

Florida Retirement System Actuarial Assumption Estimating Conference Executive Summary for Fall 2014

The Florida Retirement System Actuarial Assumption Conference met on August 11, 2014 to adopt updated demographic assumptions and met again on September 24, 2014 to adopt economic assumptions, to be used for the actuarial valuation of Florida's Retirement System (FRS). The preliminary results show that the FRS continues to have an unfunded actuarial liability (UAL). As updated, the projected UAL is expected to slightly decrease from last year's \$21.6 billion to \$21.5 billion. The system is currently 85.9% funded on an actuarial basis, and the funded status is expected to increase to 86.6% in the 2014 updated valuation.

The newly adopted demographic assumptions include updated mortality rates and retirement age to reflect recent data and research that indicate people are living longer and retiring later. In addition, the conference adopted a change to the methodology used to estimate the number of people entering DROP to more accurately reflect observed behavior.

The newly adopted economic assumptions primarily include updated investment returns and inflation. Asset performance has been very favorable in four out of the past five fiscal years, as returns have far exceeded the 7.75% investment rate assumption. The table below shows actual investment returns for the past five fiscal years.

| Fiscal Year | Investment Return |
|-------------|-------------------|
| 2009-10 | 14.0% |
| 2010-11 | 22.1% |
| 2011-12 | 0.29% |
| 2012-13 | 13.1% |
| 2013-14 | 17.4% |

The conference adopted new assumptions for both the inflation rate and the (nominal) investment rate, which indirectly resulted in a change to the real rate of return as well. The table below compares the rates that will be used in the 2014 evaluation to those that were included in the 2013 report. The inflation rate was decreased from 3.0% to 2.6% based on historical data and expected future economic conditions. The nominal investment return was lowered slightly from 7.75% to 7.65%. These two changes resulted in an increase in the real rate of return from 4.61% to 4.92%. The SBA has an internal goal of 5.0% real rate of return, which is consistent with these adopted assumptions.

| 2013 | 2014 |
|-------------------------|-------------------------|
| 7.75% Investment Return | 7.65% Investment Return |
| 3.00% Inflation | 2.60% Inflation |
| 4.61% Real Return | 4.92% Real Return |

Note: The real return also takes into account administrative expenses, so the numbers in this table are not additive.

The 2014 Legislature fully funded the UAL at the recommended contribution rate as provided in the 2013 valuation report. This action and continued full funding of the recommended UAL rate, as committed to by the Legislature, will result in the gradual increase of the funded ratio in future years. The UAL contribution rate is calculated assuming the liability will be funded over a period of 30 years. The contribution rates should remain

stable as long as contributions are made as recommended and actual experience mirrors projections. However, there are many factors that affect these calculations and can cause the contribution rates to increase or decrease over time.

The following table displays summary results from the 2013 Final Valuation, the 2014 Baseline Valuation (which includes demographic data updates with 2013 assumptions), and the 2014 Updated Valuation (which includes both the demographic updates and the newly adopted 2014 economic assumptions).

| | 2013 Final | 2014 Baseline | 2014 Updated |
|--|------------|---------------|--------------|
| Actuarial Liability (AL) | \$153.3 | \$158.3 | \$160.1 |
| Actuarial Value of Assets (AVA) | \$131.7 | \$138.6 | \$138.6 |
| Unfunded Actuarial Liability (UAL) | \$21.6 | \$19.7 | \$21.5 |
| Funded Status (FS) | 85.9% | 87.6% | 86.6% |
| Normal Cost Rate (NCR) | 4.67% | 4.70% | 4.10% |
| Unfunded Actuarial Liability Rate (UALR) | 4.54% | 4.19% | 4.90% |
| NCR + UALR | 9.21% | 8.89% | 9.00% |

Note: dollars are in billions.

The preliminary report addresses information received through July 1, 2014. The final report will be based on these assumptions and released in December 2014.

2014 Florida Retirement System Actuarial Assumptions Conference ***ADDENDUM***

September 24, 2014

Robert Dezube, FSA
Matt Larrabee, FSA



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Overview of Addendum

- This document is an addendum to the materials we presented at the September 24, 2014 Actuarial Assumptions Conference that quantifies decisions reached during that meeting in public session
- This addendum cannot be appropriately interpreted without reference to the presentation materials noted above
 - Those materials, including caveats and disclaimers from that document, are incorporated by reference
- Amounts shown in this estimate were created by pro-rating results from other scenarios in our presentation materials
 - While final amounts may vary from these estimates, any variation should not be significant

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Valuation Results – 2013 & 2014 Baseline

- The next slide shows “2014 Baseline” valuation results
 - 2014 Baseline calculates liabilities as of July 1, 2014 using the methods and assumptions from the 2013 valuation, before reflection of changes to methods and assumptions adopted by the Conference
- The slide also shows “2014 Updates” results
 - These results reflect all methods and assumptions adopted by the conference in its August & September 2014 meetings

2013 Final results shown are liabilities and rates calculated for funding purposes; results differed for GASB financial reporting

| | | | |
|----------------------|----------------------|--------------------------|----------------------|
| Current Ultimate EAN | Current Ultimate EAN | Alternative Ultimate EAN | Cost Method |
| 3.00% Inflation | 3.00% Inflation | 2.60%* Inflation | Inflation Assumption |
| 7.75% Inv. Return | 7.75% Inv. Return | 7.65% Inv. Return | Investment Return |

| (Amounts in \$ billions) | 2013 Final (2013 data; 2013 assumptions) | 2014 Baseline (2014 data; 2013 assumptions) | 2014 Updates* (2014 data; 2014 assumptions) | Effect of Updates |
|--------------------------|--|---|---|-------------------|
| AL | \$ 153.3 | \$158.3 | \$160.1 | +\$1.8 |
| AVA | <u>\$ 131.7</u> | <u>\$138.6</u> | <u>\$138.6</u> | <u>\$0.0</u> |
| UAL | \$ 21.6 | \$19.7 | \$21.5 | +\$1.8 |
| FS | 85.9% | 87.6% | 86.6% | -1.0% |
| NCR | 4.67% | 4.70% | 4.10% | -0.60% |
| UALR | <u>4.54%</u> | <u>4.19%</u> | <u>4.90%</u> | <u>+0.71%</u> |
| NCR + UALR | 9.21% | 8.89% | 9.00% | +0.11% |

* 3.25% payroll growth for 2014 Final

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Implied Real Return vs. 5% Real Return Target

- The table below shows implied real returns for the requested investment return and inflation assumption combinations

| | | | |
|-------|-------|-------|-------|
| | 2.75% | 2.50% | 2.60% |
| 7.65% | 4.77% | 5.02% | 4.92% |
| 7.75% | 4.87% | 5.12% | 5.02% |

- The SBA's Investment Policy Statement real return target is 5%
- The implied return is developed via division rather than subtraction
 - The entry for 7.65% / 2.60% is calculated as:
 $(1 + .0765) / (1 + .026) - 1 = 4.92\%$



FLORIDA RETIREMENT SYSTEM

2014 Experience Study

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September 8, 2014

Mr. Dan Drake
State Retirement Director
Division of Retirement
Florida Department of Management Services

Re: 2014 Experience Study – Florida Retirement System

Dear Mr. Drake:

The results of an actuarial valuation are based on the actuarial methods and assumptions used in the valuation, along with the benefit provisions and census and financial data. These methods and assumptions are used to develop actuarially calculated employer contribution rates, disclose employer liabilities pursuant to GASB requirements and to analyze the fiscal impact of proposed legislative amendments.

This experience study recommends to the Florida Retirement System Actuarial Assumptions Conference (Conference) the actuarial methods and assumptions to be used in the July 1, 2014 actuarial valuation of the Florida Retirement System (FRS). This experience study report has been prepared exclusively for the Florida Department of Management Services (DMS).

Except where otherwise noted, the analysis in this study was based on data for the experience period from July 1, 2008 to June 30, 2013 as provided by the Division of Retirement (Division). The Division is solely responsible for the validity, accuracy and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

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The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

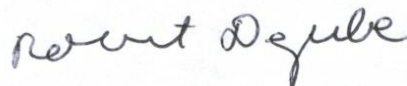
The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,



Matt Larrabee, FSA, MAAA
Principal and Consulting Actuary



Robert Dezube, FSA, MAAA
Principal and Consulting Actuary

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1. Executive Summary

This experience study report has been prepared exclusively for the Florida Department of Management Services (DMS) in order to analyze the experience of the Florida Retirement System (FRS) from July 1, 2008 through June 30, 2013 and to recommend actuarial methods and assumptions to be used in the July 1, 2014 actuarial valuation of FRS. To best understand and interpret this report and the methods applied to reach our recommendations, it is important to reference the presentation that was made to the Florida Retirement System Actuarial Assumptions Conference (Conference) on August 11, 2014. That presentation (August presentation) is hereby incorporated into this report by reference. Some items presented and discussed in August still await final decisions from the Conference at the time of this report's publication. Those items, which will affect the 2014 actuarial valuation of FRS, will be decided by the Conference at its next meeting, which is currently scheduled for September 24, 2014.

A brief summary of the recommended method and assumption changes as well as items for discussion and review contained in this report and/or in the August presentation follows:

Actuarial Methods

- Change the actuarial cost allocation method away from the interpretation of Ultimate Entry Age Normal (Ultimate EAN) used in the 2013 valuation. The recommended change is to either an alternative interpretation of Ultimate EAN or to Individual Entry Age Normal (Individual EAN). Both the current method and the two proposed alternative methods are detailed in the August presentation. If Individual EAN is selected, a single cost allocation method could be used for both contribution rate calculations and for financial reporting (i.e., accounting) calculations under incoming Governmental Accounting Standards Board (GASB) financial reporting standards since the incoming standards mandate the use of Individual EAN for financial reporting.
- Consider pros and cons of re-amortizing all accumulated unfunded actuarial liability (UAL) as of July 1, 2014 over a closed 20-year period as a level percentage of the projected payroll on which the UAL Rate is charged. A decision to re-amortize involves trade-offs between rate stability, budgeting impacts, and projected improvement of funded status over time, and those trade-offs are discussed in the August presentation.

Economic Assumptions

- Decrease the inflation assumption from the current assumption of 3.00% to either 2.50% or 2.75%.
- Decrease the annual payroll growth assumption from the current assumption of 4.00% to 3.25%.
- Decrease the investment rate of return assumption below the current assumption of 7.75% per year. Based on the current target asset allocation, analyses under two different sets of capital market assumptions (Hewitt EnnisKnupp & Milliman) indicate the best estimate of future expected returns falls below 7.75%.
- Decrease the assumption for individual member pay increases as detailed in this report and in the August presentation to better reflect both recent observed experience and longer-term historical trends of FRS employers.

Demographic Assumptions

- Adjust the non-disabled mortality assumption to incorporate Projection Scale BB, which was published by the Society of Actuaries subsequent to the previous FRS experience study. The use of Scale BB allows FRS to use a standard Society of Actuaries mortality table for each membership class/gender group without additional adjustment.

- Update assumptions for incidence of DROP entry, immediate retirement and deferred retirement timing to reflect observed experience for all membership classes. Observed experience for the July 2010 to June 2011 period was excluded in setting the DROP entry assumption due to extraordinary levels of election into DROP that year due to legislated changes.
- Eliminate the use of artificially depressed rates for incidence of DROP entry in the calculation of liabilities used for determining actuarially calculated contribution rates. In the 2013 actuarial valuation, lower DROP entry incidence rates were used for the determination of the actuarially calculated contribution rates than were used for financial reporting. Instead, a single set of assumed rates based on best estimate observed experience will be used for both plan funding and GASB financial reporting calculations in 2014.
- Update assumed rates of disability to a custom table based on FRS observed experience. The disability incidence tables differ by gender and also by membership class, with a different table for Special Risk members than for all other membership classes.
- Retention of the current assumptions for pre-retirement termination of service, with the limited exception of updates for members of the Senior Management Service Class at short service levels.
- Increase the assumption for hours of unused annual leave available at time of retirement based on recently observed experience.

2. Actuarial Methods and Allocation Procedures

Overview

Actuarial methods and allocation procedures are used as part of the valuation to determine actuarial accrued liabilities, to determine normal costs, to allocate costs to individual employers and to amortize unfunded liabilities.

The actuarial methods used for the July 1, 2013 actuarial valuation and the changes recommended for the July 1, 2014 actuarial valuation are shown in the table below.

| Method | July 1, 2013 Valuation | July 1, 2014 Valuation |
|-------------------------|--|---|
| Cost method | Interpretation of Ultimate Entry Age Normal (Ultimate EAN) whereby the present value of future normal costs for a Tier I member is over his or her projected future working career based on Tier II retirement assumptions | Change to either: <ul style="list-style-type: none"> Alternative interpretation of Ultimate EAN, whereby a Tier I projected future working career for Tier I members is used, or Individual Entry Age Normal (Individual EAN), as will be mandated for financial reporting calculations under GASB 67 and GASB 68 |
| UAL Amortization method | UAL amortized as a level percent of projected payroll on which UAL Rates are charged | No change |
| UAL Amortization period | Closed 30-year amortization for each the cumulative deviation from experience (combined investment and demographic) in each valuation | Consider re-amortizing all accumulated unamortized UAL as of July 1, 2014 over a shorter closed period, such as 20 years and shortening the amortization period for future emerging gains and losses for deviations from assumption |
| Asset valuation method | 5-year smoothing with a 80%-120% of market value corridor, consistent with statute | No change |

The methods and procedures are described in greater detail on the following pages and/or in the August presentation.

Actuarial Cost Method

The total cost of FRS, over time, will be equal to the benefits paid and expenses less investment earnings and is not affected directly by the actuarial cost method. The actuarial cost method is simply a tool to allocate costs to past, current or future years and thus primarily affects the timing of cost recognition.

FRS currently uses Entry Age Normal (EAN), which is by far the most commonly used cost method for state pension systems. Conceptually, EAN sets the normal cost rate level as a percent of payroll over a member's full projected working career. There are different categories of EAN, including Individual EAN, which is the most commonly used EAN category, and Ultimate EAN, which is the category of EAN used by FRS. Even each category of EAN contains different interpretations of how to calculate the key metrics. New GASB Standards Nos. 67 & 68 will mandate the use of a particular interpretation of Individual EAN for financial reporting purposes.

Sponsors have autonomy to choose any cost method and identify any variation of that cost method for purposes of setting system funding policy. Ultimate EAN, which is currently used by FRS, sets normal cost as if each member in the system was initially enrolled on or after July 1, 2011 (Tier II). As such, normal cost is lower for Ultimate EAN than for Individual EAN, which sets normal cost in a manner that is cognizant of the tier in which the member actually participates. Cost methods do allocate benefits between past and projected future service but do not affect the level of projected benefits. As such, compared to the Individual EAN method Ultimate EAN allocates fewer projected benefits to future service (via lower normal cost) and hence produces a higher actuarial accrued liability for past service as a counterbalance.

The interpretation of Ultimate EAN used in the 2013 valuation allocates benefits to future service for members initially enrolled before July 1, 2011 (Tier I) over a projected future service career based on Tier II retirement timing assumptions. Our recommendation is to change from that interpretation of Ultimate EAN to either:

- An alternate interpretation of Ultimate EAN, that continues to set normal cost rates equivalent to the current interpretation, but only allocates benefits for Tier I members over the projected future service period based on Tier I retirement timing assumptions, or
- An interpretation of Individual EAN that is consistent with GASB Standards Nos. 67 & 68

Additional detail on the alternate interpretations of Ultimate EAN and their estimated impact on actuarial accrued liability calculations can be found in the executive summary of our 2013 actuarial valuation report.

Amortization Method

Unfunded Actuarial Liability

The Unfunded Actuarial Liability (UAL) is amortized as a level percentage of projected payroll on which UAL Rates are charged in an effort to maintain level contribution rates as a percentage of payroll during the specified amortization period if future experience follows assumption. We recommend this methodology continue.

New UAL will arise each year when each new actuarial valuation is published. The newly arising UAL can be either positive or negative, and can be due either to experience varying from assumption or to changes in actuarial liability from modifications to assumptions and/or actuarial methods. Each year's newly arising UAL is currently amortized over a closed 30-year period as a level percent of the projected payroll on which UAL Rates are charged.

We recommend that the Conference consider the pros and cons of re-amortizing all existing UAL as of July 1, 2014 over a shorter closed period such as 20 years. A 20-year period is suggested because that payoff duration avoids significant negative amortization. Amortization periods longer than 20 years can incur significant negative amortization, wherein the calculated UAL increases for an extended period of time prior to final payoff even if all contributions are made and all assumptions are met. This is discussed and illustrated in the August presentation.

Asset Valuation Method

To calculate the Actuarial Value of Assets (AVA), FRS uses what is referred to as an asset smoothing method. The method recognizes actual investment performance different from long-term assumption systematically as follows:

1. Determine the total investment rate of return measured based on the beginning of year AVA and the market value of assets (MVA) at the end of the year.
2. Calculate the difference between the rate calculated in step 1 and the expected rate of return in the actuarial assumptions. Note that this difference can be positive or negative.
3. Calculate an investment rate of return equal to the assumed rate of return plus one-fifth of the difference determined in step 2.
4. The AVA at the end of the year is based on the beginning of year AVA and the rate calculated in step 3.

To insure that the AVA remains reasonably close to the fair MVA, the asset method includes a corridor whereby the AVA must remain within 80% to 120% of MVA.

The method in question is specified by statute, and we recommend no change to the asset valuation method.

3. Economic Assumptions

Overview

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, provides guidance on selecting economic assumptions used in measuring obligations under defined benefit pension plans. ASOP No. 27 suggests that economic assumptions be developed using the actuary's professional judgment, taking into consideration past experience and the actuary's expectations regarding the future. The process for selecting economic assumptions involves identifying components of each assumption and evaluating relevant data, then selecting reasonable assumptions that have no significant bias, such that the selections are not anticipated to result in actual performance persistently above or below assumptions based on the outlook at the time the assumptions are selected.

The Actuarial Standard of Practice noted above recently went through a "review and revision" process. The revised edition was adopted by the Actuarial Standards Board in September 2013 and is effective for any actuarial work product with a measurement date on or after September 30, 2014. While the previous version of the ASOP will still be the applicable standard for the 2014 valuation, we feel it is important to use assumptions that will comply with both versions of the standard. We have reflected this consideration in our recommendations. A summary of the economic assumptions used for the July 1, 2013 actuarial valuation and those recommended to the Conference for the July 1, 2014 actuarial valuation are shown below:

| Assumption | July 1, 2013 Valuation | July 1, 2014 Valuation |
|-------------------|------------------------|------------------------|
| Inflation | 3.00% | 2.50% or 2.75% |
| Real wage growth | 1.00% | 0.75% or 0.50% |
| Payroll growth | 4.00% | 3.25% |
| Investment return | 7.75% | Decrease assumption |

The recommended assumptions shown above, in our opinion, were selected in a manner consistent with the requirements of ASOP No. 27. Each of the above assumptions is described in detail below and/or in the August presentation.

Inflation

The assumed inflation rate is the basis for all of the other economic assumptions. It affects other assumptions including payroll growth, individual member salary increase, and investment return.

We recommend a decrease from the current inflation assumption of 3.00%. The basis for that recommendation is in the August presentation. The Conference indicated that it will select either a 2.50% or 2.75% inflation assumption at its meeting currently scheduled for September 24th.

Payroll Growth and Real Wage Growth

Real wage growth combined with inflation represents the expected growth in total payroll for a stable population. Changes in payroll due to an increase or decline in the covered population are not captured by this assumption. The payroll growth assumption is used to develop the annual amount necessary to amortize the unfunded actuarial liability as a level percentage of expected payroll. The payroll growth assumption used in the 2013 valuation was 4.00%, consisting of 3.00% inflation plus 1.00% real wage growth.

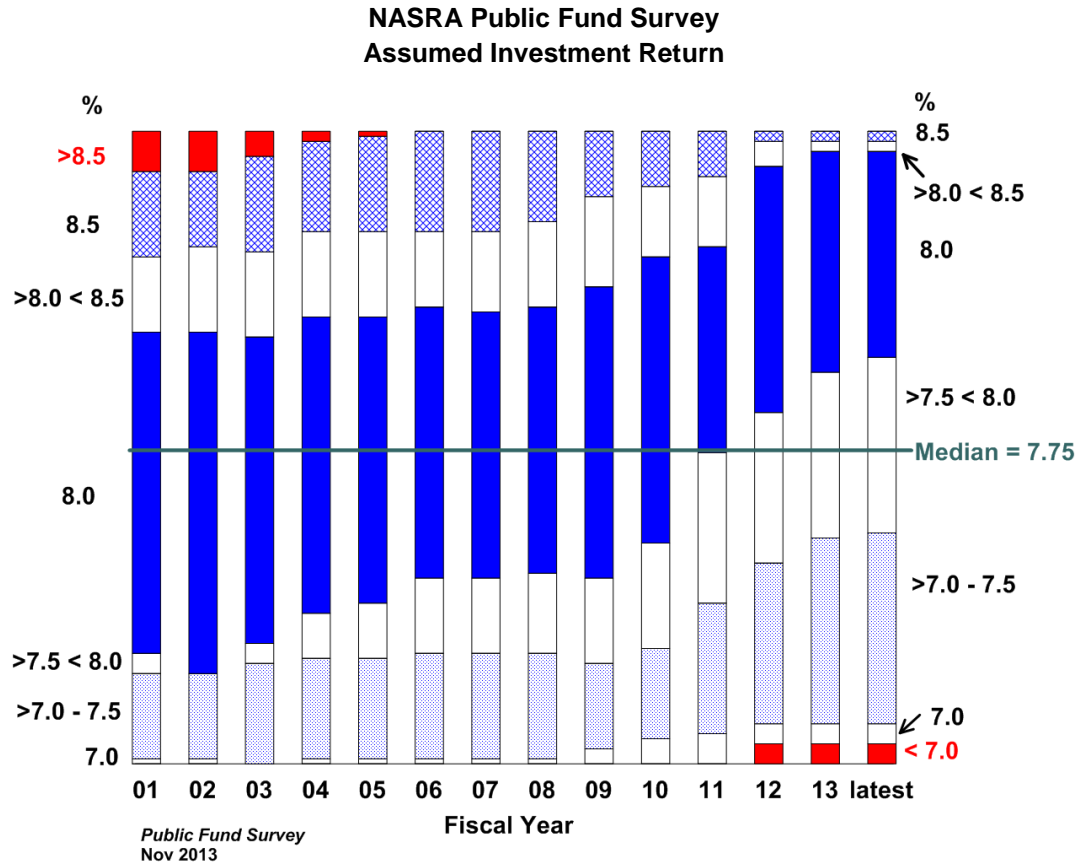
The Conference approved a change to 3.25% for the payroll growth assumption to be used in the 2014 valuation. This will consist either of 2.50% inflation plus 0.75% real wage growth or 2.75% inflation plus 0.50% real wage growth, with the decision based the Conference's selection of the inflation assumption at its September 24th meeting. The adopted assumption is better aligned with trailing 10-year growth on the payroll on which UAL Rates are charged, and the range of 0.50% - 0.75% for real wage growth is a reasonable range based on both recently observed national data and the Social Security Administration's forward-looking assumption sets.

