: 8.6%, Private Real Assets: 2.4%, Private Debt: 8.6%, Hedge Funds: -6.2%)
- Other includes Private Equity (12.9% return), Multi-Asset Strategies (3.5% return) and Opportunistic Investments (7.7% return)
- Other includes timber, risk-parity, tactical, credit, and other opportunistic strategies.
- Other: Risk Parity. NOTE: Percentages reported for "commodities" are actually for MLP. For questions below re: auto COLA and employer pickup, not offered to all members, just specific tiers.
- Overlay timberland
- Private Markets. This includes private debt, private equity, real estate and other real assets such as infrastructure
- Public Real Assets - 8.6 (current)/10.0 (target); Credit Opportunities - 2.5 (current)/2.5 (target) - *Do not track gross returns, only net returns*
- Real Assets
- Real Assets (ex Energy/MLP) - Agriculture (Illiquid) & Infrastructure (Liquid & Illiquid)
- Real assets = 11.5%, 12.5% ; Diversifying strategies = 9.2%, 10%
- Real Estate Debt (Mortgages)
- Real Return - GTAA, TIPS, Commodities, MLP
- Real return and absolute return
- Real Return, Covered Calls
- Risk diversifying strategies/inflation hedge
- Risk Parity
- Risk Parity
- Risk Parity
- Risk Parity 5%, Private Real Assets 7.5%
- Risk Parity, Global Tactical Asset Allocation, Rebalancing
- Showing Credit Fixed Income under High Yield Bond
- Target allocation to Public Equity is 37%. We don't have underlying policy targets. We don't report gross investment returns, only net.
- Timber
- Timber
- Timber, Farmland
- Timber, MLPs
- Timber/Natural Resources
- Timberland (5.0%)
- TIPS, MLPs
- TIPS, MLPs
- Treasury inflated protected securities
- We are part of the State of MA-PRIT Fund
- We do not track the returns based on individual asset classes.

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National Conference on Public Employee Retirement Systems
The Voice for Public Pensions

NCPERS PUBLIC EMPLOYEE RETIREMENT SYSTEMS STUDY

Please share your feedback so we can continue to provide the most up-to-date data addressing retirement issues for public pension plans across the nation. Your response will remain confidential and will not be shared without your permission.

Your most recent Comprehensive Annual Financial Report will help answer most questions.

If you administer more than one plan, please copy this survey for each and note the name of the fund. If you are a multi-employer plan, you may use aggregate numbers from your CAFR and respond to the questions in the generally applicable way for most of the plans you administer.

Please enter your ID number from the cover email:

Plan name:

What type of plan is this? **(Mark all that apply.)**

☐ Defined Benefit Plan (Traditional Pension Plan)

☐ Combination Plan (Blends Defined Benefit & Defined Contribution)

☐ Defined Contribution Plan (Mandatory Retirement Account)

☐ Cash Balance Plan

Plan Statistics

1. Fund statistics **from most recently completed fiscal year** (if applicable). Please do not use commas, dollar signs or percentage marks in the field - it is numeric only.

Total number of members (actives + deferred + retirees + beneficiaries):

Total number of staff who administer the fund (full-time equivalent):

Fiscal year of your CAFR referenced for this survey (MM/DD/YYYY):

Market value of plan assets (\$ in thousands):

Plan fiduciary net position (a) (\$ in thousands):

Total pension liability (b) (\$ in thousands):

Current funded ratio (a divided by b) (%):

Cost of Living Adjustment (COLA) offered by plan in last fiscal year (%):

Did your plan receive the full (100%) actuarially determined contribution in the last fiscal year? ☐ Yes ☐ No

Member contributions as % of payroll (%):

Employer contributions as % of payroll (%):

Investment manager expenses (basis points):

Administrative expenses (basis points):

Investment assumption/discount rate (%):

Inflation assumption (%):

Investment smoothing period (years):

Amortization period (years):

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Type of amortization period:

☐ Open/Rolling

☐ Closed/Fixed

Gross investment return % (1 year):

Gross investment return % (5 year):

Gross investment return % (10 year):

Gross investment return % (20 year):

Current and Target Asset Allocation / Investment Return

2. For each of the asset classes below, please specify your **CURRENT** and **TARGET** asset allocation and your **1 YEAR GROSS INVESTMENT RETURN (%)** for each asset class. **Please note:** percentages for asset allocation should equal 100%.