Real wage growth represents wage increases above inflation for an entire group due to improvements in productivity and/or market competitive pressures. In contrast, merit wage growth is a component of an individual member's projected salary increases but does not affect system payroll growth assumptions. Merit projections represent the increases in wages for an individual due to factors such as performance, promotion, or seniority.

Investment Return

The assumed rate of investment return is used to discount the future projected benefit payments of the retirement plan to the valuation date. As such, it is one of the most important assumptions used in valuing the plan's liabilities and developing actuarially calculated contribution rates. The assumption is intended to reflect the long-term expected future return on the portfolio of assets that fund the benefits.

To provide some perspective on this assumption, the chart on the following page shows the assumptions used by the 120 largest US public sector systems in a regularly updated survey published by the National Association of State Retirement Administrators (NASRA). As can be seen from the chart, the trend over time has been for systems to lower their investment return assumption. Given the consensus view among investment professionals regarding lower long-term expected returns for fixed income investments, we believe that this downward trend in the survey will continue in the future as systems periodically revisit their investment return assumptions.



To develop an analytical basis for assessing the investment return assumption, we use long-term assumptions developed by Milliman’s capital market assumptions team for each of the asset classes in which the plan is invested based on the current long-term target asset allocation. Each asset class assumption is based on a consistent set of underlying assumptions, including the inflation assumption. These assumptions are not based on historical returns, but instead are based on a forward-looking capital market economic model.

Based on the target allocation and Milliman investment return assumptions for each of the asset classes, our 50th percentile average annual return in Milliman’s capital market model was 6.9%. That outcome was based on 2.50% inflation and a 0.25% deduction for system expenses. The details on the development of that model, including the model outputs for other percentiles, are found in the August presentation.

Hewitt EnnisKnupp (HEK), the investment consultant to State Board of Administration (SBA), also has a capital market outlook model that is updated regularly. The 50th percentile of the HEK model is below the 7.75% assumption used in the 2013 valuation.

In selecting the assumption, a key parameter is SBA’s stated target of 5% average long-term real return (return in excess of inflation). Assumptions of 7.75% nominal return and 2.50% inflation imply an assumed long-term real return of 5.12%, which is in excess of the real return target.

Based on the considerations listed above and in the August presentation, we believe the investment return assumption should be reduced from the current 7.75% assumption.

4. Demographic Assumptions

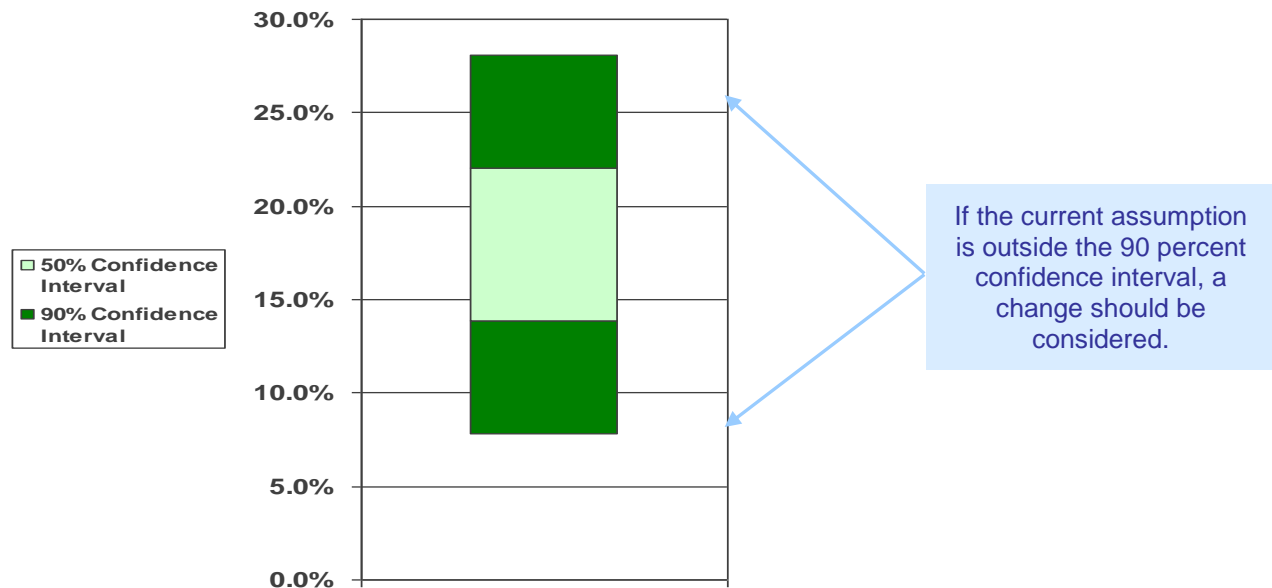
Overview

Actuarial Standard of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, provides guidance on selecting demographic assumptions used in measuring obligations under defined benefit pension plans. The general process for recommending demographic assumptions as defined in ASOP No. 35 is as follows:

- Identify the types of assumptions;
- Consider the relevant assumption universe;
- Consider the assumption format;
- Select the specific assumptions; and
- Evaluate the reasonableness of the selected assumption.

The purpose of the demographic experience study is to compare actual experience against expected experience based on the assumptions used in the most recent actuarial valuation. The observation period used in this study is July 1, 2008 through June 30, 2013, and the current assumptions are those adopted by the Conference for the July 1, 2013 actuarial valuation. If the actual experience differs significantly from the overall expected experience, or if the pattern of actual decrements by age, sex, or duration of employment does not follow the expected pattern, new assumptions are considered.

Confidence intervals have been used to measure observed experience against current assumptions to determine the reasonableness of the assumption. The floating bars represent the 50 percent and 90 percent confidence intervals around the observed experience. The 90 percent confidence interval represents the range around the observed rate that could be expected to contain the true rate during the period of study with 90 percent probability. The size of the confidence interval depends on the number of observations and the likelihood of occurrence. If an assumption is outside the 90 percent confidence interval and there is no other information to explain the observed experience, a change in assumption should be considered. A sample graph with confidence intervals is shown below:



The demographic assumptions used for the July 1, 2013 actuarial valuation and the recommended assumptions for the July 1, 2014 actuarial valuation are shown in detail in the following sections and/or in the August presentation.

A summary of the recommended changes is as follows:

- Adjust the non-disabled mortality assumption to incorporate Projection Scale BB, which was published by the Society of Actuaries subsequent to the previous FRS experience study. The use of Scale BB allows FRS to use a standard Society of Actuaries mortality table for each membership class/gender group without additional adjustment.
- Update assumptions for incidence of DROP entry, immediate retirement and deferred retirement timing to reflect observed experience for all membership classes. Observed experience for the July 2010 to June 2011 period was excluded in setting the DROP entry assumption due to extraordinary levels of election into DROP that year due to legislated changes.
- Eliminate the use of artificially depressed rates for incidence of DROP entry in the calculation of liabilities used for determining actuarially calculated contribution rates. In the 2013 actuarial valuation, lower DROP entry incidence rates were used for the determination of the actuarially calculated contribution rates than were used for financial reporting. Instead, a single set of rates based on best estimate observed experience will be used for both plan funding and GASB financial reporting calculations in 2014.
- Update assumed rates of disability to custom tables based on FRS observed experience. The disability incidence tables differ by gender and also by membership class, with a different table for Special Risk members than for all other membership classes.
- Retention of the current assumptions for pre-retirement termination of service, with the limited exception of updates for members of the Senior Management Service Class at short service levels.
- Modest adjustments to mortality tables for disabled retirees to better align tables with recent experience
- Material decrease in the individual member salary increase assumption for most members to reflect experience during the observation period.
- Lower assumed rates of in-line-of-duty disability for members reflecting observed experience.
- Material increase in the assumed hours of annual leave available to members at time of retirement, based on recently observed experience. The proposed increase is greater for the Special Risk and Senior Management Service class members than it is for members of other classes.

The recommended assumptions, in our opinion, were selected in a manner consistent with the requirements of ASOP No. 35.

Mortality

Mortality rates are used to project the length of time benefits will be paid to current and future retirees and beneficiaries. The selection of a mortality assumption affects plan liabilities because the estimated value of retiree benefits depends on how long the benefit payments are expected to continue. There are clear differences in the mortality rates among non-disabled and disabled retired members. As a result, each group is reviewed separately.

A summary of the current assumed mortality rates and recommended changes is shown below:

| Assumption | July 1, 2013 Valuation | July 1, 2014 Valuation |
|--|--|---|
| Female Non-Disabled | RP2000 Generational, 100% White Collar, Scale AA | RP2000 Generational, 100% Annuitant White Collar, Scale <u>BB</u> |
| ▪ Regular & Special Risk | Multiply above table by 95.8% | No additional adjustment needed |
| ▪ Other Classes | Multiply above table by 56.7% | No additional adjustment needed |
| Male Non-Disabled (other than Special Risk) | RP2000 Generational, 100% White Collar, Scale AA | RP2000 Generational, <u>50%</u> Annuitant White Collar/<u>50%</u> Annuitant Blue Collar, Scale <u>BB</u> |
| ▪ Regular | Multiply above table by 90.9% | No additional adjustment needed |
| ▪ Other non-SR Classes | Multiply above table by 82.4% | No additional adjustment needed |
| Male Non-Disabled Special Risk | RP2000 Generational, 100% White Collar, Scale AA | RP2000 Generational, <u>10%</u> Annuitant White Collar/<u>90%</u> Annuitant Blue Collar, Scale <u>BB</u> |
| ▪ Special Risk | Multiply above table by 90.9% | No additional adjustment needed |
| Female Disabled (other than Special Risk) | PBGC Disabled with Social Security Table | RP2000 , 100% Disabled Female set forward 2 years, <u>no projection scale</u> |
| ▪ All non-SR Classes | Multiply above table by 82.9% under age 65, multiply by 88.1% age 65 and over | No additional adjustment needed |
| Female Disabled Special Risk | PBGC Disabled with Social Security Table | <u>60%</u> RP2000 Disabled Female set forward 2 years, <u>40%</u> Annuitant White Collar with no setback, <u>no projection scale</u> |
| ▪ Special Risk | Multiply above table by 82.9% under age 65, multiply by 88.1% age 65 and over | No additional adjustment needed |
| Male Disabled (other than Special Risk) | RP 2000 Disabled Retiree table for males | RP2000, 100% Disabled Male setback 4 years, <u>no projection scale</u> |
| ▪ All non-SR Classes | Multiply above table by 92.4% under age 45, multiply by 73.9% age 51 and over, ages 46-50 are interpolated between the two factors | No additional adjustment needed |
| Male Disabled Special Risk | RP 2000 Disabled Retiree table for males | <u>60%</u> RP2000 Disabled Male setback 4 years, <u>40%</u> Annuitant White Collar with no setback, <u>no projection scale</u> |
| ▪ Special Risk | Multiply above table by 92.4% under age 45, multiply by 73.9% age 51 and over, ages 46-50 are interpolated between the two factors | No additional adjustment needed |

Non-Disabled Mortality

Mortality assumptions for non-disabled retired members are separated into three statistically significant and distinct groups based on employment category and gender (all females, Special Risk males, males in all other membership classes).

Mortality rates are expected to continue to decrease in the future, and the resulting increased longevity should be anticipated in the actuarial valuation. For FRS, this continues to be done through the use of a generational mortality table. A generational mortality table anticipates future improvements in mortality by using a different static mortality table for each year of birth, with the tables for later years of birth assuming lower mortality than the tables for earlier years of birth.

The RP2000 generational mortality table has a number of standard adjustments that can be applied to match the mortality rates of FRS. One commonly used standard adjustment is to apply a collar adjustment as defined in the RP2000 table. Essentially, a “white collar” adjustment further reduces the rates of mortality while a “blue collar” adjustment increases the rates of mortality. Please note that “white collar” and “blue collar” are used in this context only to describe the adjustments made to the RP2000 generational mortality table and are not intended to classify any members as either “blue collar” or “white collar.”

In the previous experience study even after applying the standard “white collar” adjustment, custom adjustments to the mortality tables were needed to reflect that FRS experience was better than the generational tables with standard adjustment. This phenomenon of members “outliving the table” was not one experienced solely by FRS. In response to this issue and subsequent to our previous experience study, the Society of Actuaries issued a new generational projection scale (Projection Scale BB) based on nationally observed experience. Using this newly issue projection scale has allowed us to create a proposed assumption using standard table adjustments rather than requiring custom adjustments.

To determine the reasonable fit of the proposed assumptions, we calculated the ratio of actual deaths to expected deaths (A/E ratio) during the experience study period for each of the three groups described above. With a generational mortality table, we target A/E ratios of 100 percent. Details on the A/E review are in the August presentation, but for each group studied, the ratio was between 99.5% and 100.2% for the proposed assumption.

Disabled Mortality

Disabled members are expected to have a shorter life expectancy than healthy retired members. In addition, future life expectancies for disabled members are not expected to increase as significantly as the future life expectancies for healthy retirees. As a result, we do not use generational mortality for disabled retirees. We did target A/E ratios at or near 110 percent to allow for some future improvement in disabled mortality.

We recommend a change to both male and female assumptions. We recommend a standard, national disabled mortality table for disabled members in non-Special Risk classes, with age adjustments made to better match FRS experience. Disabled members in the Special Risk class had significantly better mortality (fewer deaths) than disabled members in other classes. For this reason, we recommend blending the disabled mortality table with a healthy mortality table for Special Risk disabled retirees.

| | Exposures | Actual Deaths | July 1, 2013 Valuation | | Recommended July 1, 2014 Valuation | |
|----------------------------------|-----------|---------------|------------------------|-----------|------------------------------------|-----------|
| | | | Expected Deaths | A/E Ratio | Expected Deaths | A/E Ratio |
| Male (other than Special Risk) | 20,907 | 1,022 | 817 | 125% | 929 | 110% |
| Male (Special Risk) | 4,834 | 135 | 157 | 86% | 129 | 105% |
| Female (other than Special Risk) | 41,023 | 1,548 | 1,415 | 109% | 1,419 | 109% |
| Female (Special Risk) | 1,873 | 32 | 50 | 65% | 29 | 108% |

Non-Annuitant Mortality

The non-annuitant mortality assumption applies to active members and non-disabled inactive members (those members who have terminated employment but are vested and entitled to a future benefit). Because the healthy annuitant mortality assumptions have changed, the associated non-annuitant mortality assumptions have also changed to mirror those used for non-disabled retirees. While separate mortality tables could be used for non-annuitants, as actives do tend to have lower mortality than retirees even for the same ages, the mortality assumption while employed is not a particularly significant assumption. As such, it does not warrant a separate table in our opinion.

Retirement Assumptions

The retirement assumptions used in the actuarial valuation include the following assumptions:

- DROP Entry
- Immediate Retirement (at time of first eligibility for unreduced retirement)
- Deferred Retirement (for members that do not enter DROP or elect immediate retirement)

Unreduced Retirement Eligibility

Vested Tier I members other than Special Risk class are eligible to enter DROP or immediately retire upon reaching the earlier of age 62 or 30 years of service. The thresholds for Special Risk members are age 55 or 25 years of service.

A summary of the unreduced retirement eligibility criteria is as follows:

| Membership Class | Tier | Unreduced Retirement |
|-------------------|------|---|
| Special Risk | I | Earlier of 25 years of service or age 55 with six years of service |
| Special Risk | II | Earlier of 30 years of service or age 60 with eight years of service |
| All Other Classes | I | Earlier of 30 years of service or age 62 with six years of service. |
| All Other Classes | II | Earlier of 33 years of service or age 65 with eight years of service. |

DROP Entry and Immediate Retirement Rates

The development of the recommended assumptions for the three largest membership class/gender groups (Regular females, Regular males, Special Risk males) is detailed in the August presentation. The development of assumptions for other groups followed a parallel approach, and the assumptions for all groups are shown in the appendix of this report.

In the development of DROP Entry and Immediate Retirement assumptions, several items are noteworthy:

- While they are developed separately, these two assumptions are ultimately combined when applying valuation software to calculate actuarial liabilities. There are several reasons for this. First, GASB financial reporting standards require that DROP entry be treated as equivalent to retirement when setting retirement assumptions. Second, from a liability perspective, DROP entry and immediate retirement are similar actuarially.
- As is covered at length in the August presentation, the proposed assumptions eliminate the use of artificially depressed retirement rates in the calculation of liabilities used for determining actuarially calculated contribution rates. In the 2013 actuarial valuation, lower retirement rates were used for the determination of the actuarially calculated contribution rates than were used for financial reporting. Instead, a single set of retirement rates based on best estimate observed experience will be used for both plan funding and GASB financial reporting calculations in 2014.
- In the development of DROP Entry assumptions, experience during the period from July 2010 to June 2011 was excluded. The unprecedented levels of DROP entry during that time were not judged to be predictive of future rates of DROP entry.
- Recommended rates were developed based on observed experience for Tier I members. Tier II rates were then developed based on the observed Tier I experience, but with modifications to reflect different minimum age and service thresholds for unreduced retirement for Tier II members.

Deferred Retirement Assumptions

This is the assumption applied for active members who do not choose retirement or DROP entry upon first eligibility. Similar to DROP entry and immediate retirement, assumptions for deferred retirement were updated based on recently observed experience. The development of the recommended assumptions for the three largest membership class/gender groups (Regular females, Regular males, Special Risk males) is detailed in the August presentation. The development of assumptions for other groups followed a parallel approach, and the assumptions for all groups are shown in the appendix of this report.

Disability Incidence Assumptions

FRS provides in-line-of-duty and non-duty-related disability benefits to members. Members are eligible to receive in-line-of-duty disability benefits if they become disabled as a direct result of a job-related injury or illness, regardless of length of service. Members are eligible for non-duty-related disability benefits if they become disabled after meeting the minimum service criteria.

Duty-related disability incidence rates are developed separately for Special Risk members. Incidence rates for all other membership classes are developed collectively. Non-duty-related disability rates are developed for the system as a whole. In addition to the membership class distinctions noted above, disability incidence is also developed separately by sex.

In-Line-of-Duty Disability

The proposed assumptions use tables based on observed FRS experience. We recommend updating the disability incidences assumptions as actual experience during the observation period was materially below the assumption used in the 2013 valuation. The assumption is detailed in the appendix of this report.

Non-Duty-Related Disability

Paralleling in-line-of-duty disability, observed experience was materially below the assumption used in the 2013 valuation. As such, we propose to revise the assumption to a table based on actual FRS experience during the study's observation period. The assumption is detailed in the appendix of this report.

Termination Assumptions

Not all active members are expected to continue working for covered employers until unreduced retirement. Termination rates represent the probabilities that a member will leave covered employment at any given point during the member's working career prior to eligibility for unreduced retirement. This includes people who are eligible for a reduced immediate pension and people who are not eligible for pension benefits. For Special Risk members entitled to benefits who terminate employment before age 55 (age 60 for Tier II) having not yet reached eligibility for an unreduced immediate pension, we assume benefit commencement at age 55 (age 60 for Tier II). For those in other membership classes who terminate employment before age 62 (age 65 for Tier II) having not yet reached eligibility for an unreduced immediate pension, we assume benefit commencement at age 62 (age 65 for Tier II). Members terminating employment after the above-listed tier and class-specific ages for unreduced benefits are assumed to commence benefits immediately.

In the previous experience study, termination rates were established by age with select rates for the first 10 years of employment. In reviewing termination experience, the assumptions in place for the 2013 valuation matched observed experience to a sufficient extent that we recommend retaining the current assumptions with a single exception. That exception is a decrease to the assumption for low service members of the Senior Management Service class. Observed experience for that group was materially different than the previous assumption.

Full listings of recommended termination assumptions are included in the appendix.

Salary Increase Assumptions

The salary increase assumptions analyzed with demographic experience were:

- Individual member pay increases
- Unused annual leave adjustment at time of retirement

Individual Member Pay Increases

The pay increase assumption for an individual member has three theoretical components:

- Inflation
- Real wage growth
- Merit increase

The first two factors are system-wide or economy-wide. The third factor is member-specific and is tied to promotions, step increases and other individual pay increase drivers. To focus on the latter two components of individual member pay increases, actual inflation was subtracted from observed salary increases during the study's observation period. Our analysis assumes a one-year lag in the impact of actual inflation on a member's salary increase. For example, the actual 2011 inflation level is expected to impact the salary increase from 2011 to 2012. One-year lag inflation during the observation period was approximately 2.0%, compared to a forward-looking long-term average inflation assumption of either 2.50% or 2.75%, as will be decided by the Conference at its September 24th meeting. An adjustment is necessary to convert the observed experience, which had 2.0% actual inflation during the five-year period, into a more reasonable forward-looking assumption. The adjustment to set the proposed pay increase assumptions will increase upward from observed experience by either 0.50% (if the forward-looking inflation assumption is 2.50%) or 0.75% (if the assumption is 2.75%). This adjustment accounts for the difference between observed historical lag inflation during the observation period and anticipated future long-term inflation. The proposed assumptions shown in both the August presentation and this report were predicated on a 2.50% inflation assumption being selected by the Conference.

The August presentation details the development of the proposed assumptions for the three largest membership class/gender groups:

- Regular females
- Regular males
- Special Risk males

Updated assumptions for the other groups followed a parallel methodology. Full listings of recommended individual pay increase assumptions are included in the appendix. As noted in the August presentation, the individual member pay increase assumptions are based on an inflation assumption of 2.50%. If the Conference adopts an inflation assumption of 2.75% at its September 24th meeting, the individual member pay increase assumptions shown in this report would be increased by 0.25% prior to use in the 2014 valuation.

Unused Annual Leave Adjustment

Members are allowed to count an amount of unused annual leave in their final average salary calculations not to exceed the lesser of 500 hours or any employer-specific policy limits. The inclusion of unused annual leave increases a member's final average salary calculated at retirement.

Based on data for recent retirements during the observation period provided by the Division, we recommend updating the assumption. The assumption varies by membership class, and is detailed in the appendix.

5. Appendix

Data

Except where noted, the analysis in this study was based on data for the experience period from July 1, 2008, to June 30, 2013, as provided by the Division. The Division is solely responsible for the validity, accuracy and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

The member data was summarized according to the actual and potential member decrements for each year in the study. Actual and potential decrements were grouped according to age or service depending on the demographic assumption.

Assumption Tables

A complete listing of all the assumptions, methods and procedures that were approved by the Conference on August 11, 2014 that will be used in the 2014 actuarial valuation of FRS are summarized on the following pages. For assumptions and methods where the possible options were narrowed down by the Conference on August 11, the identified possibilities are listed below. Several assumptions and methods will be adopted by the Conference at a meeting subsequent to the publication of this report. That meeting is currently scheduled for September 24, 2014.

Methods and Procedures

Actuarial cost method: To be adopted at September 24th Conference.

UAL amortization method: Level percent of projected payroll on which UAL Rates are charged.

UAL amortization period: To be adopted at September 24th Conference.

Asset valuation method: The method recognizes actual investment performance different from long-term assumption systematically as follows:

1. Determine the total investment rate of return measured based on the beginning of year AVA and the market value of assets (MVA) at the end of the year.
2. Calculate the difference between the rate calculated in step 1 and the expected rate of return in the actuarial assumptions. Note that this difference can be positive or negative.
3. Calculate an investment rate of return equal to the assumed rate of return plus one-fifth of the difference determined in step 2.
4. The AVA at the end of the year is based on the beginning of year AVA and the rate calculated in step 3.

To insure that the AVA remains reasonably close MVA, the asset method includes a corridor whereby the AVA must remain within 80% to 120% of MVA.

Economic Assumptions

| Assumption | Recommendation |
|-------------------|---|
| Inflation | 2.50% or 2.75% (to be adopted at September 24 th conference) |
| Real wage growth | 0.75% or 0.50% (to be adopted at September 24 th conference) |
| Payroll growth | 3.25% (sum of above two items) |
| Investment Return | To be adopted at September 24 th conference |

Demographic Assumptions

Mortality

Healthy Mortality (Pre-Retirement and Post-Retirement)

- Female Non-Disabled: RP2000 Generational, 100% Annuitant White Collar, Scale BB
- Male Non-Disabled (other than Special Risk): RP2000 Generational, 50% Annuitant White Collar / 50% Annuitant Blue Collar, Scale BB
- Male Non-Disabled (Special Risk): RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB

Disabled Mortality

- Female Disabled (other than Special Risk): RP2000, 100% Disabled Female set forward two years, no projection scale
- Female Disabled (Special Risk): 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale
- Male Disabled (other than Special Risk): RP2000, 100% Disabled Male setback four years, no projection scale
- Male Disabled (Special Risk): 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale

Retirement Assumptions (Tier I)

DROP Entry

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|-------|-------------------------------------|-------|-----------|-------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 48 | 27.0% | 23.0% | 20.0% | 30.0% | 30.0% | 30.0% |
| 49 | 27.0% | 23.0% | 20.0% | 30.0% | 32.5% | 32.5% |
| 50 | 27.0% | 23.0% | 20.0% | 30.0% | 35.0% | 35.0% |
| 51 | 27.0% | 23.0% | 20.0% | 40.0% | 37.5% | 37.5% |
| 52 | 27.0% | 23.0% | 30.0% | 50.0% | 40.0% | 40.0% |
| 53 | 27.0% | 23.0% | 20.0% | 50.0% | 42.5% | 42.5% |
| 54 | 27.0% | 23.0% | 20.0% | 50.0% | 45.0% | 45.0% |
| 55 | 33.0% | 30.0% | 31.0% | 29.0% | 47.5% | 47.5% |
| 56 | 33.0% | 30.0% | 20.0% | 5.0% | 50.0% | 50.0% |
| 57 | 48.0% | 55.0% | 5.0% | 5.0% | 52.5% | 52.5% |
| 58 | 48.0% | 55.0% | 5.0% | 5.0% | 55.0% | 55.0% |
| 59 | 55.0% | 55.0% | 5.0% | 5.0% | 57.5% | 57.5% |
| 60 | 55.0% | 55.0% | 5.0% | 5.0% | 60.0% | 60.0% |
| 61 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 62 | 45.5% | 41.0% | 5.0% | 5.0% | 50.0% | 50.0% |
| 63 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 64 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 65 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 66 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 67 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 68 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 69 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 70-79 | 5.0% | 5.0% | 0.0% | 0.0% | 15.0% | 15.0% |
| 80 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Immediate Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' Subclasses | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 4.0% | 7.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 49 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 50 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 51 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 52 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 53 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 54 | 5.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 55 | 5.0% | 5.0% | 7.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 56 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 57 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 58 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 59 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 60 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 61 | 9.0% | 8.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 62 | 9.0% | 11.0% | 15.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 63 | 9.0% | 10.0% | 20.0% | 20.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 64 | 9.0% | 10.0% | 25.0% | 25.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 65 | 15.0% | 10.0% | 30.0% | 30.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 66 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 67 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 68 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 69 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 70-79 | 10.0% | 10.0% | 100.0% | 100.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier I) continued

Combined DROP/Immediate Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' Subclasses | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 24.0% | 30.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 31.0% | 27.0% | 24.0% | 37.0% | 40.0% | 40.0% | 35.0% | 35.0% |
| 49 | 31.0% | 27.0% | 24.0% | 37.0% | 42.5% | 42.5% | 37.5% | 37.5% |
| 50 | 31.0% | 27.0% | 27.0% | 37.0% | 45.0% | 45.0% | 40.0% | 40.0% |
| 51 | 31.0% | 27.0% | 27.0% | 47.0% | 47.5% | 47.5% | 42.5% | 42.5% |
| 52 | 31.0% | 27.0% | 37.0% | 57.0% | 50.0% | 50.0% | 45.0% | 45.0% |
| 53 | 31.0% | 27.0% | 27.0% | 57.0% | 52.5% | 52.5% | 47.5% | 47.5% |
| 54 | 32.0% | 27.0% | 27.0% | 57.0% | 55.0% | 55.0% | 50.0% | 50.0% |
| 55 | 38.0% | 35.0% | 38.0% | 35.0% | 57.5% | 57.5% | 52.5% | 52.5% |
| 56 | 40.0% | 35.0% | 26.0% | 11.0% | 60.0% | 60.0% | 55.0% | 55.0% |
| 57 | 55.0% | 60.0% | 11.0% | 11.0% | 62.5% | 62.5% | 57.5% | 57.5% |
| 58 | 55.0% | 60.0% | 11.0% | 11.0% | 65.0% | 65.0% | 65.0% | 65.0% |
| 59 | 62.0% | 60.0% | 11.0% | 11.0% | 67.5% | 67.5% | 67.5% | 67.5% |
| 60 | 62.0% | 60.0% | 11.0% | 11.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| 61 | 64.0% | 63.0% | 15.0% | 15.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 62 | 54.5% | 52.0% | 20.0% | 20.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| 63 | 14.0% | 15.0% | 25.0% | 25.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 64 | 14.0% | 15.0% | 30.0% | 30.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 65 | 20.0% | 15.0% | 35.0% | 35.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 66 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 67 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 68 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 69 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 70-79 | 15.0% | 15.0% | 100.0% | 100.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Deferred Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|--------|-------------------------------------|--------|-----------|--------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 48 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 49 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 50 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 51 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 52 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 53 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 54 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 55 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 56 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 57 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 58 | 3.5% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 59 | 5.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 60 | 5.0% | 5.0% | 7.0% | 7.0% | 5.0% | 5.0% |
| 61 | 5.0% | 5.0% | 9.0% | 9.0% | 5.0% | 5.0% |
| 62 | 12.0% | 11.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 63 | 8.0% | 8.0% | 20.0% | 20.0% | 11.0% | 11.0% |
| 64 | 8.0% | 8.0% | 20.0% | 20.0% | 11.0% | 11.0% |
| 65 | 15.0% | 13.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 66 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 67 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 68 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 69 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 70-79 | 15.0% | 13.0% | 100.0% | 100.0% | 15.0% | 15.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier II)

DROP Entry

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|-------|-------------------------------------|-------|-----------|-------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 48 | 27.0% | 23.0% | 20.0% | 30.0% | 30.0% | 30.0% |
| 49 | 27.0% | 23.0% | 20.0% | 30.0% | 32.5% | 32.5% |
| 50 | 27.0% | 23.0% | 20.0% | 30.0% | 35.0% | 35.0% |
| 51 | 27.0% | 23.0% | 20.0% | 40.0% | 37.5% | 37.5% |
| 52 | 27.0% | 23.0% | 30.0% | 50.0% | 40.0% | 40.0% |
| 53 | 27.0% | 23.0% | 20.0% | 50.0% | 42.5% | 42.5% |
| 54 | 27.0% | 23.0% | 20.0% | 50.0% | 45.0% | 45.0% |
| 55 | 33.0% | 30.0% | 20.0% | 50.0% | 47.5% | 47.5% |
| 56 | 33.0% | 30.0% | 20.0% | 50.0% | 50.0% | 50.0% |
| 57 | 48.0% | 55.0% | 20.0% | 50.0% | 52.5% | 52.5% |
| 58 | 48.0% | 55.0% | 20.0% | 50.0% | 55.0% | 55.0% |
| 59 | 55.0% | 55.0% | 20.0% | 50.0% | 57.5% | 57.5% |
| 60 | 55.0% | 55.0% | 31.0% | 29.0% | 60.0% | 60.0% |
| 61 | 55.0% | 55.0% | 20.0% | 5.0% | 62.5% | 62.5% |
| 62 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 63 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 64 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 65 | 45.5% | 41.0% | 5.0% | 5.0% | 50.0% | 50.0% |
| 66 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 67 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 68 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 69 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 70-79 | 5.0% | 5.0% | 0.0% | 0.0% | 15.0% | 15.0% |
| 80 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Immediate Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' Subclasses | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 4.0% | 7.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 49 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 50 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 51 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 52 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 53 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 54 | 5.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 55 | 5.0% | 5.0% | 7.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 56 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 57 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 58 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 59 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 60 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 61 | 9.0% | 8.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 62 | 9.0% | 8.0% | 15.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 63 | 9.0% | 8.0% | 20.0% | 20.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 64 | 9.0% | 8.0% | 25.0% | 25.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 65 | 15.0% | 11.0% | 30.0% | 30.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 66 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 67 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 68 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 69 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 70-79 | 10.0% | 10.0% | 100.0% | 100.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier II) continued

Combined DROP/Immediate Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' Subclasses | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 24.0% | 30.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 31.0% | 27.0% | 24.0% | 37.0% | 40.0% | 40.0% | 35.0% | 35.0% |
| 49 | 31.0% | 27.0% | 24.0% | 37.0% | 42.5% | 42.5% | 37.5% | 37.5% |
| 50 | 31.0% | 27.0% | 27.0% | 37.0% | 45.0% | 45.0% | 40.0% | 40.0% |
| 51 | 31.0% | 27.0% | 27.0% | 47.0% | 47.5% | 47.5% | 42.5% | 42.5% |
| 52 | 31.0% | 27.0% | 37.0% | 57.0% | 50.0% | 50.0% | 45.0% | 45.0% |
| 53 | 31.0% | 27.0% | 27.0% | 57.0% | 52.5% | 52.5% | 47.5% | 47.5% |
| 54 | 32.0% | 27.0% | 27.0% | 57.0% | 55.0% | 55.0% | 50.0% | 50.0% |
| 55 | 38.0% | 35.0% | 27.0% | 56.0% | 57.5% | 57.5% | 52.5% | 52.5% |
| 56 | 40.0% | 35.0% | 26.0% | 56.0% | 60.0% | 60.0% | 55.0% | 55.0% |
| 57 | 55.0% | 60.0% | 26.0% | 56.0% | 62.5% | 62.5% | 57.5% | 57.5% |
| 58 | 55.0% | 60.0% | 26.0% | 56.0% | 65.0% | 65.0% | 65.0% | 65.0% |
| 59 | 62.0% | 60.0% | 26.0% | 56.0% | 67.5% | 67.5% | 67.5% | 67.5% |
| 60 | 62.0% | 60.0% | 37.0% | 35.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| 61 | 64.0% | 63.0% | 30.0% | 15.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 62 | 64.0% | 63.0% | 20.0% | 20.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 63 | 64.0% | 63.0% | 25.0% | 25.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 64 | 64.0% | 63.0% | 30.0% | 30.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 65 | 60.5% | 52.0% | 35.0% | 35.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| 66 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 67 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 68 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 69 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 70-79 | 15.0% | 15.0% | 100.0% | 100.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Deferred Retirement

| Age | Regular | | Special Risk and Special Risk Admin | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 48 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 49 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 50 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 51 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 52 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 53 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 54 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 55 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 56 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 57 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 58 | 3.5% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 59 | 5.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 60 | 5.0% | 5.0% | 7.0% | 7.0% | 5.0% | 5.0% |
| 61 | 5.0% | 5.0% | 9.0% | 9.0% | 5.0% | 5.0% |
| 62 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 63 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 64 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 65 | 12.0% | 11.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 66 | 8.0% | 8.0% | 25.0% | 25.0% | 11.0% | 11.0% |
| 67 | 8.0% | 8.0% | 25.0% | 25.0% | 11.0% | 11.0% |
| 68 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 69 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 70-79 | 15.0% | 13.0% | 100.0% | 100.0% | 15.0% | 15.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Line-of-Duty Disability Annual Rates

| Age | SR Male | SR Female | Other Male | Other Female |
|-------|---------|-----------|------------|--------------|
| 20 | 0.010% | 0.000% | 0.000% | 0.000% |
| 21 | 0.010% | 0.000% | 0.000% | 0.000% |
| 22 | 0.010% | 0.000% | 0.000% | 0.000% |
| 23 | 0.010% | 0.000% | 0.000% | 0.000% |
| 24 | 0.010% | 0.000% | 0.000% | 0.000% |
| 25 | 0.010% | 0.004% | 0.001% | 0.001% |
| 26 | 0.010% | 0.004% | 0.001% | 0.001% |
| 27 | 0.010% | 0.004% | 0.001% | 0.001% |
| 28 | 0.010% | 0.004% | 0.001% | 0.001% |
| 29 | 0.010% | 0.004% | 0.001% | 0.001% |
| 30 | 0.010% | 0.004% | 0.001% | 0.001% |
| 31 | 0.010% | 0.004% | 0.001% | 0.001% |
| 32 | 0.010% | 0.004% | 0.001% | 0.001% |
| 33 | 0.010% | 0.004% | 0.001% | 0.001% |
| 34 | 0.010% | 0.004% | 0.001% | 0.001% |
| 35 | 0.010% | 0.004% | 0.001% | 0.001% |
| 36 | 0.010% | 0.004% | 0.001% | 0.001% |
| 37 | 0.010% | 0.040% | 0.001% | 0.001% |
| 38 | 0.020% | 0.040% | 0.001% | 0.001% |
| 39 | 0.020% | 0.040% | 0.001% | 0.001% |
| 40 | 0.020% | 0.040% | 0.001% | 0.001% |
| 41 | 0.020% | 0.060% | 0.004% | 0.001% |
| 42 | 0.020% | 0.060% | 0.004% | 0.001% |
| 43 | 0.020% | 0.060% | 0.004% | 0.001% |
| 44 | 0.040% | 0.040% | 0.004% | 0.001% |
| 45 | 0.060% | 0.040% | 0.004% | 0.001% |
| 46 | 0.080% | 0.040% | 0.004% | 0.001% |
| 47 | 0.100% | 0.040% | 0.004% | 0.001% |
| 48 | 0.120% | 0.040% | 0.004% | 0.001% |
| 49 | 0.140% | 0.040% | 0.004% | 0.001% |
| 50 | 0.140% | 0.050% | 0.006% | 0.006% |
| 51 | 0.100% | 0.060% | 0.006% | 0.006% |
| 52 | 0.100% | 0.070% | 0.006% | 0.006% |
| 53 | 0.100% | 0.080% | 0.006% | 0.006% |
| 54 | 0.100% | 0.080% | 0.006% | 0.006% |
| 55 | 0.100% | 0.080% | 0.006% | 0.006% |
| 56 | 0.100% | 0.080% | 0.006% | 0.006% |
| 57 | 0.100% | 0.080% | 0.006% | 0.006% |
| 58 | 0.100% | 0.150% | 0.006% | 0.006% |
| 59 | 0.100% | 0.150% | 0.010% | 0.015% |
| 60 | 0.140% | 0.150% | 0.010% | 0.013% |
| 61 | 0.180% | 0.150% | 0.010% | 0.010% |
| 62 | 0.220% | 0.150% | 0.010% | 0.010% |
| 63 | 0.260% | 0.150% | 0.010% | 0.010% |
| 64 | 0.300% | 0.150% | 0.010% | 0.010% |
| 65 | 0.260% | 0.150% | 0.010% | 0.010% |
| 66 | 0.240% | 0.100% | 0.010% | 0.010% |
| 67 | 0.200% | 0.100% | 0.010% | 0.010% |
| 68 | 0.100% | 0.100% | 0.010% | 0.010% |
| 69 | 0.100% | 0.100% | 0.010% | 0.010% |
| 70-79 | 0.100% | 0.100% | 0.010% | 0.010% |
| 80 | 0.100% | 0.100% | 0.001% | 0.001% |

Non-Duty Disability Annual Rates

| Age | SR Male | SR Female | Other Male | Other Female |
|-------|---------|-----------|------------|--------------|
| 20 | 0.020% | 0.000% | 0.000% | 0.000% |
| 21 | 0.020% | 0.000% | 0.010% | 0.010% |
| 22 | 0.020% | 0.000% | 0.010% | 0.010% |
| 23 | 0.020% | 0.000% | 0.010% | 0.010% |
| 24 | 0.020% | 0.000% | 0.010% | 0.010% |
| 25 | 0.020% | 0.020% | 0.010% | 0.010% |
| 26 | 0.020% | 0.020% | 0.010% | 0.010% |
| 27 | 0.020% | 0.020% | 0.010% | 0.010% |
| 28 | 0.030% | 0.020% | 0.010% | 0.010% |
| 29 | 0.030% | 0.020% | 0.010% | 0.010% |
| 30 | 0.030% | 0.020% | 0.010% | 0.010% |
| 31 | 0.030% | 0.020% | 0.010% | 0.010% |
| 32 | 0.030% | 0.020% | 0.010% | 0.010% |
| 33 | 0.030% | 0.030% | 0.010% | 0.010% |
| 34 | 0.030% | 0.030% | 0.020% | 0.010% |
| 35 | 0.030% | 0.030% | 0.020% | 0.010% |
| 36 | 0.030% | 0.030% | 0.020% | 0.020% |
| 37 | 0.030% | 0.030% | 0.020% | 0.020% |
| 38 | 0.030% | 0.030% | 0.020% | 0.020% |
| 39 | 0.030% | 0.030% | 0.020% | 0.020% |
| 40 | 0.030% | 0.030% | 0.020% | 0.020% |
| 41 | 0.030% | 0.030% | 0.040% | 0.040% |
| 42 | 0.030% | 0.060% | 0.040% | 0.040% |
| 43 | 0.030% | 0.060% | 0.040% | 0.040% |
| 44 | 0.030% | 0.060% | 0.080% | 0.040% |
| 45 | 0.030% | 0.060% | 0.080% | 0.060% |
| 46 | 0.030% | 0.060% | 0.080% | 0.060% |
| 47 | 0.080% | 0.060% | 0.080% | 0.100% |
| 48 | 0.080% | 0.110% | 0.080% | 0.100% |
| 49 | 0.080% | 0.110% | 0.120% | 0.100% |
| 50 | 0.080% | 0.110% | 0.160% | 0.100% |
| 51 | 0.080% | 0.110% | 0.200% | 0.140% |
| 52 | 0.080% | 0.110% | 0.200% | 0.140% |
| 53 | 0.050% | 0.110% | 0.200% | 0.140% |
| 54 | 0.050% | 0.110% | 0.200% | 0.140% |
| 55 | 0.050% | 0.110% | 0.250% | 0.160% |
| 56 | 0.050% | 0.110% | 0.250% | 0.180% |
| 57 | 0.050% | 0.110% | 0.250% | 0.200% |
| 58 | 0.050% | 0.110% | 0.300% | 0.220% |
| 59 | 0.050% | 0.110% | 0.300% | 0.240% |
| 60 | 0.050% | 0.110% | 0.300% | 0.260% |
| 61 | 0.050% | 0.110% | 0.200% | 0.200% |
| 62 | 0.050% | 0.110% | 0.150% | 0.140% |
| 63 | 0.050% | 0.110% | 0.100% | 0.080% |
| 64 | 0.050% | 0.110% | 0.100% | 0.080% |
| 65 | 0.050% | 0.110% | 0.100% | 0.080% |
| 66 | 0.050% | 0.110% | 0.040% | 0.080% |
| 67 | 0.050% | 0.110% | 0.040% | 0.040% |
| 68 | 0.050% | 0.110% | 0.040% | 0.040% |
| 69 | 0.050% | 0.110% | 0.040% | 0.040% |
| 70-79 | 0.050% | 0.110% | 0.040% | 0.040% |
| 80 | 0.050% | 0.110% | 0.040% | 0.040% |

Withdrawal – Other Terminations of Employment Annual Rates

| Regular – Male | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 32.8% | 27.2% | 25.8% | 25.8% | 24.4% | 24.4% | 23.4% | 27.4% | 27.4% | 27.4% |
| 1 | 25.4% | 18.5% | 15.4% | 14.3% | 12.6% | 12.5% | 12.2% | 12.2% | 12.2% | 12.2% |
| 2 | 22.7% | 17.2% | 14.0% | 12.8% | 12.0% | 11.6% | 10.7% | 10.7% | 10.7% | 10.7% |
| 3 | 18.4% | 14.6% | 13.2% | 12.6% | 10.7% | 10.3% | 9.4% | 9.3% | 9.3% | 9.3% |
| 4 | 15.8% | 12.7% | 11.8% | 10.9% | 9.0% | 8.8% | 7.9% | 7.8% | 7.8% | 7.8% |
| 5 | 11.7% | 9.7% | 8.8% | 8.5% | 7.4% | 6.8% | 6.0% | 6.8% | 6.8% | 6.8% |
| 6 | 11.1% | 8.5% | 7.8% | 7.5% | 6.7% | 6.5% | 5.5% | 5.4% | 5.4% | 5.4% |
| 7 | 11.1% | 8.4% | 7.1% | 6.8% | 6.2% | 6.0% | 5.3% | 5.2% | 5.1% | 5.1% |
| 8 | 11.0% | 7.7% | 6.4% | 6.2% | 5.8% | 5.1% | 4.6% | 4.4% | 4.3% | 4.3% |
| 9 | 10.0% | 6.3% | 5.5% | 5.3% | 5.3% | 5.1% | 4.6% | 4.3% | 4.2% | 4.2% |
| 10+ | 9.8% | 6.2% | 4.7% | 4.2% | 3.0% | 2.7% | 3.0% | 4.5% | 5.3% | 3.7% |

| Regular – Female | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 30.3% | 26.6% | 25.4% | 25.4% | 24.4% | 24.4% | 23.2% | 23.2% | 23.2% | 23.2% |
| 1 | 25.8% | 19.8% | 16.9% | 15.9% | 14.0% | 13.9% | 13.4% | 13.4% | 13.4% | 13.4% |
| 2 | 22.1% | 17.1% | 14.5% | 13.5% | 12.1% | 11.9% | 11.0% | 11.0% | 11.0% | 11.0% |
| 3 | 17.4% | 13.0% | 11.6% | 11.2% | 10.0% | 9.8% | 8.8% | 8.7% | 8.7% | 8.7% |
| 4 | 15.4% | 12.9% | 11.3% | 10.9% | 9.1% | 8.8% | 8.4% | 8.3% | 8.3% | 8.3% |
| 5 | 13.5% | 10.7% | 9.4% | 9.0% | 7.0% | 6.7% | 6.2% | 6.1% | 6.1% | 6.1% |
| 6 | 11.4% | 9.7% | 8.7% | 8.0% | 6.5% | 6.5% | 5.9% | 5.8% | 5.8% | 5.8% |
| 7 | 11.3% | 9.2% | 8.1% | 7.8% | 6.3% | 6.1% | 5.5% | 5.4% | 5.4% | 5.4% |
| 8 | 10.5% | 7.8% | 7.1% | 6.8% | 6.1% | 5.8% | 5.5% | 5.4% | 5.4% | 5.4% |
| 9 | 10.2% | 7.1% | 6.5% | 6.2% | 5.0% | 4.7% | 4.6% | 4.5% | 4.5% | 4.5% |
| 10+ | 11.6% | 5.3% | 5.4% | 4.6% | 3.3% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |

Withdrawal (continued)

| ECO – Male | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% |
| 1 | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% |
| 2 | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% |
| 3 | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| 4 | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% |
| 5 | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% |
| 6 | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% |
| 7 | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% |
| 8 | 13.8% | 13.8% | 13.8% | 13.8% | 13.8% | 13.8% | 13.6% | 13.4% | 13.3% | 11.5% |
| 9 | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.6% | 4.4% | 4.3% | 2.5% |
| 10+ | 5.7% | 5.7% | 5.7% | 5.7% | 5.7% | 5.7% | 5.6% | 5.3% | 5.2% | 3.5% |

| ECO – Female | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% |
| 2 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 3 | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% |
| 4 | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% |
| 5 | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% |
| 6 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 7 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 8 | 12.0% | 12.0% | 12.0% | 12.0% | 12.0% | 12.0% | 11.9% | 11.7% | 11.6% | 10.2% |
| 9 | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.1% | 2.8% | 2.7% | 1.0% |
| 10+ | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.1% | 3.9% | 3.8% | 2.4% |

Withdrawal (continued)

| ESO – Male | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% |
| 1 | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| 2 | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% |
| 3 | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% |
| 4 | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% |
| 5 | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| 6 | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% |
| 7 | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% |
| 8 | 20.2% | 20.2% | 20.2% | 20.2% | 20.2% | 20.8% | 20.0% | 18.7% | 18.4% | 16.7% |
| 9 | 6.6% | 6.6% | 6.6% | 6.6% | 6.6% | 7.2% | 6.4% | 5.2% | 4.9% | 3.1% |
| 10+ | 6.7% | 6.7% | 6.7% | 6.7% | 6.7% | 7.1% | 6.6% | 5.7% | 5.5% | 4.2% |

| ESO – Female | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 1 | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% |
| 2 | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% |
| 3 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 4 | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% |
| 5 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 6 | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |
| 7 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 8 | 17.8% | 17.8% | 17.8% | 17.8% | 17.8% | 18.4% | 17.6% | 16.3% | 16.0% | 14.3% |
| 9 | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 4.1% | 3.3% | 2.1% | 1.8% | 0.0% |
| 10+ | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% | 11.4% | 10.6% | 9.4% | 9.1% | 7.3% |



Withdrawal (continued)

| Judges – Male | | | | | | | | | | | |
|---------------------------|--------------|------|------|------|------|------|------|------|------|------|------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 1 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 2 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 3 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 4 | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| 5 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 6 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 7 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 8 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 9 | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.2% | 1.1% | 0.8% | 0.7% | 0.5% | |
| 10+ | 2.0% | 2.0% | 2.0% | 1.9% | 1.9% | 1.9% | 1.7% | 1.3% | 1.1% | 0.7% | |

| Judges – Female | | | | | | | | | | | |
|---------------------------|--------------|------|------|------|------|------|------|------|------|------|------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 1 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 2 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 3 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 4 | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% |
| 5 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 6 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 7 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 8 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 9 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.4% | 1.1% | 1.0% | 0.8% | |
| 10+ | 2.9% | 2.9% | 2.9% | 2.7% | 2.7% | 2.7% | 2.4% | 2.0% | 1.8% | 1.4% | |

Withdrawal (continued)

| Senior Management – Male | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 8.5% | 8.5% | 8.5% | 8.5% | 8.4% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% |
| 1 | 21.0% | 17.5% | 15.5% | 14.6% | 14.2% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% |
| 2 | 21.0% | 17.5% | 15.5% | 14.6% | 14.2% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% |
| 3 | 19.5% | 18.5% | 17.7% | 17.1% | 16.7% | 16.4% | 16.2% | 16.0% | 16.0% | 16.0% | 16.0% |
| 4 | 15.5% | 14.9% | 14.5% | 13.6% | 12.9% | 12.6% | 12.4% | 12.3% | 12.2% | 12.2% | 12.2% |
| 5 | 10.9% | 10.5% | 10.0% | 9.7% | 9.3% | 8.6% | 8.2% | 8.1% | 8.0% | 8.0% | 8.0% |
| 6 | 10.6% | 10.3% | 9.8% | 9.3% | 9.0% | 8.7% | 8.4% | 8.3% | 8.1% | 8.1% | 8.1% |
| 7 | 10.5% | 10.2% | 9.7% | 9.2% | 8.8% | 8.5% | 8.3% | 8.1% | 8.0% | 8.0% | 8.0% |
| 8 | 9.6% | 9.5% | 9.1% | 8.8% | 8.5% | 8.3% | 8.1% | 8.0% | 7.9% | 7.8% | 7.8% |
| 9 | 6.6% | 6.6% | 6.3% | 6.1% | 5.9% | 5.7% | 5.6% | 5.4% | 5.3% | 5.3% | 5.3% |
| 10+ | 4.8% | 4.8% | 4.1% | 3.6% | 3.2% | 2.9% | 3.0% | 3.1% | 3.5% | 2.6% | 2.6% |

| Senior Management – Female | | | | | | | | | | | |
|----------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 8.5% | 8.5% | 8.5% | 8.5% | 8.4% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% |
| 1 | 15.5% | 13.0% | 11.8% | 11.1% | 10.9% | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% |
| 2 | 18.3% | 16.0% | 14.7% | 13.8% | 13.4% | 13.2% | 13.2% | 13.2% | 13.2% | 13.2% | 13.2% |
| 3 | 17.1% | 16.2% | 15.5% | 15.0% | 14.6% | 14.3% | 14.1% | 14.0% | 14.0% | 14.0% | 14.0% |
| 4 | 12.1% | 11.3% | 10.5% | 9.9% | 9.4% | 9.0% | 8.7% | 8.6% | 8.5% | 8.5% | 8.5% |
| 5 | 12.1% | 11.3% | 10.5% | 9.9% | 9.4% | 9.0% | 8.7% | 8.6% | 8.5% | 8.5% | 8.5% |
| 6 | 10.9% | 10.6% | 10.1% | 9.7% | 9.4% | 9.1% | 8.8% | 8.7% | 8.5% | 8.5% | 8.5% |
| 7 | 10.3% | 10.1% | 9.6% | 9.2% | 8.8% | 8.6% | 8.4% | 8.2% | 8.1% | 8.1% | 8.1% |
| 8 | 7.7% | 7.6% | 7.1% | 6.8% | 6.5% | 6.2% | 6.0% | 5.9% | 5.8% | 5.7% | 5.7% |
| 9 | 7.4% | 7.4% | 6.9% | 6.5% | 6.1% | 5.8% | 5.5% | 5.3% | 5.1% | 5.1% | 5.1% |
| 10+ | 4.8% | 4.8% | 3.9% | 3.2% | 2.7% | 2.4% | 2.1% | 1.9% | 1.9% | 1.9% | 1.9% |

Withdrawal (continued)

| Special Risk – Male | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 21.4% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% |
| 1 | 10.3% | 9.8% | 9.5% | 8.8% | 8.0% | 7.3% | 6.5% | 5.8% | 5.3% | 5.3% | 5.3% |
| 2 | 8.6% | 8.1% | 7.7% | 7.4% | 6.8% | 6.0% | 5.3% | 4.7% | 4.7% | 4.7% | 4.7% |
| 3 | 8.4% | 7.9% | 7.5% | 7.2% | 6.7% | 6.0% | 5.3% | 4.7% | 4.7% | 4.7% | 4.7% |
| 4 | 7.5% | 7.0% | 6.7% | 6.5% | 6.0% | 5.5% | 5.0% | 4.6% | 4.6% | 4.6% | 4.6% |
| 5 | 5.3% | 5.3% | 5.3% | 5.3% | 4.8% | 4.3% | 3.8% | 3.3% | 3.3% | 3.3% | 3.3% |
| 6 | 5.2% | 5.2% | 5.2% | 5.1% | 4.6% | 4.1% | 3.6% | 3.2% | 3.2% | 3.2% | 3.2% |
| 7 | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| 8 | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% |
| 9 | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% |
| 10+ | 2.3% | 2.3% | 2.1% | 2.0% | 1.9% | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% |

| Special Risk – Female | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% |
| 1 | 15.5% | 14.2% | 13.2% | 12.2% | 11.2% | 10.2% | 9.2% | 8.4% | 8.4% | 8.4% | 8.4% |
| 2 | 12.3% | 11.6% | 10.6% | 9.6% | 8.6% | 7.6% | 6.6% | 5.8% | 5.8% | 5.8% | 5.8% |
| 3 | 10.3% | 9.8% | 9.3% | 8.8% | 8.3% | 7.6% | 6.6% | 5.6% | 5.6% | 5.6% | 5.6% |
| 4 | 9.7% | 9.2% | 8.7% | 8.4% | 7.6% | 7.0% | 6.4% | 5.4% | 5.4% | 5.4% | 5.4% |
| 5 | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 5.3% | 5.3% | 5.3% | 5.3% |
| 6 | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.1% | 5.1% | 5.1% | 5.1% |
| 7 | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 8 | 4.2% | 4.2% | 4.2% | 4.2% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% |
| 9 | 4.2% | 4.2% | 4.2% | 4.1% | 4.1% | 4.1% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| 10+ | 1.9% | 1.9% | 1.7% | 1.5% | 2.5% | 2.5% | 1.6% | 4.0% | 4.0% | 4.0% | 4.0% |

Withdrawal (continued)

| Special Risk Administrative – Male | | | | | | | | | | | |
|------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 14.6% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% |
| 1 | 11.3% | 10.8% | 10.3% | 9.9% | 9.7% | 9.5% | 9.4% | 9.4% | 9.4% | 9.4% | 9.4% |
| 2 | 10.4% | 9.7% | 9.3% | 8.9% | 8.7% | 8.5% | 8.4% | 8.4% | 8.4% | 8.4% | 8.4% |
| 3 | 9.7% | 9.1% | 8.7% | 8.3% | 7.9% | 7.8% | 7.7% | 7.6% | 7.6% | 7.6% | 7.6% |
| 4 | 8.8% | 8.3% | 8.0% | 7.8% | 7.6% | 7.4% | 7.4% | 7.4% | 7.4% | 7.4% | 7.4% |
| 5 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 6 | 4.4% | 4.4% | 4.4% | 4.2% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% |
| 7 | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% |
| 8 | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% |
| 9 | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% |
| 10+ | 3.9% | 3.9% | 3.6% | 3.4% | 3.2% | 3.3% | 3.6% | 7.5% | 7.5% | 7.5% | 7.5% |

| Special Risk Administrative – Female | | | | | | | | | | | |
|--------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% |
| 1 | 19.4% | 18.0% | 17.1% | 16.5% | 16.1% | 15.9% | 15.7% | 15.7% | 15.7% | 15.7% | 15.7% |
| 2 | 17.5% | 16.9% | 16.5% | 16.2% | 15.9% | 15.8% | 15.7% | 15.7% | 15.7% | 15.7% | 15.7% |
| 3 | 20.3% | 19.8% | 19.3% | 19.0% | 18.7% | 18.6% | 18.4% | 18.4% | 18.4% | 18.4% | 18.4% |
| 4 | 20.8% | 20.2% | 19.8% | 19.4% | 19.0% | 18.8% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% |
| 5 | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% |
| 6 | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% |
| 7 | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% |
| 8 | 17.8% | 17.8% | 17.7% | 17.7% | 17.7% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% |
| 9 | 17.8% | 17.8% | 17.8% | 17.8% | 17.7% | 17.7% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% |
| 10+ | 18.4% | 18.4% | 18.1% | 17.8% | 17.6% | 17.7% | 18.0% | 21.0% | 21.0% | 21.0% | 21.0% |

Individual Member Salary Increase Assumptions

- (Based on 2.50% inflation assumption; if a 2.75% inflation assumption is adopted by the Conference on September 24th the rates used in the 2014 valuation will be 0.25% higher than those shown below)

| Combined Years of Service | Regular | | Special Risk | | Special Risk Admin | | ECO | | ESO | | Judges | | Senior Management | |
|---------------------------|---------|-------|--------------|-------|--------------------|-------|--------|-------|--------|-------|--------|-------|-------------------|-------|
| | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male |
| 0 | 7.70% | 7.50% | 7.50% | 7.70% | 4.50% | 6.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | | |
| 1 | 5.40% | 5.60% | 5.80% | 6.40% | 4.50% | 6.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 6.50% | 7.00% |
| 2 | 4.90% | 5.20% | 5.50% | 6.00% | 4.50% | 6.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 6.10% | 6.30% |
| 3 | 4.90% | 5.00% | 5.50% | 5.90% | 4.50% | 6.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 6.10% | 6.00% |
| 4 | 4.80% | 4.90% | 5.50% | 5.90% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 5.20% | 5.30% |
| 5 | 4.70% | 4.80% | 5.50% | 5.90% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 5.20% | 4.90% |
| 6 | 4.70% | 4.70% | 5.50% | 5.80% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 5.20% | 4.90% |
| 7 | 4.60% | 4.70% | 5.40% | 5.60% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 8 | 4.50% | 4.60% | 5.40% | 5.60% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 9 | 4.50% | 4.60% | 5.40% | 5.60% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 10 | 4.50% | 4.40% | 5.40% | 5.50% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 11 | 4.40% | 4.40% | 5.20% | 5.50% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 12 | 4.30% | 4.40% | 5.20% | 5.30% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 13 | 4.30% | 4.40% | 5.10% | 5.30% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.60% |
| 14 | 4.30% | 4.40% | 5.10% | 5.20% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.20% |
| 15 | 4.30% | 4.30% | 5.10% | 5.20% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.20% |
| 16 | 4.30% | 4.30% | 4.90% | 5.20% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.70% | 4.20% |
| 17 | 4.30% | 4.30% | 4.90% | 5.20% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 18 | 4.20% | 4.20% | 4.90% | 5.20% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 19 | 4.20% | 4.20% | 4.90% | 5.10% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 20 | 4.20% | 4.20% | 4.90% | 5.10% | 4.50% | 5.90% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 21 | 4.10% | 4.20% | 4.90% | 5.00% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 22 | 4.10% | 4.20% | 4.90% | 4.90% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 23 | 4.00% | 4.10% | 4.90% | 4.90% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 24 | 4.00% | 4.00% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 4.20% |
| 25 | 3.90% | 3.90% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 3.90% |
| 26 | 3.80% | 3.90% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 3.90% |
| 27 | 3.70% | 3.90% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 3.90% |
| 28 | 3.60% | 3.80% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 4.20% | 3.90% |
| 29 | 3.90% | 4.30% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 5.10% | 4.60% |
| 30+ | 3.90% | 4.30% | 5.00% | 5.30% | 4.50% | 5.20% | 4.00% | 4.00% | 5.10% | 4.60% | 4.00% | 4.00% | 5.10% | 4.60% |

Unused Annual Leave Available at Retirement

| Membership Class | Hours |
|-------------------------|-------|
| Regular | 230 |
| Special Risk | 290 |
| Senior Management | 290 |
| Others Not Listed Above | 230 |

Preliminary Results of 2014 Actuarial Experience Study FLORIDA RETIREMENT SYSTEM

August 11, 2014

Presented by:
Robert Dezube, FSA
Matt Larrabee, FSA



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Agenda

- Introduction
- Demographic Assumptions
 - Timing of Retirement/DROP Entry
- Economic Assumptions
 - Investment Return
 - Individual Member Pay Increase
- Actuarial Methods
 - Amortization Period
 - Actuarial Cost Allocation Method
- Wrap-Up

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Introduction

Overview of an Actuarial Experience Study

- The FRS Experience Study, conducted every five years:
 - Gives policy makers information to periodically review and update valuation assumptions
 - Reviews current methods, identifying possible alternatives for consideration by policy makers



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2014 Actuarial Valuation Cycle

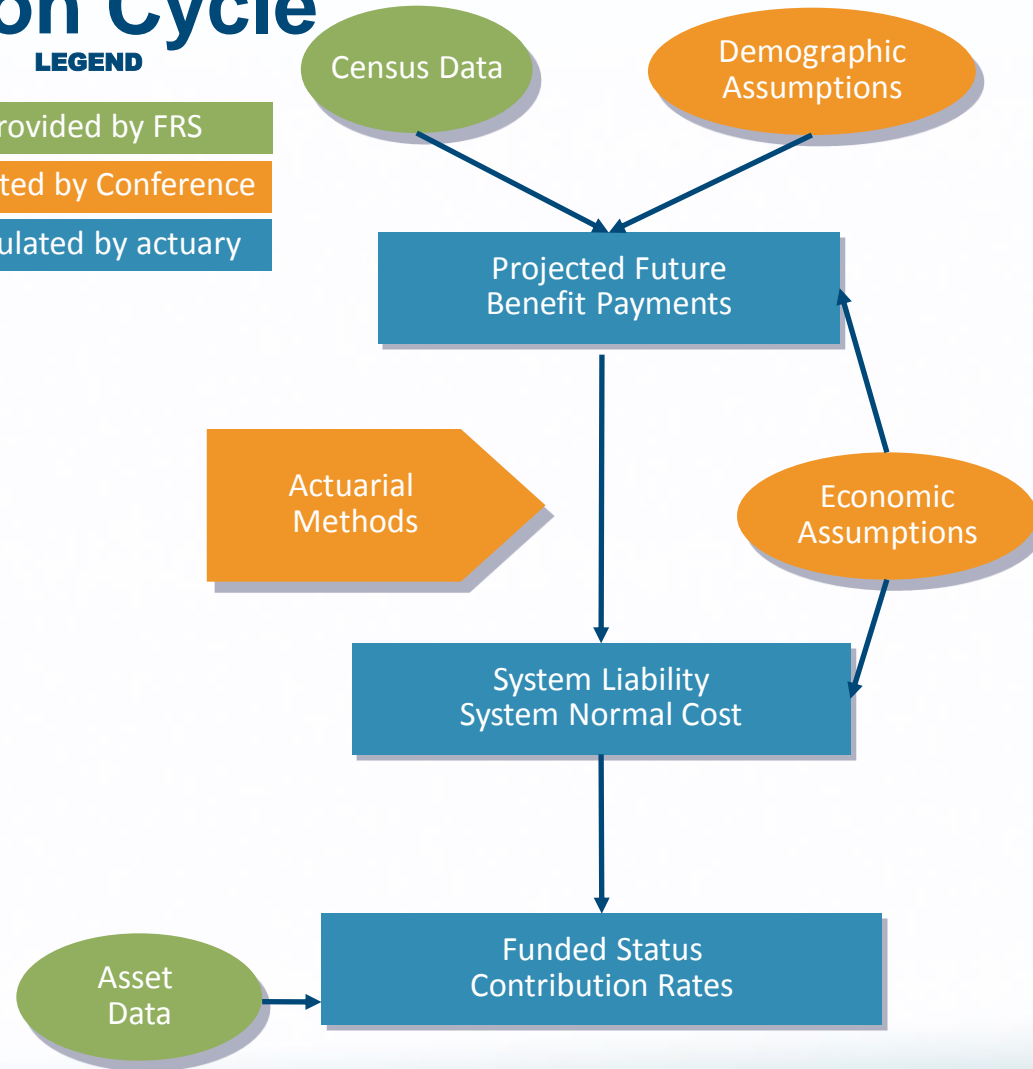
- Today: Guidance from FRS Assumption Conference Principals
- September 8: Completion of detailed experience study report including any changes adopted by Conference
- Next Assumptions Conference: Discussion of key valuation results and quantification of any policy alternatives with Conference
- December 1: Completion of valuation report, including actuarially calculated contribution rates

LEGEND

Provided by FRS

Adopted by Conference

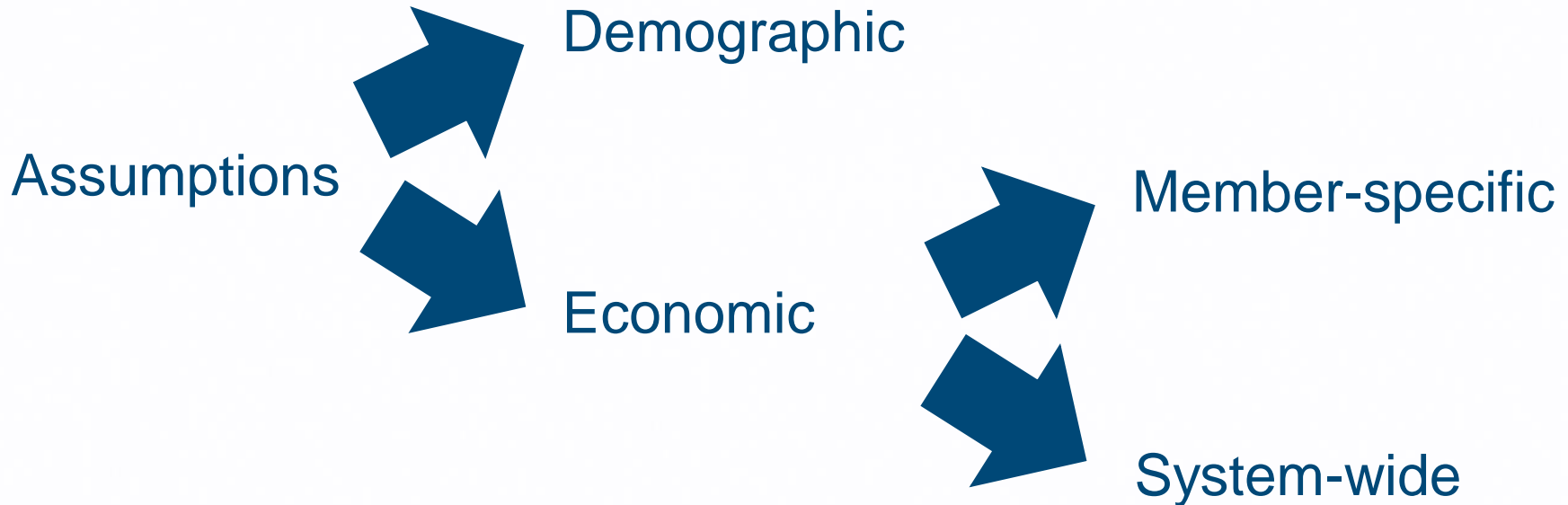
Calculated by actuary



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Categories of Valuation Assumptions

- There are different categories of assumptions, with assumptions affecting both the FRS and HIS valuations



Who are the Assumption Experts?