CURRENT asset allocation:

Global Equity (%):	<input type="text"/>
Domestic Equity (%):	<input type="text"/>
International Equity (%):	<input type="text"/>
Global Fixed Income (%):	<input type="text"/>
Domestic Fixed Income (%):	<input type="text"/>
International Fixed Income (%):	<input type="text"/>
High Yield Bond (%):	<input type="text"/>
Real Estate (%):	<input type="text"/>
Private Equity/Hedge Fund/ Alternatives (%):	<input type="text"/>
Commodities (%):	<input type="text"/>
Cash Equivalents (%):	<input type="text"/>
Other (specify asset below) (%):	<input type="text"/>

TARGET asset allocation:

Global Equity (%):	<input type="text"/>
Domestic Equity (%):	<input type="text"/>
International Equity (%):	<input type="text"/>
Global Fixed Income (%):	<input type="text"/>
Domestic Fixed Income (%):	<input type="text"/>
International Fixed Income (%):	<input type="text"/>
High Yield Bond (%):	<input type="text"/>
Real Estate (%):	<input type="text"/>
Private Equity/Hedge Fund/ Alternatives (%):	<input type="text"/>
Commodities (%):	<input type="text"/>
Cash Equivalents (%):	<input type="text"/>
Other (specify asset below) (%):	<input type="text"/>

Gross investment return % (1 yr):

Global Equity (%):	<input type="text"/>
Domestic Equity (%):	<input type="text"/>
International Equity (%):	<input type="text"/>
Global Fixed Income (%):	<input type="text"/>
Domestic Fixed Income (%):	<input type="text"/>
International Fixed Income (%):	<input type="text"/>
High Yield Bond (%):	<input type="text"/>
Real Estate (%):	<input type="text"/>
Private Equity/Hedge Fund/ Alternatives (%):	<input type="text"/>
Commodities (%):	<input type="text"/>
Cash Equivalents (%):	<input type="text"/>
Other (specify asset below) (%):	<input type="text"/>

If you entered an "Other" asset class above, please specify what other class(es) your fund is currently invested?

3. Which **retirement benefits** below does your plan offer or is considering offering? Please skip individual items below if not applicable.

	Already Offering	Considering Offering
Defined Benefit Plan (traditional pension plan in which the benefit is defined by a formula based on service and average wages)	<input type="checkbox"/>	<input type="checkbox"/>
Defined Contribution Plan (retirement account in which an employer's contribution is specified and employee participation is generally mandatory)	<input type="checkbox"/>	<input type="checkbox"/>
Deferred Compensation Plan (tax-deferred retirement savings account such as a 457, 403b, 401k; employee participation is voluntary)	<input type="checkbox"/>	<input type="checkbox"/>
Combination Plan (blends Defined Benefit and Defined Contribution elements)	<input type="checkbox"/>	<input type="checkbox"/>
In-service death benefit	<input type="checkbox"/>	<input type="checkbox"/>
Disability benefit provided either within the plan, by Social Security or by employer	<input type="checkbox"/>	<input type="checkbox"/>
An automatic post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
A compounding post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
An ad hoc (not necessarily automatic or compounding) post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
Employer pick up of employee contributions	<input type="checkbox"/>	<input type="checkbox"/>
Deferred Retirement Option Plan (DROP - in all forms)	<input type="checkbox"/>	<input type="checkbox"/>

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4. Which **retirement plan changes** below have been implemented or are being considered by the plan or plan sponsors? Please skip individual changes below if not applicable.

	Already Implemented	Considering Implementing
Lower the actuarial assumed rate of return	<input type="checkbox"/>	<input type="checkbox"/>
Raise benefit age/service requirements	<input type="checkbox"/>	<input type="checkbox"/>
Increase employee contributions	<input type="checkbox"/>	<input type="checkbox"/>
Hold or lengthen the amortization period to improve affordability	<input type="checkbox"/>	<input type="checkbox"/>
Shorten the amortization period to improve funded status	<input type="checkbox"/>	<input type="checkbox"/>

5. Which **business practices** below have been implemented or are being considered by the plan or plan sponsors? Please skip individual items below if not conducted.

	Already Implemented	Considering Implementing
Conduct a death audit	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an actuarial audit by a third party actuary (includes replication of valuation and opinion on actuarial assumptions)	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an information systems security audit	<input type="checkbox"/>	<input type="checkbox"/>
Conduct a building security audit	<input type="checkbox"/>	<input type="checkbox"/>
Update/strengthen an asset allocation study	<input type="checkbox"/>	<input type="checkbox"/>
Expand operational performance benchmarking	<input type="checkbox"/>	<input type="checkbox"/>
Update or enhance administrative software used for member data	<input type="checkbox"/>	<input type="checkbox"/>
Update or enhance online portal provided for members to access account information	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an employer/reporting unit satisfaction assessment	<input type="checkbox"/>	<input type="checkbox"/>
Comply with new State statutory or regulatory requirements to report your funded status based on a rate of return different from your assumed rate of return	<input type="checkbox"/>	<input type="checkbox"/>
Enhance member financial wellness/retirement readiness resources	<input type="checkbox"/>	<input type="checkbox"/>

6. Which **communications and member engagement practices** below have been implemented or are under consideration by the plan or plan sponsors? Please skip individual practices below if not conducted.

	Already Implemented	Considering Implementing
Develop public relations plan to address "Pension Envy"	<input type="checkbox"/>	<input type="checkbox"/>
Develop staff talking points on key issues affecting the fund	<input type="checkbox"/>	<input type="checkbox"/>
Expand retirement planning education for members	<input type="checkbox"/>	<input type="checkbox"/>
Conduct a member satisfaction survey	<input type="checkbox"/>	<input type="checkbox"/>
Notify members of updated handbook/summary plan description (electronically or paper)	<input type="checkbox"/>	<input type="checkbox"/>
Actively use social media (Facebook, Twitter, etc.) to share messages with members	<input type="checkbox"/>	<input type="checkbox"/>

7. Which of the following **communication methods** does your plan or plan sponsor have the ability to conduct?

	Yes	No
Capacity to send a postcard to the home address of your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send a mass phone message to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send a mass text message to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send an email to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Does your plan have a Facebook or Twitter account?	<input type="checkbox"/>	<input type="checkbox"/>
Does your plan have a mobile app?	<input type="checkbox"/>	<input type="checkbox"/>

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8. Which **oversight practices** below have been implemented? Please skip individual practices below if not conducted.

	Yes	No
Receipt of the GFOA Award of Excellence for the most recent award cycle	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of an unqualified opinion from the auditor on the fund's financial statements, internal controls and compliance with applicable laws and regulations	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an actuarial valuation at least every 2 years	<input type="checkbox"/>	<input type="checkbox"/>
Board adoption and adherence to written investment policies	<input type="checkbox"/>	<input type="checkbox"/>
Board adoption of written fiduciary standards	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of annual investment performance evaluation from an outside independent investment review entity	<input type="checkbox"/>	<input type="checkbox"/>
Use of a formal enterprise risk management framework	<input type="checkbox"/>	<input type="checkbox"/>

9. How satisfied are you with your plan's readiness to address retirement trends and issues over the next 2 years?

Very Dissatisfied= 1	2	3	4	5	6	7	8	9	Very Satisfied= 10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. If you have an unfunded accrued actuarial liability, what strategies have you put in place to reduce it beyond traditional amortization?

11. Think about best practices. Please share a success story or plan innovation you are considering that other plans may like to learn about:

12. Which categories best describe your innovation or best practice story above? **(Please mark all that apply.)**

- ☐ Retirement benefit
 ☐ Business practice
 ☐ Oversight practice
☐ Plan change
 ☐ Communication/ engagement practice
 ☐ Investment

Questions about your fund (your responses will be confidential)

13. What type of employees/beneficiaries does your fund serve? **(Please mark all that apply.)**

- ☐ Township
 ☐ County
 ☐ State
 ☐ Other
☐ City/village
 ☐ Police/fire
 ☐ Educational

14. What type of health plan does your pension plan sponsor? **(Please mark all that apply.)**

- ☐ None, does not sponsor (skip to Q16)
 ☐ Supplemental gap health plan
☐ Traditional (HMO, PPO, POS, etc.)
 ☐ Healthcare subsidy

15. Who is eligible for the health plan? **(Please mark all that apply.)**

- ☐ Active members
 ☐ Retirees
 ☐ Beneficiaries

16. Are your members eligible for Social Security coverage?

- ☐ Yes
 ☐ No

17. Are your members eligible for Medicare coverage?

- ☐ Yes
 ☐ No

18. Do you include overtime in the calculation of the retirement benefit?

- ☐ Yes
 ☐ No
 ☐ N/A

19. Does your plan provide retiree health benefits?

- ☐ Yes
 ☐ No

20. Has your plan been consulted, involved, or have had internal discussions about a state-facilitated retirement program for the private sector?

- ☐ Yes
 ☐ No

21. Does your plan allow Board Members the ability to participate via conference call and vote?

- ☐ Yes
 ☐ No

22. Which role(s) best describe your relationship to the fund? **(Please mark all that apply.)**

- ☐ Staff
 ☐ Board member/ trustee
 ☐ Plan consultant
 ☐ Other

23. May we contact you if we have additional questions?

- ☐ Yes
 ☐ No

24. Please provide your name and email so we may provide access to the interactive comparison dashboard.

This concludes the study. Thank you for your time and cooperation.

For more information:

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