- System actuaries need assumptions for all areas that impact the projection of retirement benefits
- Areas where our expertise is foremost are:
 - Demographic assumptions
 - Member-specific economic assumptions

In both of these areas proposed assumptions are developed by analyzing historical member census data using actuarial and statistical techniques, while also being contemplative of ways in which future experience may vary from recently observed experience for reasons such as:

- Legislative changes
- Short-term economic conditions

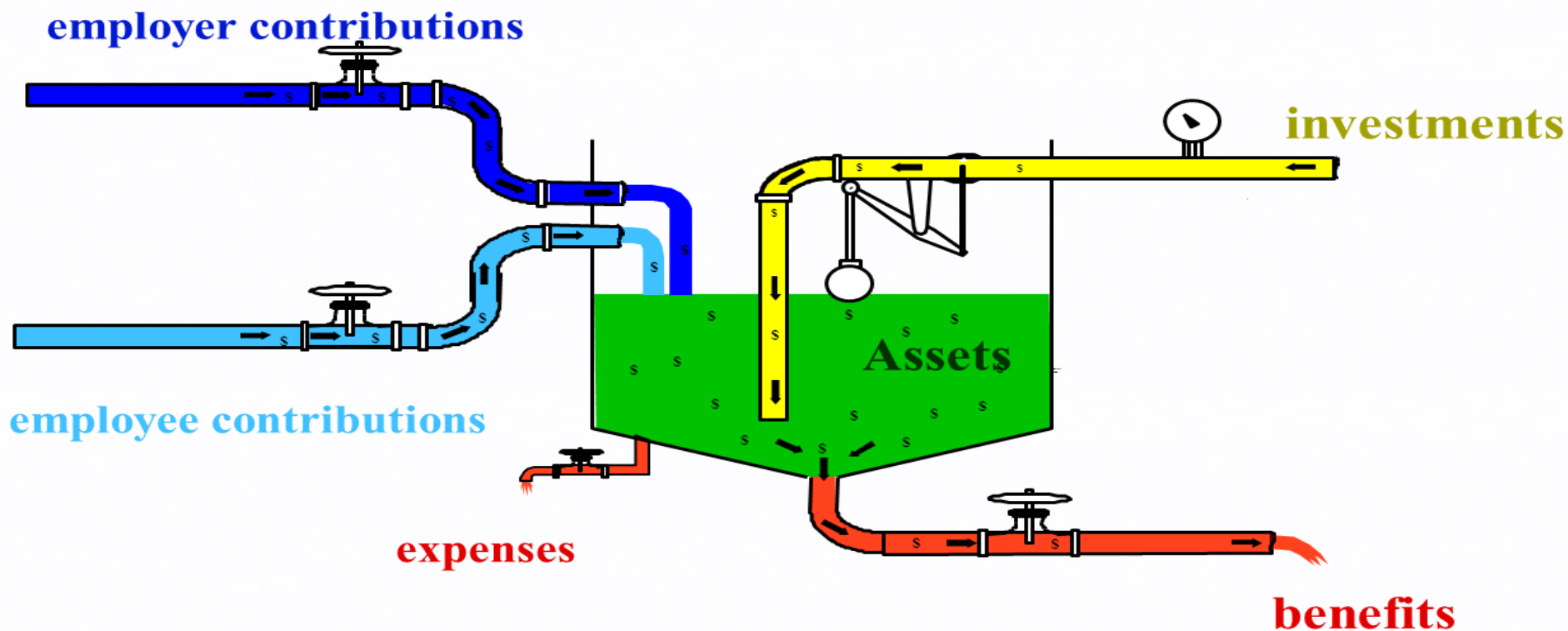
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Who are the Assumption Experts?

- In which assumption areas do actuaries have expertise, but are not alone in that regard?
 - System-wide economic
- Key system-wide economic assumptions are average annual:
 - Inflation
 - Payroll growth
 - Investment return

The guidance of SBA and HEK, the outside investment consultant for System assets, is used in selecting the investment return assumption

Guidance in Setting Assumptions

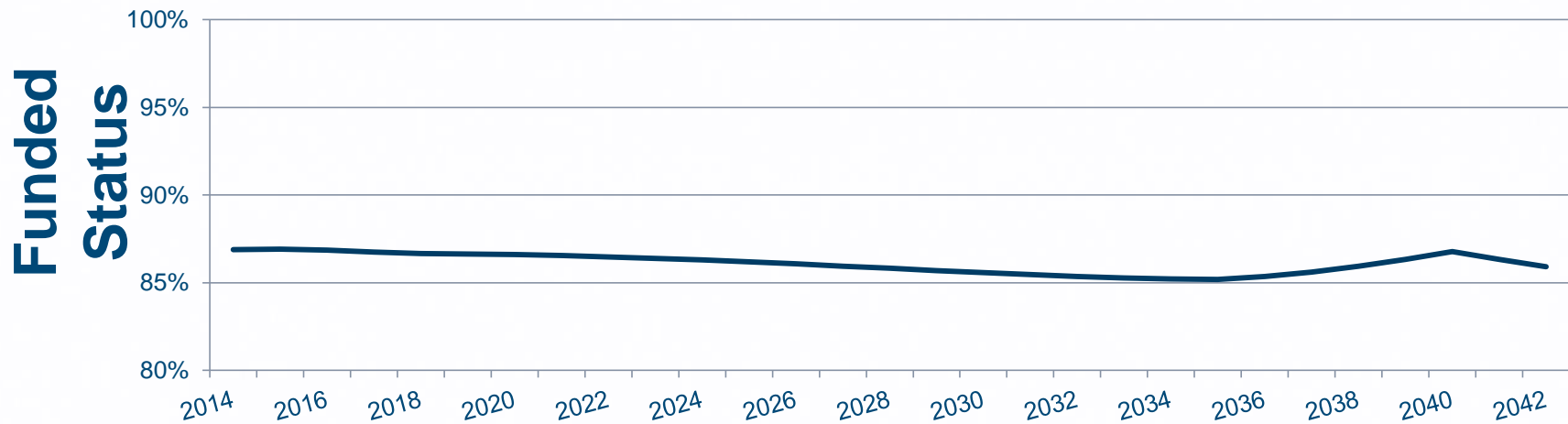


- Assumptions don't determine ultimate long-term System cost
- Ultimately: Contributions + Investments = Benefits + Expenses
- Assumptions only impact the (budget) timing of cost incurrence

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Why Do Assumptions (& Methods) Matter?

- Assumptions & methods don't determine ultimate long-term System cost, but assumptions & methods selected do determine funded status improvement if experience follows assumptions



Excerpt above from a March 2014 Milliman analysis with projected funded status if (a) actual future investments earnings are 7.75% annually, (b) all other assumptions identified in that analysis are met and (c) current methods are used

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Guidance in Setting Assumptions

- Given that assumptions impact budgeting but do not impact ultimate long-term System cost, what guiding principles should be used in selecting assumptions?
 - Identification of best estimates
 - Striving for internal consistency of assumptions
 - Focus on the long time horizon of the calculations
 - Remaining cognizant that hoping for a result:
 - Does not make it so
 - Does not affect the ultimate long-term System cost

“Math is not an opinion” - Italian saying

Guidance Needed from Today's Meeting

- To prepare for the Fall 2014 Actuarial Estimating Conference we request:
 - Approval of the demographic assumptions used for financial reporting calculations under GASB
 - For economic assumptions and actuarial methods either:
 - Identification of approved assumptions
 - or
 - Identification of assumption or method alternatives to be studied for comparison at the Fall Conference

Time permitting, any Fall Conference comparative work would reflect updated 2014 investment and member census information

Demographic Assumptions

Use of Assumptions

- Demographic and salary increase assumptions for individual members are combined with census data provided by the Division of Retirement to develop projected benefit payments
- Economic assumptions are used to state those long-term projected benefit payments as a single net present value



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Overview of Demographic Assumptions

- While a variety of demographic assumptions are needed and have been studied, we will focus discussion on the most impactful ones
 - Likelihood of immediate retirement or DROP entry at first eligibility
 - Retiree mortality

These assumptions estimate the answers to two key questions:

When will benefits commence for a member?

For how long will those benefits be paid?

Overview of Demographic Assumptions

- We will illustrate our analysis for the three largest sub-groups of member class and gender (shown in decreasing magnitude of liability)
 - Regular class females
 - Regular class males
 - Special Risk class males

These three sub-groups constitute over 90% of System liability

Demographic Assumptions - Retiree Mortality

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Current Retiree Mortality Assumption

- Current assumption was last updated based on 2003 to 2008 FRS Experience Study recommendations adopted by the Assumptions Conference
- Started with a standard set of mortality tables (RP2000)
- Picked the white collar variation of that table
- Continued to use the “generational” version of that table, which reflects that mortality is likely to continue improving over time
 - Someone who reaches age 62 in 2034 will have a longer life expectancy than someone turning 62 this year

Current Retiree Mortality Assumption

- Tables further modified to match observed FRS experience
 - Regular & Special Risk males: multiplied by 90.9%
 - Regular & Special Risk females: multiplied by 95.8%
 - In the prior Experience Study, the difference in observed retiree mortality between Regular class males and Special Risk males was not statistically significant
 - In this study, a statistically significant difference existed
 - Other member classes: multiplied by lower percentages
- These modifications decreased assumed mortality to match FRS-specific experience
 - The multipliers served to increase calculated life expectancy

Selecting the Proposed Assumption

- The assumption is tested by comparing:
 - Actual retiree deaths during 2008 - 2013 period, to
 - Those expected by the modified standard table
- An actual-to-expected (A/E) ratio near 100% indicates a good assumption
 - If A/E is near 100%, the actual experience during the observation period matches the proposed assumption
- The review is done for three retiree groupings
 - Females (all membership classes)
 - Males (other than Special Risk)
 - Special Risk Males

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Selecting the Proposed Assumption

- Since the prior experience study, a Society of Actuaries review indicated mortality has been improving in a different manner than that forecast by the projection scale (Scale AA) used in the current assumption
 - In response, a new projection scale (Scale BB) was developed
 - Projection Scale BB allowed us to match observed experience to standard tables

Current and Proposed Assumption

| Retiree Class | Current Assumption | Proposed Assumption |
|-------------------------------------|---|--|
| Female Regular & Special Risk | Projection Scale AA 100% White Collar Multiply table by 95.8% | Projection Scale BB 100% White Collar Full table |
| Male Regular | Projection Scale AA 100% White Collar Multiply table by 90.9% | Projection Scale BB 50% White, 50% Blue Full table |
| Male Special Risk | Projection Scale AA 100% White Collar Multiply table by 90.9% | Projection Scale BB 10% White, 90% Blue Full table |

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Proposed Assumption

| Retiree Class | Actual Deaths | Expected Deaths | Actual / Expected Ratio |
|-------------------------------|---------------|-----------------|-------------------------|
| Female Regular & Special Risk | 20,191 | 20,159 | 100.2% |
| Male Regular | 14,596 | 14,674 | 99.5% |
| Male Special Risk | 1,894 | 1,892 | 100.1% |

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Life Expectancy – Retiree Turning 62 in 2014

| Retiree Class | Current Assumption | Proposed Assumption | Change |
|-------------------------------|--------------------|---------------------|--------|
| Female Regular & Special Risk | 86.4 | 87.6 | 1.3 |
| Male Regular | 85.1 | 84.6 | (0.5) |
| Male Special Risk | 85.1 | 84.0 | (1.1) |

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Life Expectancy – Retiree Turning 62 in 2034

| Retiree Class | Current Assumption | Proposed Assumption | Change |
|-------------------------------|--------------------|---------------------|--------|
| Female Regular & Special Risk | 87.2 | 89.5 | 2.3 |
| Male Regular | 86.6 | 86.9 | 0.3 |
| Male Special Risk | 86.6 | 86.3 | (0.3) |

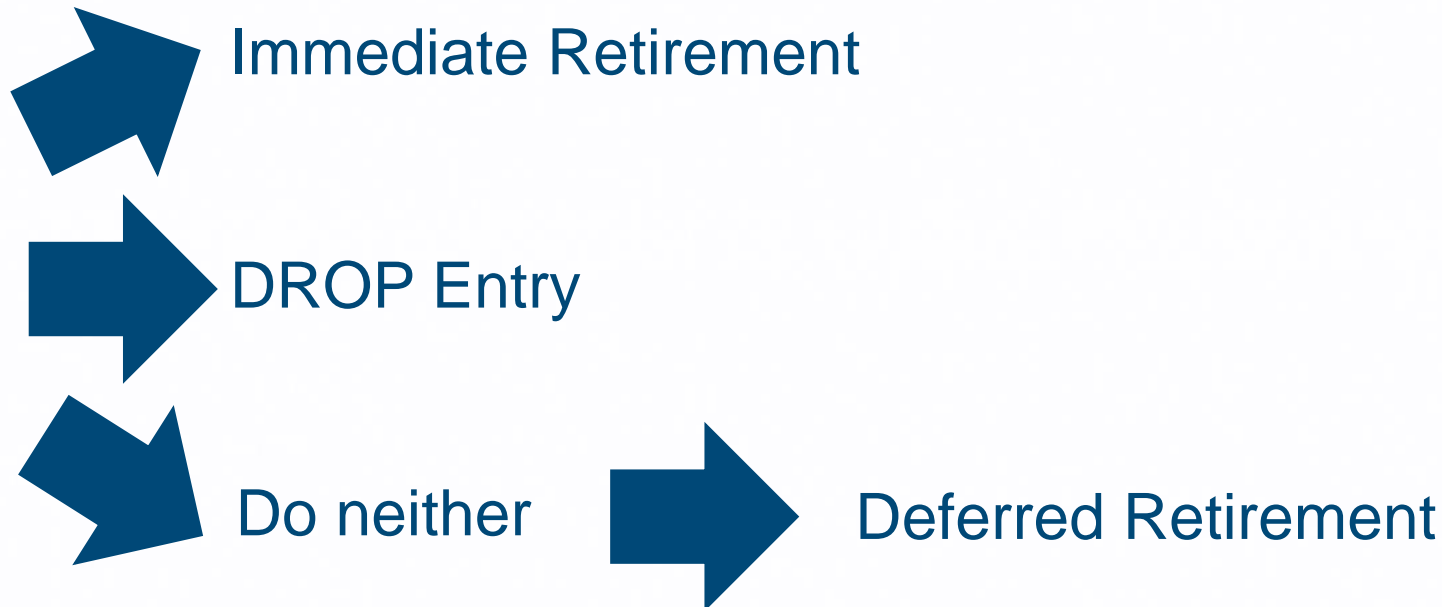
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Demographic Assumptions - Timing of Retirement / DROP Entry

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Member Decisions at Initial Eligibility

- When a member first reaches eligibility for unreduced retirement benefits, there are three possible paths



Our study reviewed observed experience for each path

Comparison Basis for Observed Experience

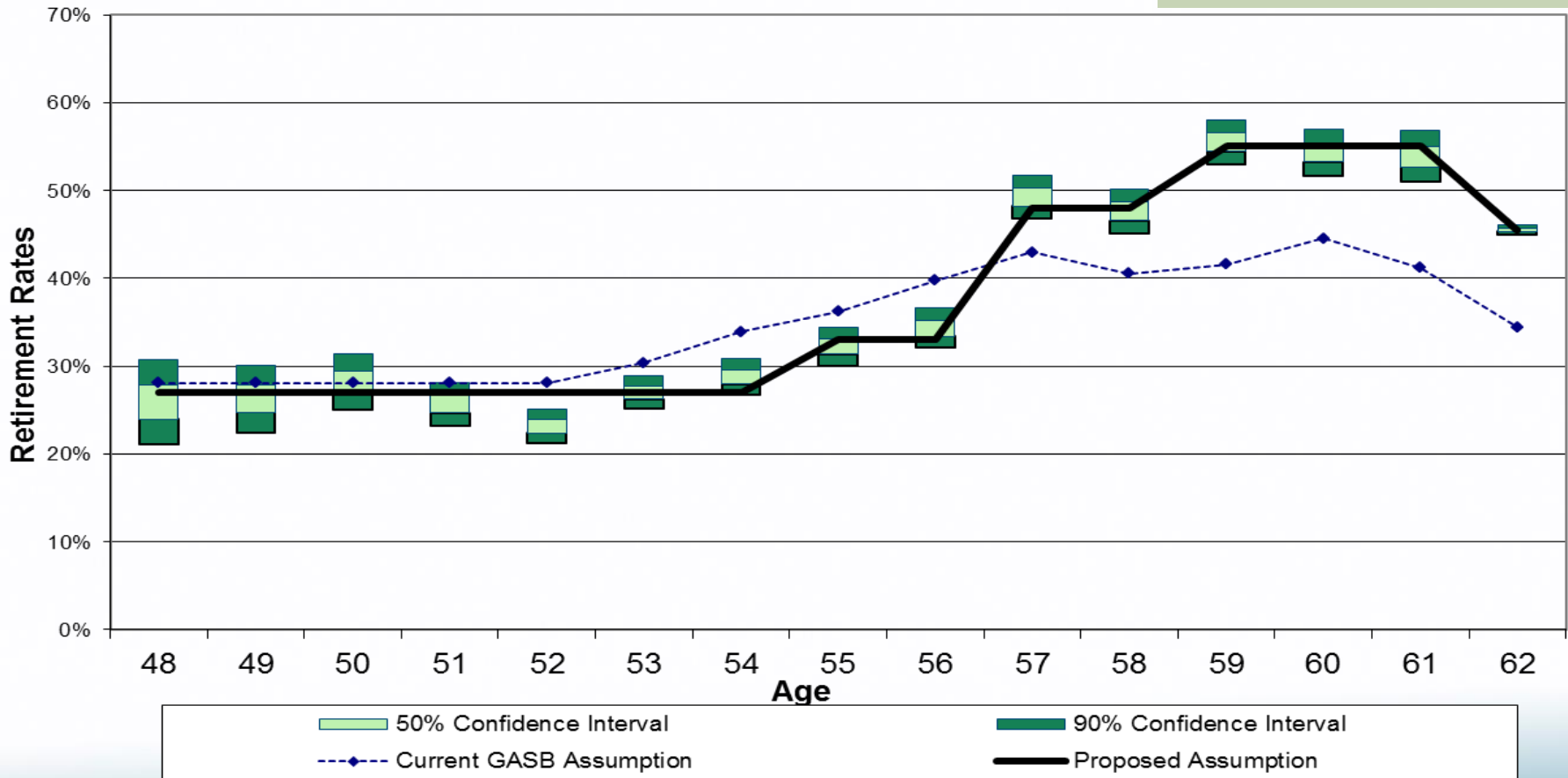
- We compare the observed experience to the assumptions we use currently for financial reporting calculations
- GASB, which sets accounting standards, mandates that entry into DROP is treated as equivalent to immediate retirement in setting assumptions for financial reporting
 - The GASB assumptions from the prior experience study can be seen as the “best estimate” assumptions
- The current retirement assumptions used for determining actuarially calculated contribution rates are more complicated due to legislative directives regarding the DROP
 - Those assumptions are covered later in the presentation

Observation Period Data Used

- In establishing confidence intervals for DROP entry, experience for plan year 2010-2011 was excluded
 - Experience for the two plan years prior to that year was similar to the experience for the two plan years subsequent to that year
- In establishing confidence intervals for immediate and deferred retirement, experience for all five years was used
 - Plan year 2010-2011 experience was similar to that for the other four plan years studied

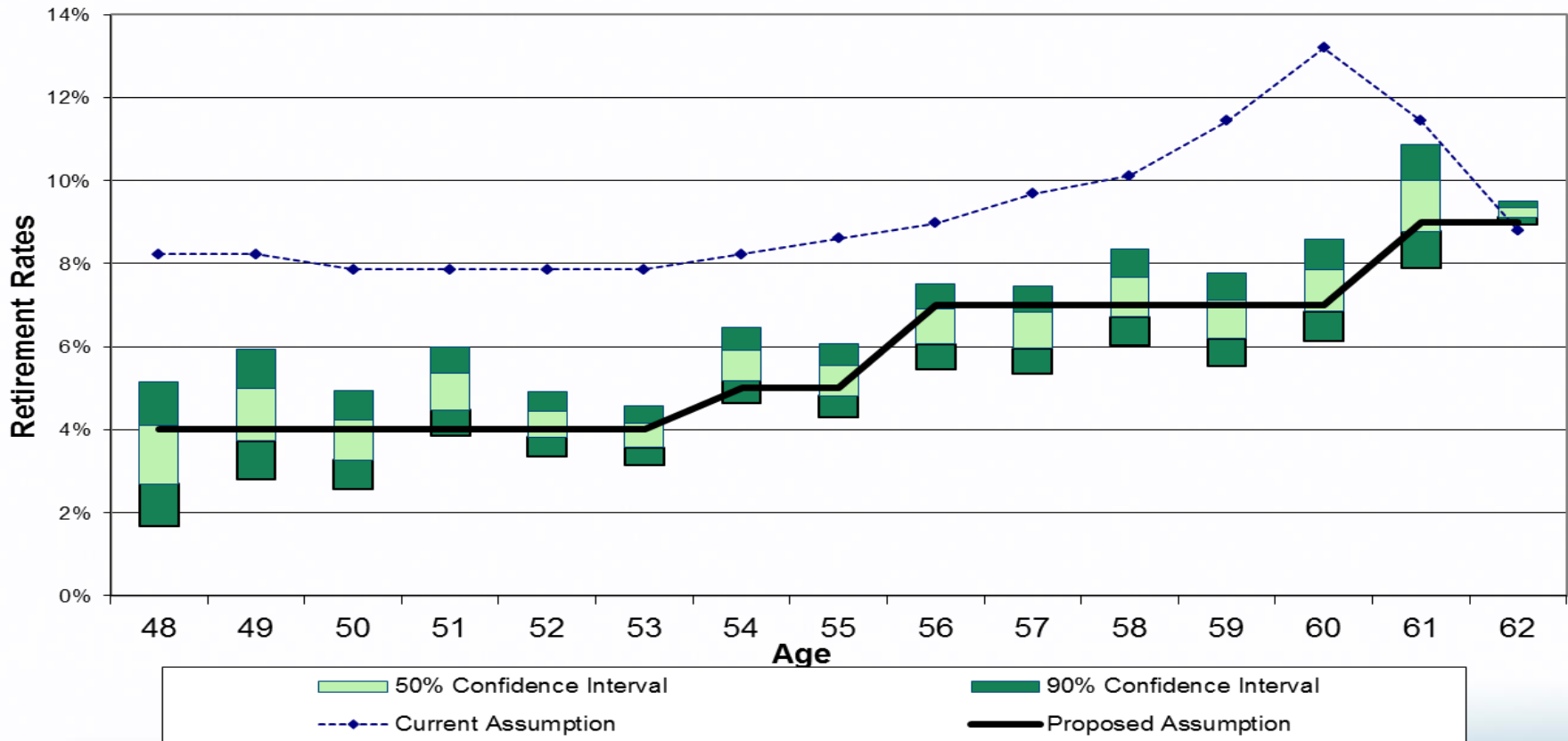
DROP Entry (Tier I) Regular Class Females

Retirement assumptions start at age 48



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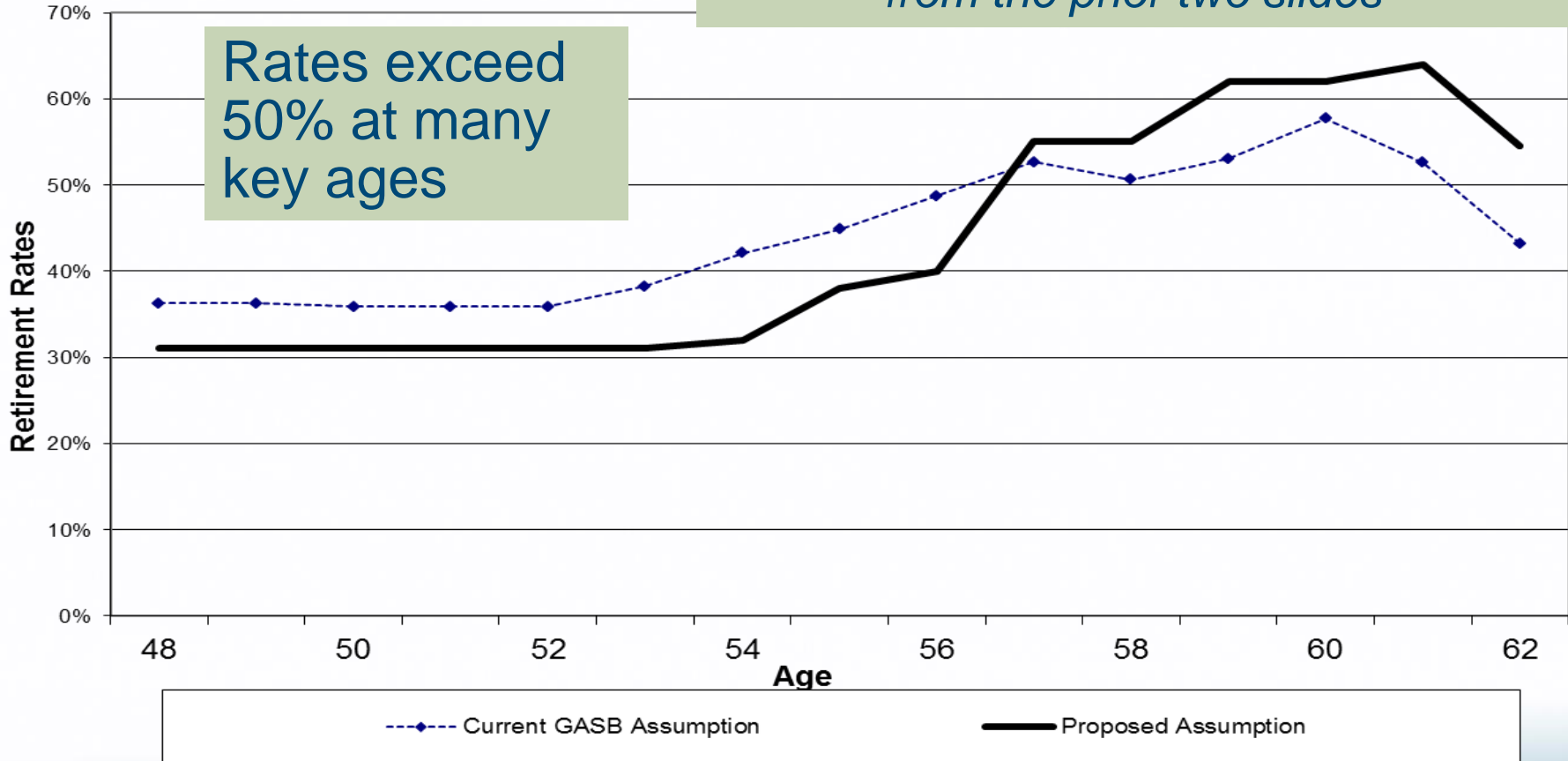
Immediate Retirement (Tier I) Regular Class Females



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Combined DROP/Immediate Retirement (Tier I) Regular Class Females

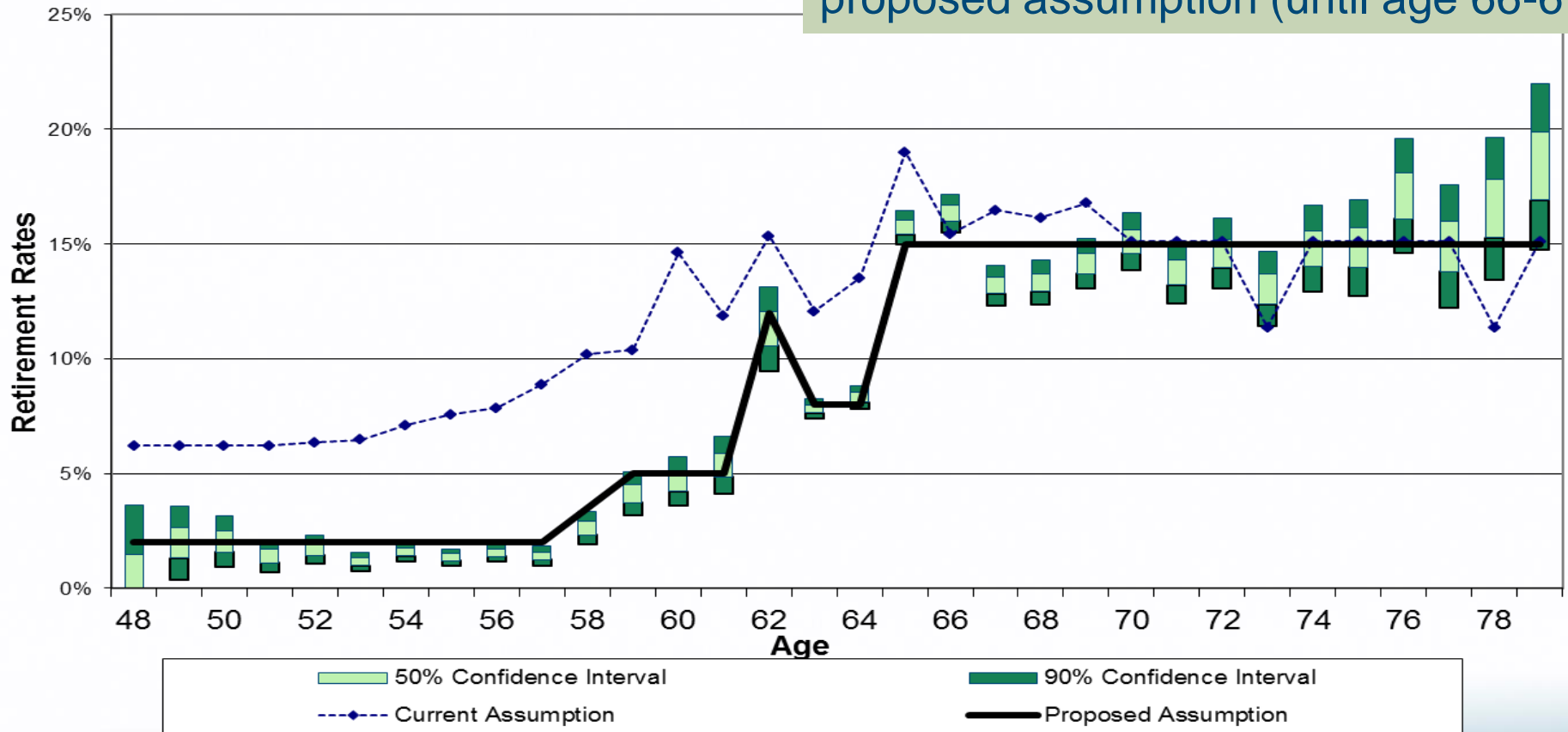
This chart combines the assumptions from the prior two slides



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Deferred Retirement (Tier I) Regular Class Females

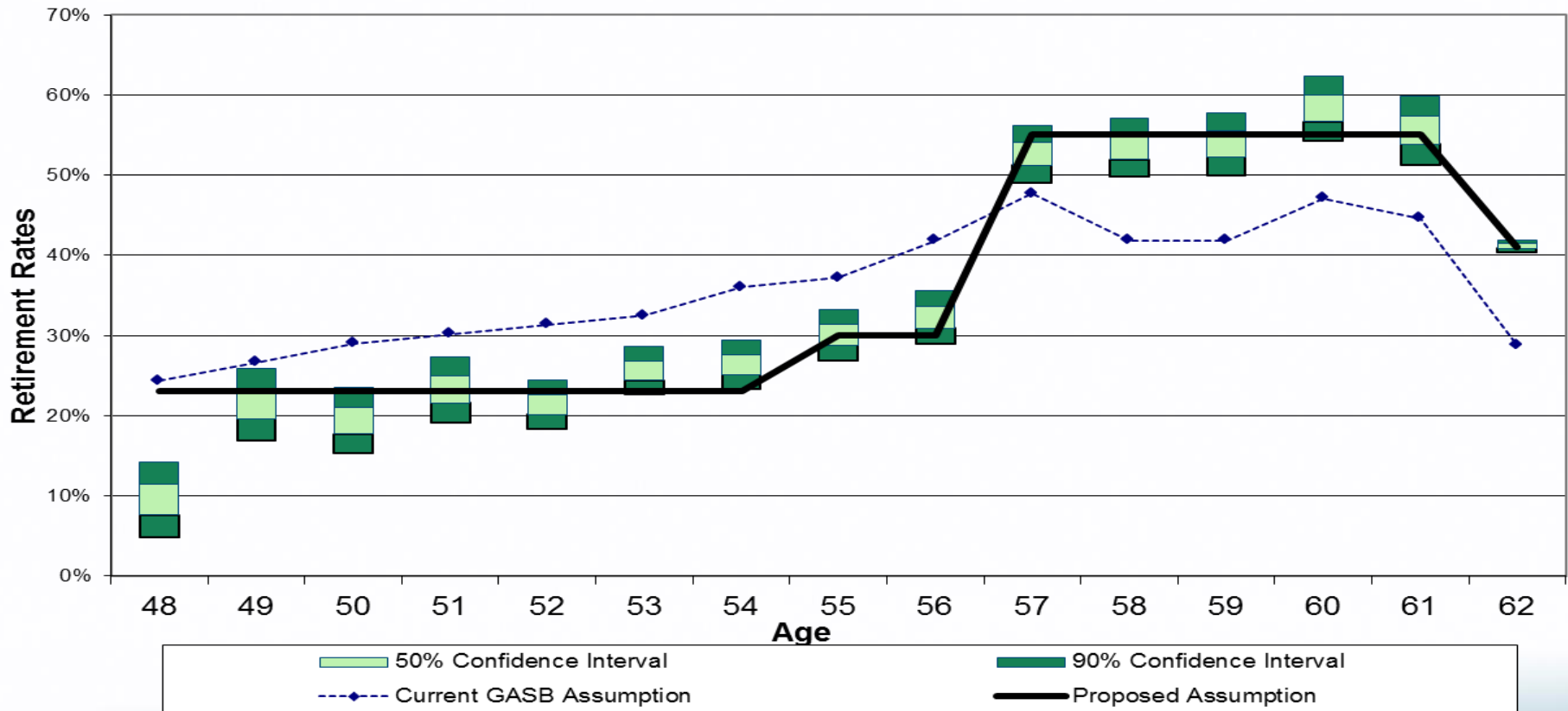
Age 55 member defers retirement nearly four more years under proposed assumption (until age 66-67)



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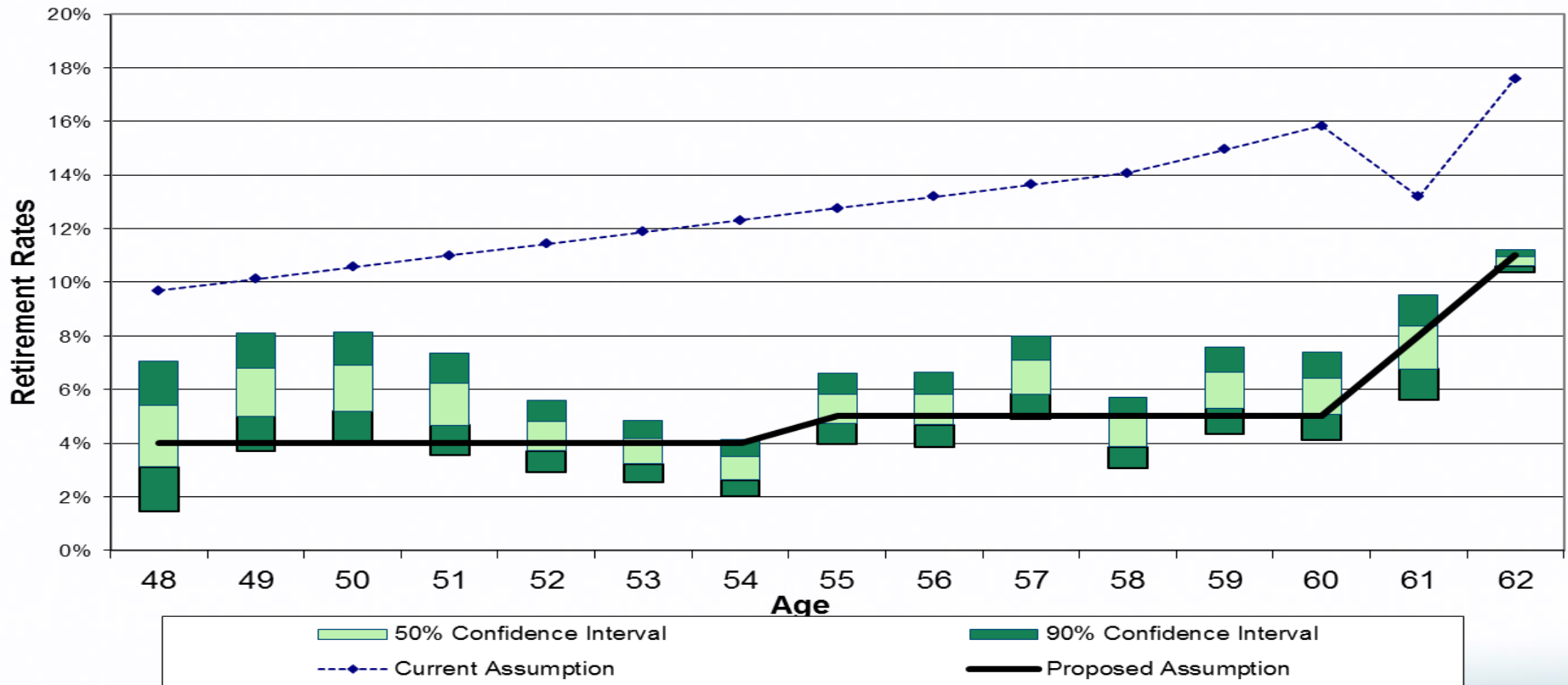
DROP Entry (Tier I) Regular Class Males

Retirement assumptions start at age 48



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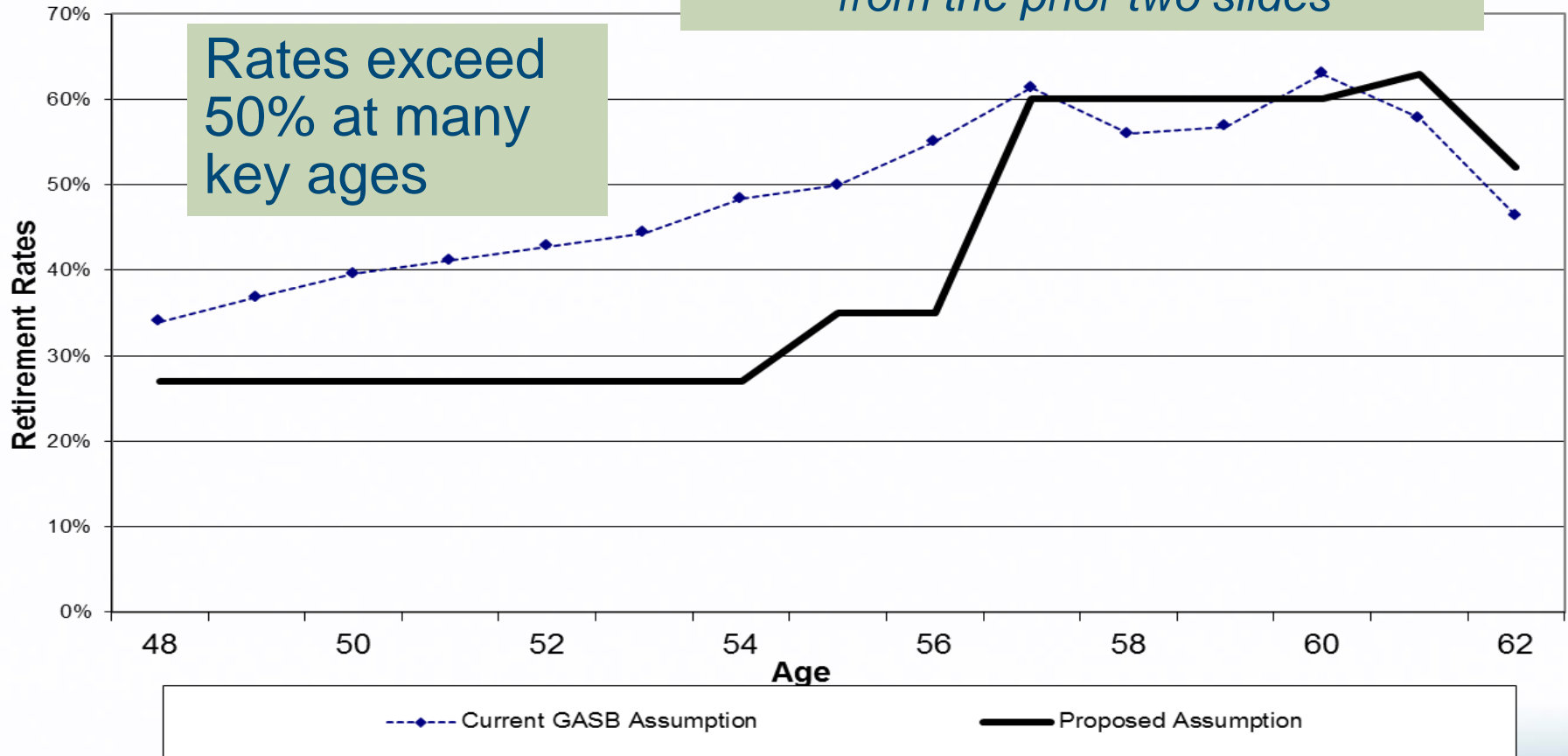
Immediate Retirement (Tier I) Regular Class Males



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Combined DROP/Immediate Retirement (Tier I) Regular Class Males

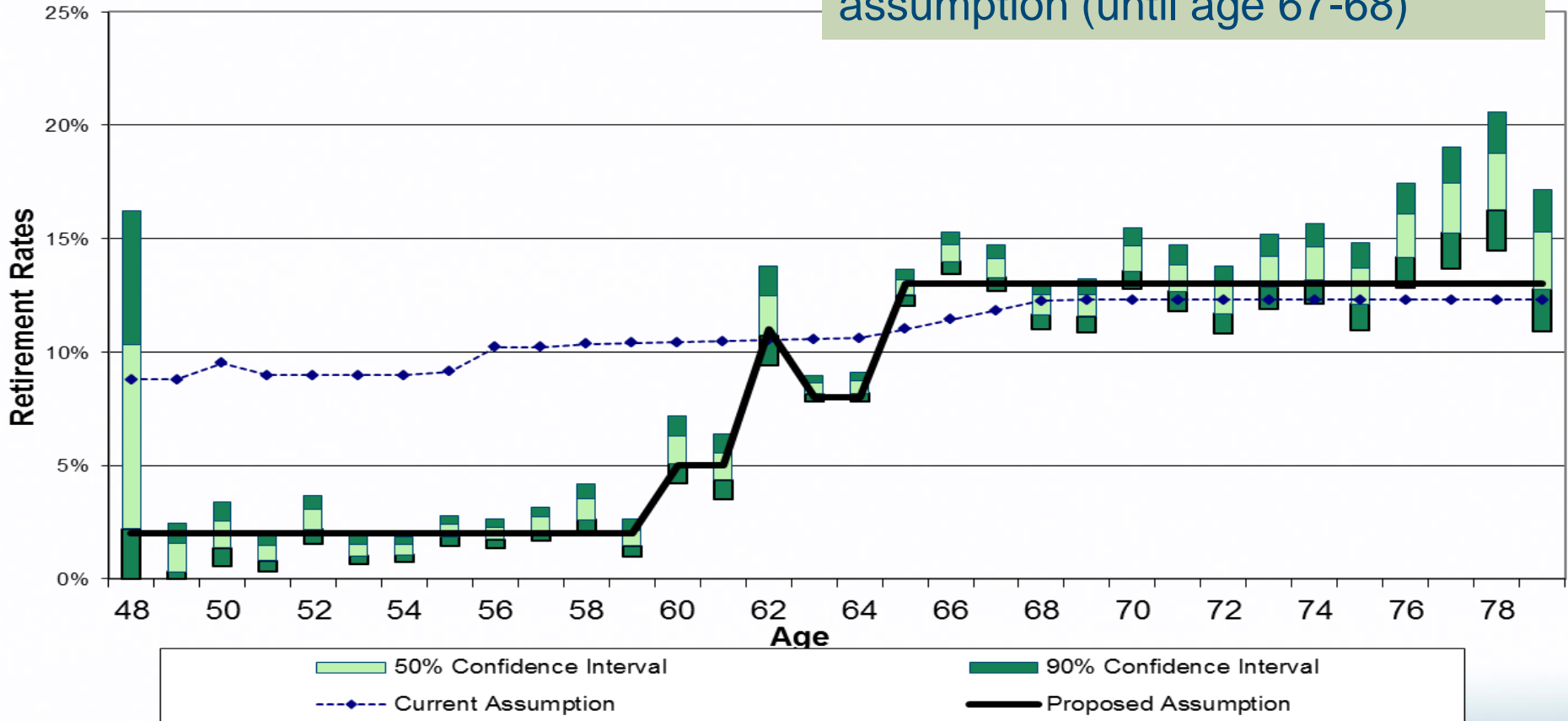
This chart combines the assumptions from the prior two slides



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Deferred Retirement (Tier I) Regular Class Males

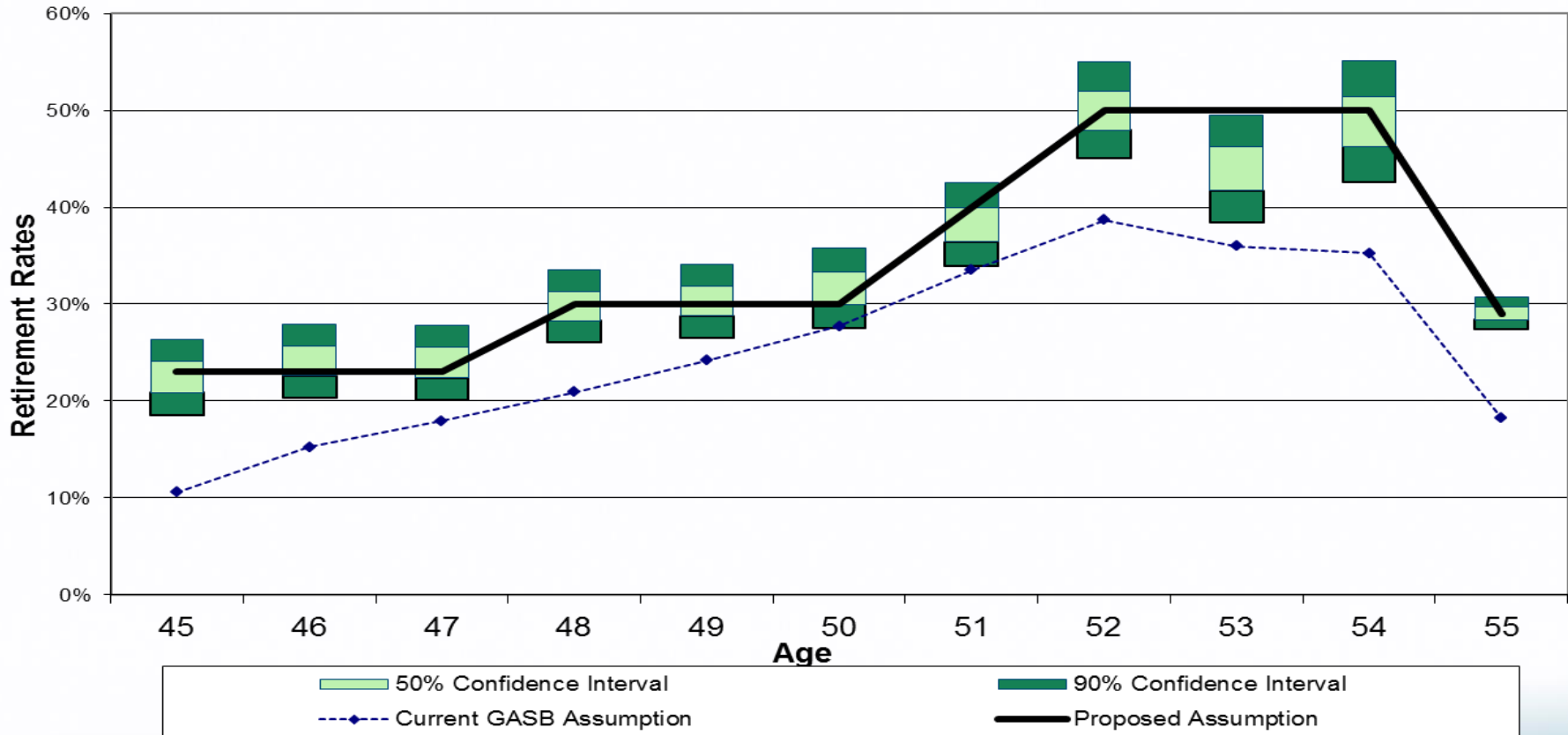
Age 55 member defers retirement four more years under proposed assumption (until age 67-68)



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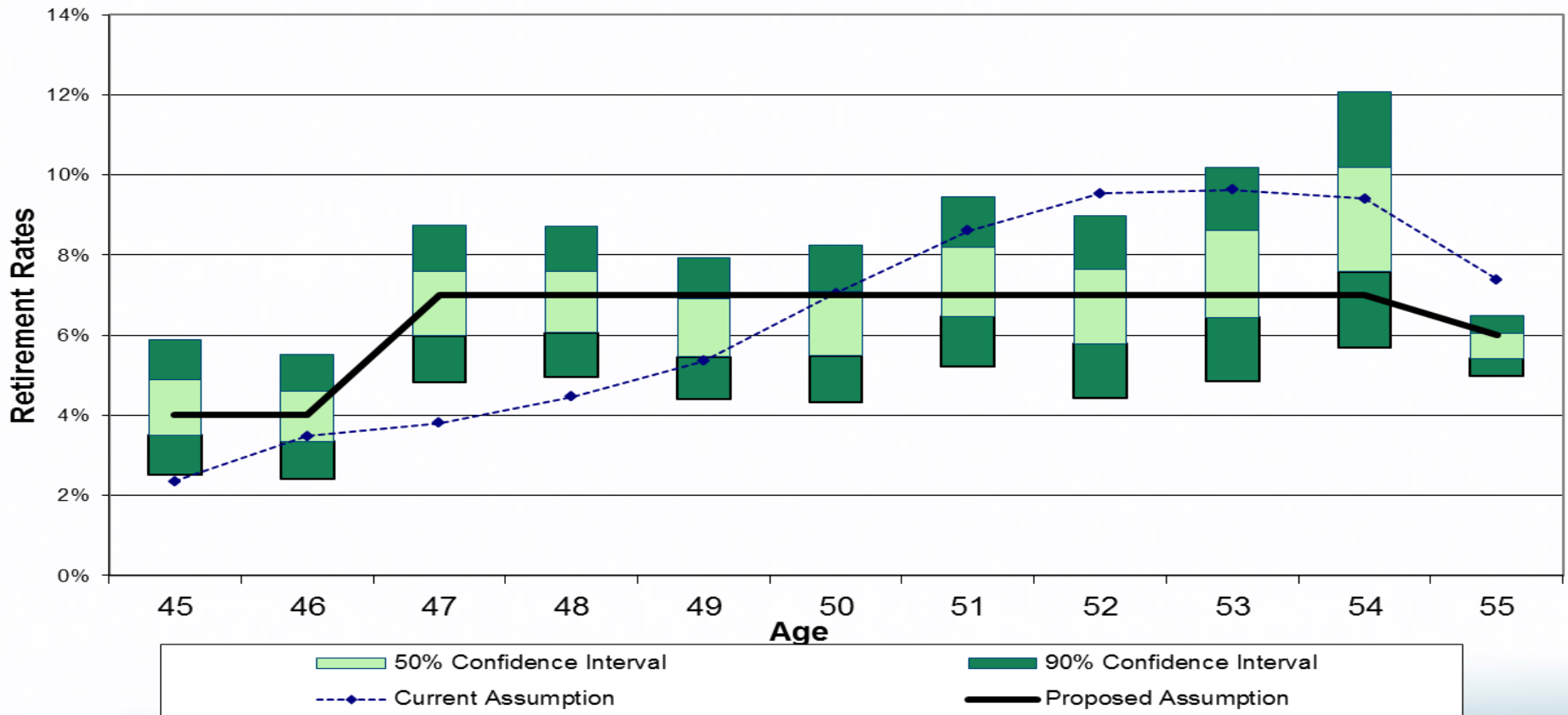
DROP Entry (Tier I) Special Risk Class Males

Retirement assumptions start at age 45



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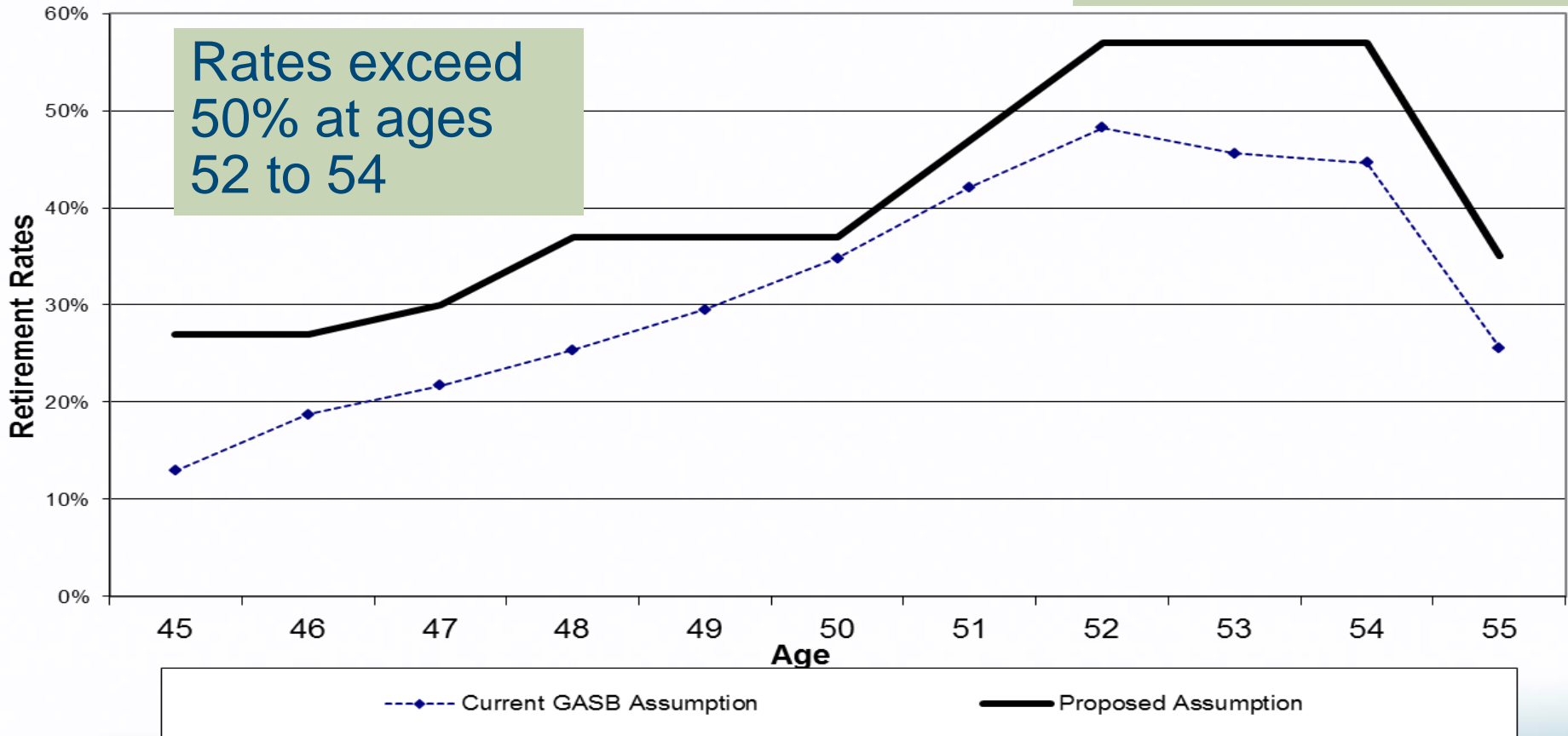
Immediate Retirement (Tier I) Special Risk Class Males



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Combined DROP/Immediate Retirement (Tier I) Special Risk Class Males

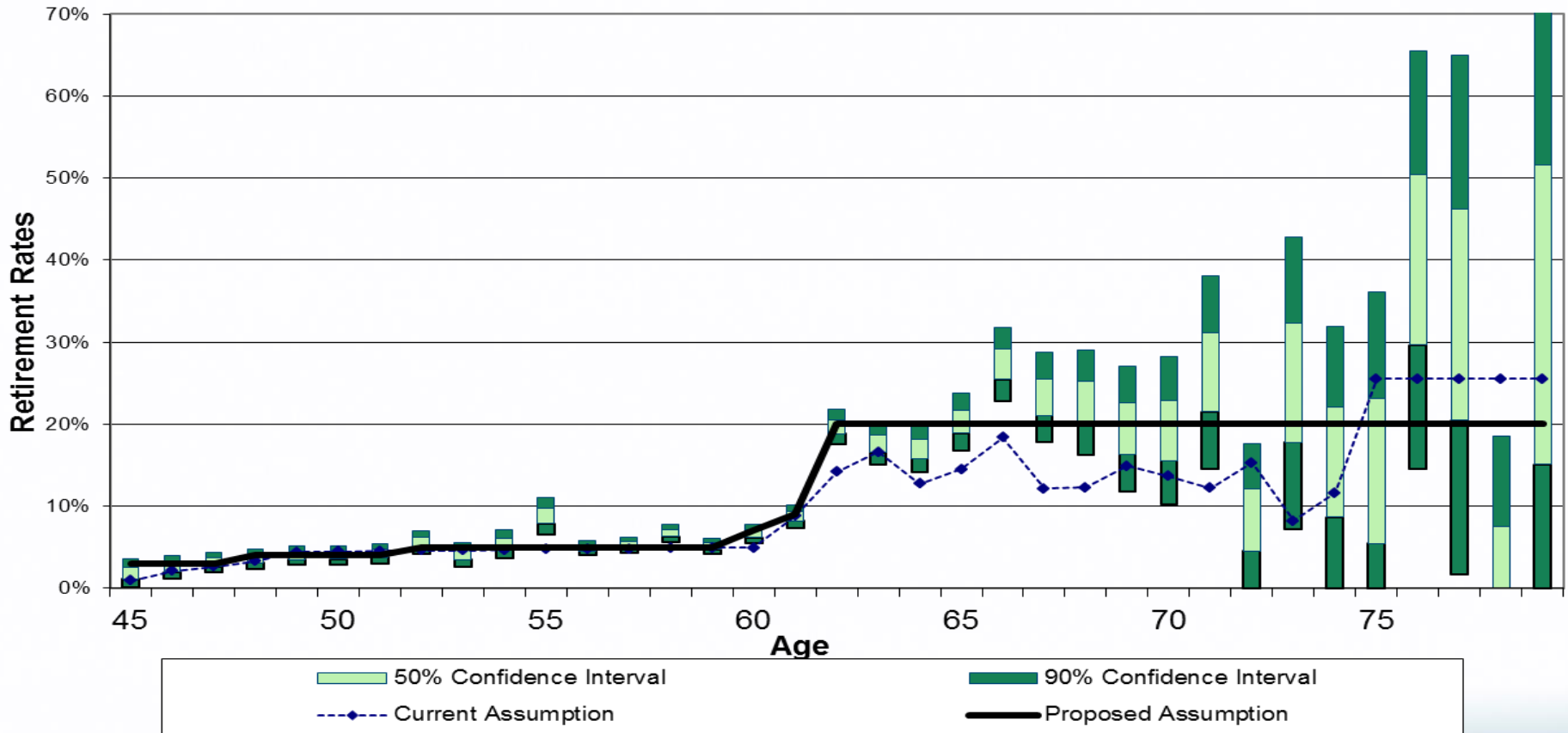
This chart combines the assumptions from the prior two slides



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Deferred Retirement (Tier I) Special Risk Class Males

Time until deferred retirement for age 50 member essentially unchanged (until age 61-62)



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Summary –Timing of Retirement/DROP Entry

- Differences in proposed assumptions compared to the current GASB assumptions:
 - DROP entry is higher at ages 57+ for Regular class
 - DROP entry is higher at all ages for Special Risk class
 - Immediate retirement is lower below age 62 for Regular class females, and at all ages for Regular class males
 - Deferred retirement is lower below age 70 for Regular class females, and below age 62 for Regular class males
- For DROP entry, the current assumption used for calculating contribution rates differs from the GASB assumptions
 - This is covered at length in the next section

Demographic Assumptions - DROP Funding Calculations and Retirement Timing Assumptions

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Background

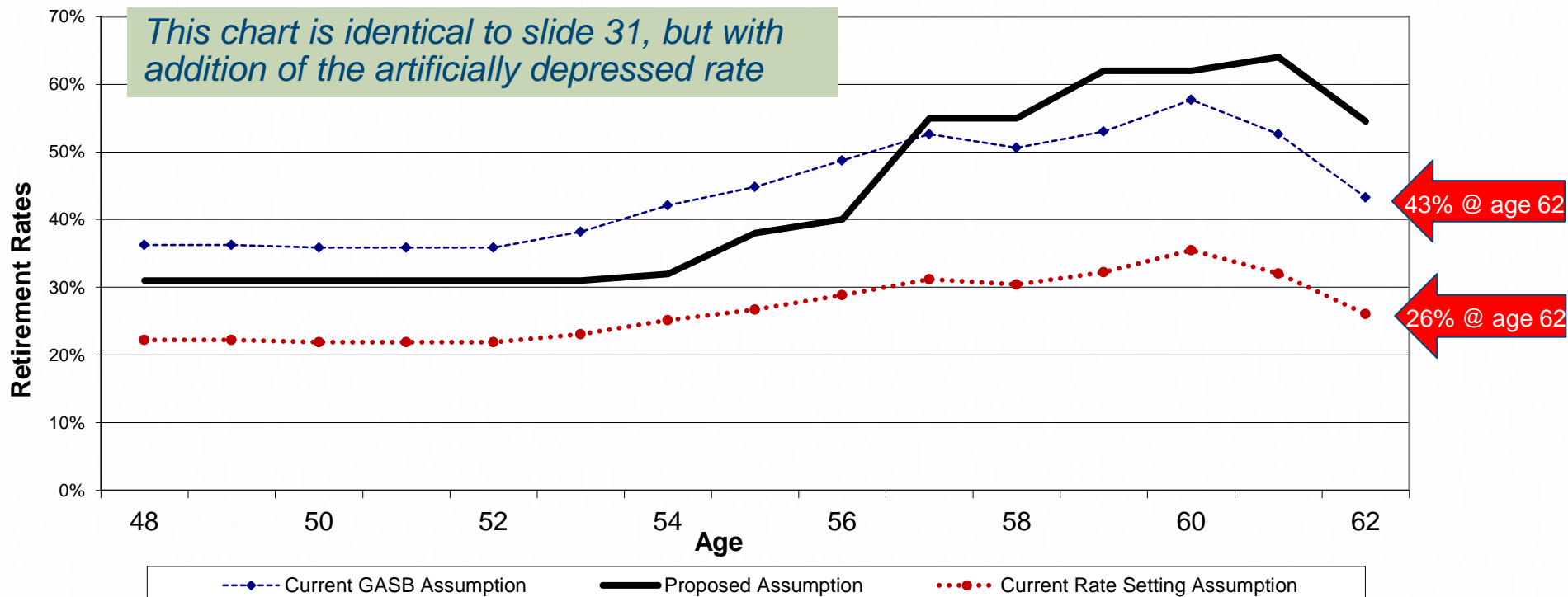
- DROP started in 1998
 - A study completed prior to the DROP's implementation showed a material cost increase from its introduction
- Current method of funding DROP was designed so that implementation of the DROP would not affect the normal cost contribution rates of the various membership classes
- The current funding method has two cornerstone pieces
 - Uniform DROP payroll charge for all membership classes
 - Artificially depressed class-specific retirement assumptions to calculate actuarially determined contribution rates as if the DROP did not exist

Artificially Depressed Retirement Rates

- Retirement assumptions used for financial reporting calculations treat either DROP entry or immediate retirement as equivalent, consistent with GASB requirements
 - Those assumptions are based on best estimates of observed experience, and recommended adjustments were presented in the previous section
- Assumptions used to determine actuarially calculated class-specific contribution rates are different and lower
 - They are artificially depressed by multiplying the likelihood of DROP entry by one-half, to estimate what the initial eligibility retirement rates might be if the DROP did not exist

Artificially Depressed Retirement Rates

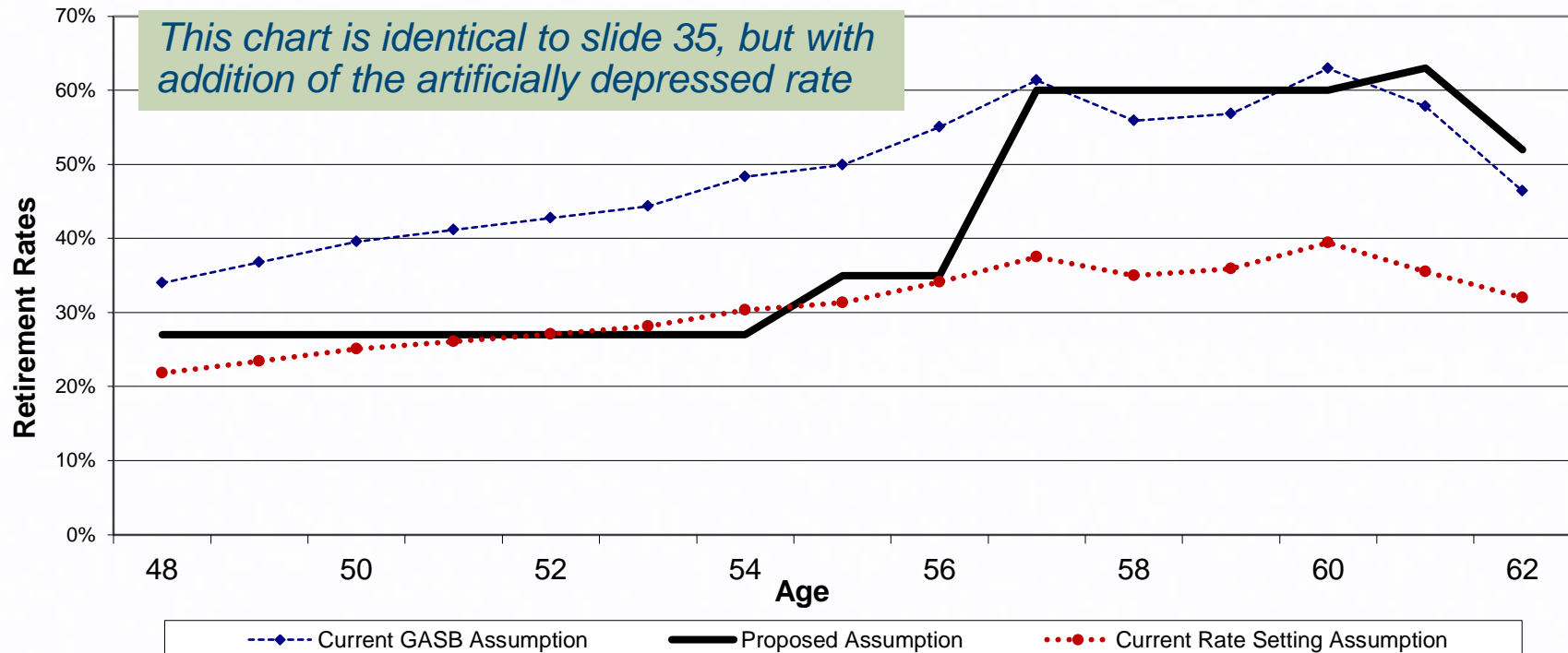
Regular Class Females



The retirement assumptions used for contribution rate setting understate the likelihood of DROP entry, which is nearly equivalent to retirement from a System financial perspective

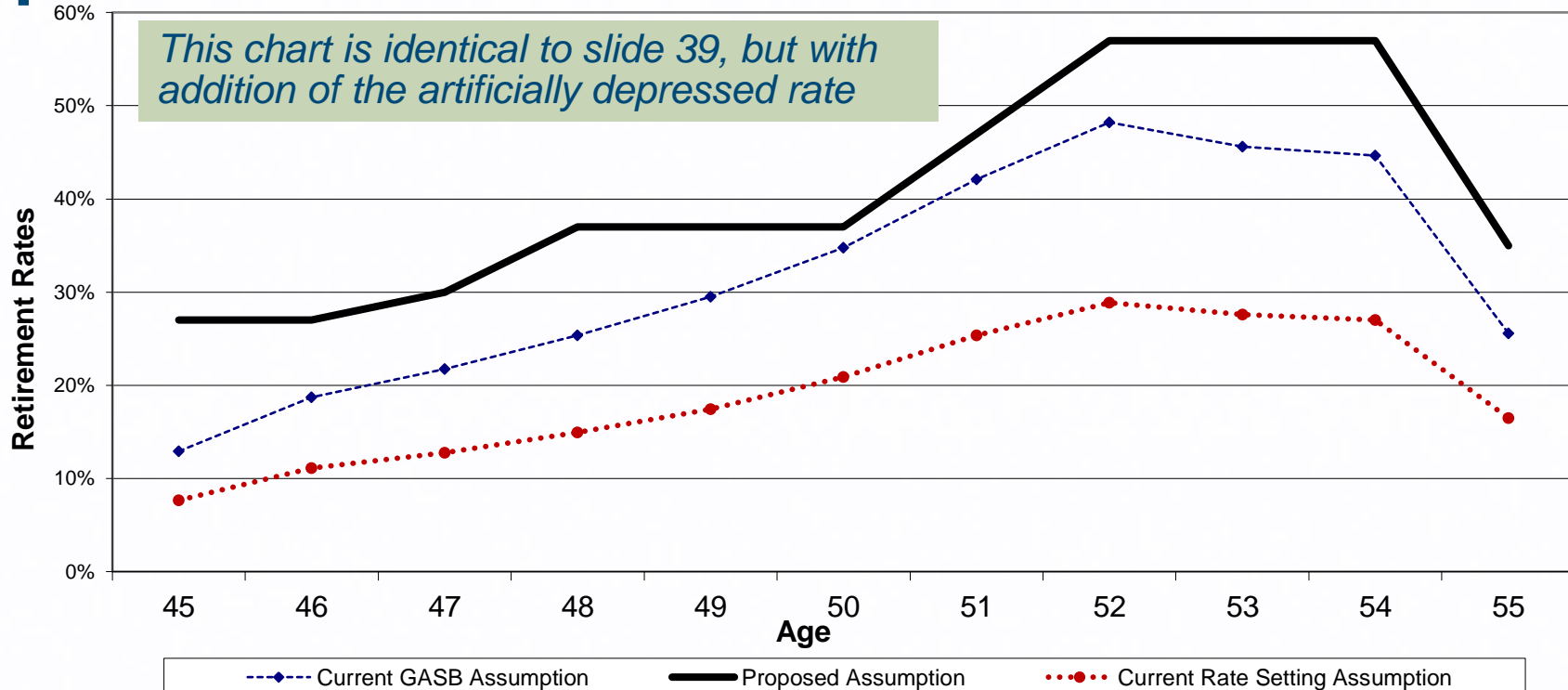
Artificially Depressed Retirement Rates

Regular Class Males



The retirement assumptions used for contribution rate setting understate the likelihood of DROP entry, which is nearly equivalent to retirement from a System financial perspective

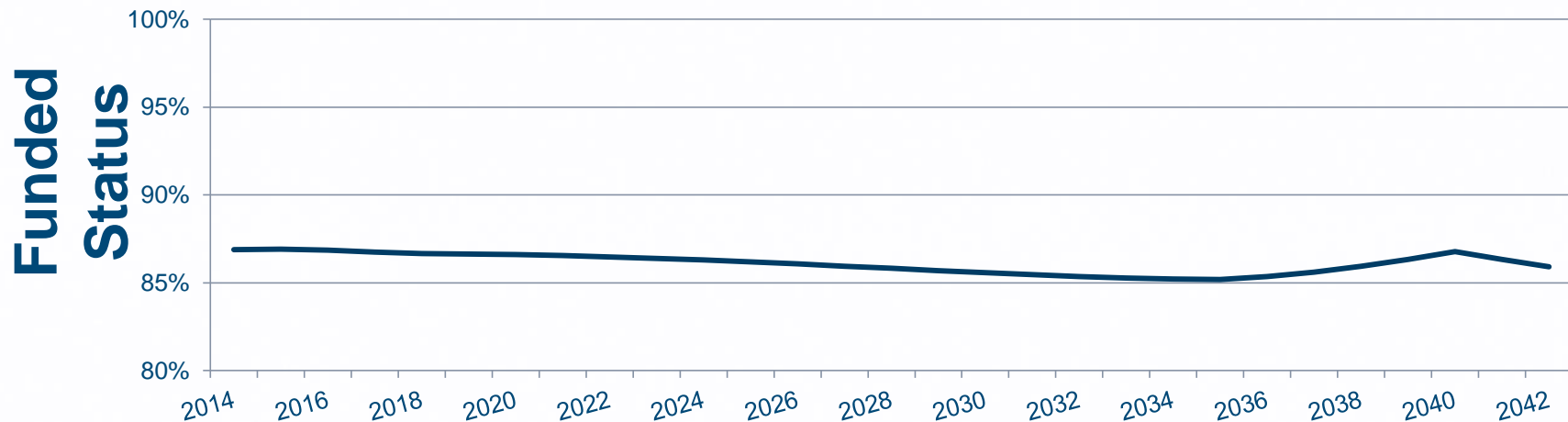
Artificially Depressed Retirement Rates Special Risk Class Males



The retirement assumptions used for contribution rate setting understate the likelihood of DROP entry, which is nearly equivalent to retirement from a System financial perspective

Artificially Depressed Retirement Rates

How does the use of artificially depressed retirement rates affect the projected System funded status in future years?



Excerpt above from a March 2014 Milliman analysis with projected funded status if (a) actual future investments earnings are 7.75% annually, (b) all other assumptions identified in that analysis are met and (c) current methods are used

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DROP Entry vs. Subsequent Retirement

- The most common DROP entry opportunity is for Regular class females turning age 62
 - Our current assumptions estimate that members in that group who choose not enter the DROP or immediately retire work an additional seven years on average
 - That estimate is unchanged in our proposed assumptions
- From a System financial perspective, it is about 20% more expensive for an age 62 Regular class female to enter DROP than to work seven additional years without entering DROP
 - Foregone benefits are more valuable than starting benefit increases from additional service, pay and higher accrual rates

DROP Entry vs. Subsequent Retirement

- So what happens for the group in question (Regular class females turning age 62 and reaching DROP eligibility) when:
 - 26%* of that group have been assumed to enter the DROP (or retire immediately) per the artificially depressed rate-setting assumptions, but
 - 43%* actually do enter the DROP or retire immediately, mirroring current GASB assumptions?

Answer: An “actuarial loss” occurs as more people take the expensive option than the rate-setting assumptions anticipated

**See slide 45 for illustration of assumed retirement rates*

DROP Entry vs. Subsequent Retirement

- An actuarial loss is an increase in liability for experience that differs from assumption
 - The liability for the group in question increases by 3%-4% when the higher than estimated (by the assumptions used to set contribution rates) number of entries into the DROP occur
- This dynamic dampens System funded status improvement
 - Each year a new group of members reach DROP eligibility, more enter DROP than estimated by the artificially depressed assumptions used for setting contribution rates, and new actuarial losses arise

DROP Contribution Rate Calculations

- We recommend a change so that:
 - Both contribution rate-setting and GASB calculations would use best-estimate assumptions for DROP entry, instead of the current approach of using artificially depressed rates for contribution rate-setting calculations
- In other words, the recommended change would replace the current bifurcated rate approach for the retirement assumption with a single rate approach
 - Using slides 45-47 as examples, the single solid line would replace the two dashed lines

DROP Contribution Rate Calculations

- This change would lead to better prefunding of DROP during each member's working career, consistent with the prefunding of other System benefit features
- A uniform rate to be charged to DROP payroll could still be calculated to be consistent with legislative directives

Demographic Assumptions - Other Assumptions & Wrap-up

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Other Demographic Assumptions

- We compared observed experience versus expected experience under current assumptions for other demographic events
- For each of the following assumptions, observed experience was reasonably close to current assumptions, with any proposed assumption changes minor in nature and not materially affecting liability or System-average contribution rate calculations
 - Termination of employment prior to unreduced retirement
 - Non-duty-related disability incidence
 - Disability mortality
 - Active member mortality

Duty-Related Disability Assumptions

- Observed incidence of duty-related disability were compared to the expected incidence based on current assumption
- Actual disability incidence was well below expected for Special Risk class and, collectively, for all other membership classes
 - As such, a modification to assumption is proposed
- Proposed rates are set to mirror observed FRS experience
- Rates vary by gender and age, and Special Risk has different rates than other membership classes
 - Male disability incidence approximately twice female incidence
 - Special Risk incidence approximately nine times that for other membership classes

Demographic Assumptions Wrap-Up

- We propose approval of the demographic assumptions summarized in this section for use in 2014 actuarial valuation calculations for both of the following purposes:
 - Actuarially calculated contribution rates
 - GASB financial reporting

Demographic Assumptions Wrap-Up

- Estimated System average impact of the proposed changes in this section on the 2013 actuarial valuation would have been:

| Metric | Approximate Effect |
|------------------------------------|---------------------------|
| Unfunded Actuarial Liability (UAL) | -\$1.7 billion |
| Normal Cost Rate | 0.0% of affected payroll |
| UAL Rate | -0.3% of affected payroll |

- The UAL decrease is due to the effect of the mortality assumptions for classes other than Regular class
- The proposed elimination of the artificially depressed retirement rates and the increase in average time worked prior to deferred retirement offset each other

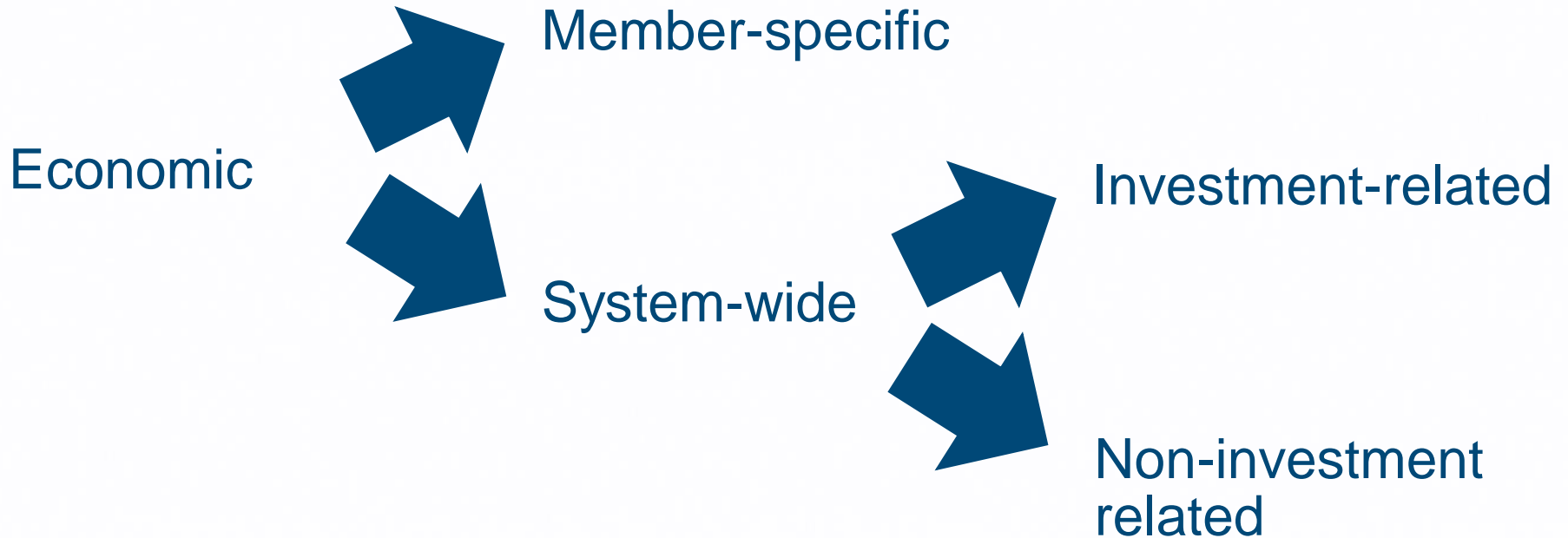
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Economic Assumptions

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Categories of Economic Assumptions

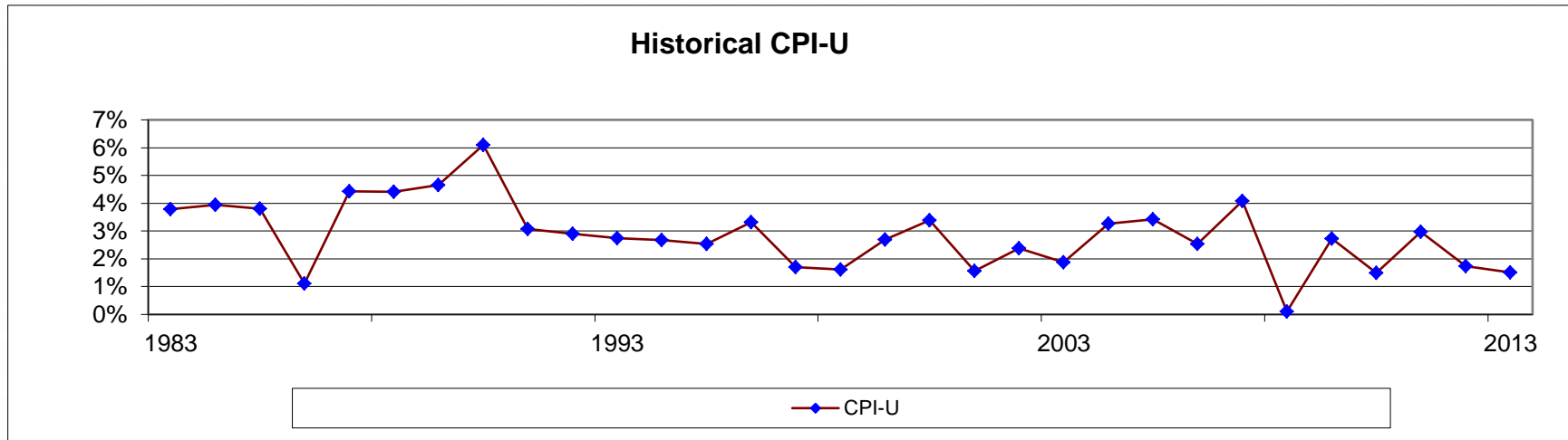
- There are differing categories of economic assumptions



Economic Assumptions – Inflation & System Payroll Growth

Economic Assumptions

Inflation



- Inflation assumption affects all other economic assumptions, including investment return, payroll growth, and individual member pay increases
- Over the past 30 years average inflation has been 2.82%, while over the past 15 years the average was 2.38% (calculated as a geometric annual average)

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Economic Assumptions

Inflation

- TIPS yields give a market estimate of future inflation

| As of 7/31/2014 | 10-Year | 30-Year |
|----------------------|--------------|--------------|
| Treasury Yield | 2.58% | 3.32% |
| TIPS Yield | <u>0.29%</u> | <u>0.96%</u> |
| Break-even Inflation | 2.29% | 2.36% |

- Social Security's intermediate long-term assumption is 2.70%
 - Combined with its lower near-term assumption, it produces a 30-year average of 2.60%
- The 30-year inflation assumption for HEK/SBA is 2.30%
- We recommend an assumption decrease from 3.00% to 2.50%

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Economic Assumptions

System Payroll Growth

- The System payroll growth assumption is an important component of the calculations to amortize the UAL in determining actuarially calculated contribution rates
- Theoretically, payroll growth equals inflation plus real wage growth if active member headcount remains constant
- We recommend an assumption decrease from 4.00% to 3.25%

| | Current | Proposed |
|------------------|--------------|--------------|
| Inflation | 3.00% | 2.50% |
| Real Wage Growth | <u>1.00%</u> | <u>0.75%</u> |
| Payroll Growth | 4.00% | 3.25% |

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Economic Assumptions – Investment Return

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Uses of the Long-Term Return Assumption

- As a “discount rate” for establishing the:
 - Actuarial accrued liability, which is a net present value
 - The associated unfunded actuarial liability (UAL)
- Component of the amortization factor used to calculate the contribution plan to eliminate existing UAL over time if future experience (investment-related and otherwise) follows assumptions and calculated contributions are made



Reflecting expectations for future average annual investment earnings, the assumption helps identify a prudent glide path for employer contribution rates

Effect of the Assumption on Amortizations

- At the current 7.75% investment return assumption, not enough money is on hand today to fully satisfy obligations
 - The most recent UAL estimate is \$20 billion (on a market value of assets basis) from the 2013 actuarial valuation
- To address the UAL, an installment payment schedule with an articulated amortization period is developed with three key components setting the annual payment level
 - Investment return assumption
 - Payroll growth assumption
 - Amortization period
- The installment plan is the “UAL Rate” part of employer rates

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Setting the Investment Return Assumption

Given that we do not know what the actual investment earnings will be, how should one proceed?

- Prudently select a best estimate
- Solicit forecasts from investment professionals
- Recognize that hoping for a result does not make it happen; the assumption does not affect actual investment returns
- Don't be myopic --- the objective is to make a sound long-term estimate, not to get a single individual year right
- Neither ignore historical results nor be 100% beholden to them
- Since actual results will vary from assumption, review the forecasts' probability ranges and consider a margin for variance

Investment Return Projections

- We have developed 30-year investment return projections based on:
 - New target asset allocation for FRS
 - Market outlook assumptions developed by Milliman’s credentialed investment professionals
- Given the inherent uncertainty of future investment returns, model results are stated as probability ranges
- Today’s speakers are not credentialed investment advisors



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Milliman Investment Return Model

- Based on FRS newly identified target asset allocation
- Model results in table are geometric annual average net returns, stated as nominal returns, rounded to the nearest 0.1%

| Percentile | 30 Year Average |
|------------------------|-----------------|
| 65 th | 7.7% |
| 60 th | 7.4% |
| 55 th | 7.2% |
| 50th | 6.9% |
| 45 th | 6.6% |
| 40 th | 6.3% |
| 35 th | 6.0% |

- Milliman model is based on a series of average annual real returns by asset class, plus asset class correlations
- Based on 2.50% inflation assumption and 0.25% deduction for plan expenses
- Model single-year arithmetic mean nominal return is 7.56%
- Model 50th percentile real return (net of inflation) is approximately 4.3%

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HEK/SBA Investment Return Model

- The HEK model is developed on a real return (i.e., return in excess of inflation) basis
 - Investment Policy Statement currently has a long-term goal of 5% real return (net of expense)
- Asset allocation policy is shaped to achieve this goal, using annual updates of assumptions and asset-liability analysis over 15 future years
- Current HEK/SBA assumptions show a 5% real return has more than a 50% probability (51% over 15 years, 54% over 30 years)
- On that basis nominal net returns in the HEK/SBA model are **7.66%** over 30 years (based on a 2.3% inflation assumption)

Effects of Lowering the Return Assumption

- A lower investment return assumption produces higher calculated liabilities and higher near-term actuarially calculated contribution rates
 - An assumption change tilts the expected balance of the fundamental cost equation away from investment earnings and toward contributions
- A lower assumption also lessens the potential for a pattern of increasing contribution rates in future years
 - Actual investment results determine ultimate long-term System cost, so all else being equal contribution rates
 - Go up if investments underperform assumption
 - Go down if investments outperform assumption

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System-Wide Economic Assumptions

| | Current Assumption | Recommendation |
|-------------------|--------------------|------------------|
| Inflation | 3.00% | 2.50% |
| Payroll Growth | 4.00% | 3.25% |
| Investment Return | 7.75% | Lower assumption |

Investment Return Assumption Wrap-Up

- Estimated System average impact of a change solely in the 2013 valuation's return assumption to 7.25% would have been:

| Metric | Approximate Effect |
|------------------------------------|-------------------------|
| Unfunded Actuarial Liability (UAL) | +\$11 billion |
| Normal Cost Rate | +1% of affected payroll |
| UAL Rate | +2% of affected payroll |

- The amounts are shown are a simplified illustration if no other assumption had been modified
 - A single assumption change is typically not made
 - The effect of coordinated assumption changes (such as to inflation or payroll growth) would modify these estimates

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Economic Assumptions – Individual Member Pay Increases

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Individual Member Pay Increase Assumption

- Pay increases are projected for each individual member's full career, with future increases based on membership class, service and gender
 - Observed differences by gender were minor in our study
- For each member and each individual year, the assumed pay increase can be thought of as having two components
 - Inflation-related factor
 - Non-inflation-related factors
 - Systemic - productivity improvements / market competition
 - Individual – step increases, promotion, etc.

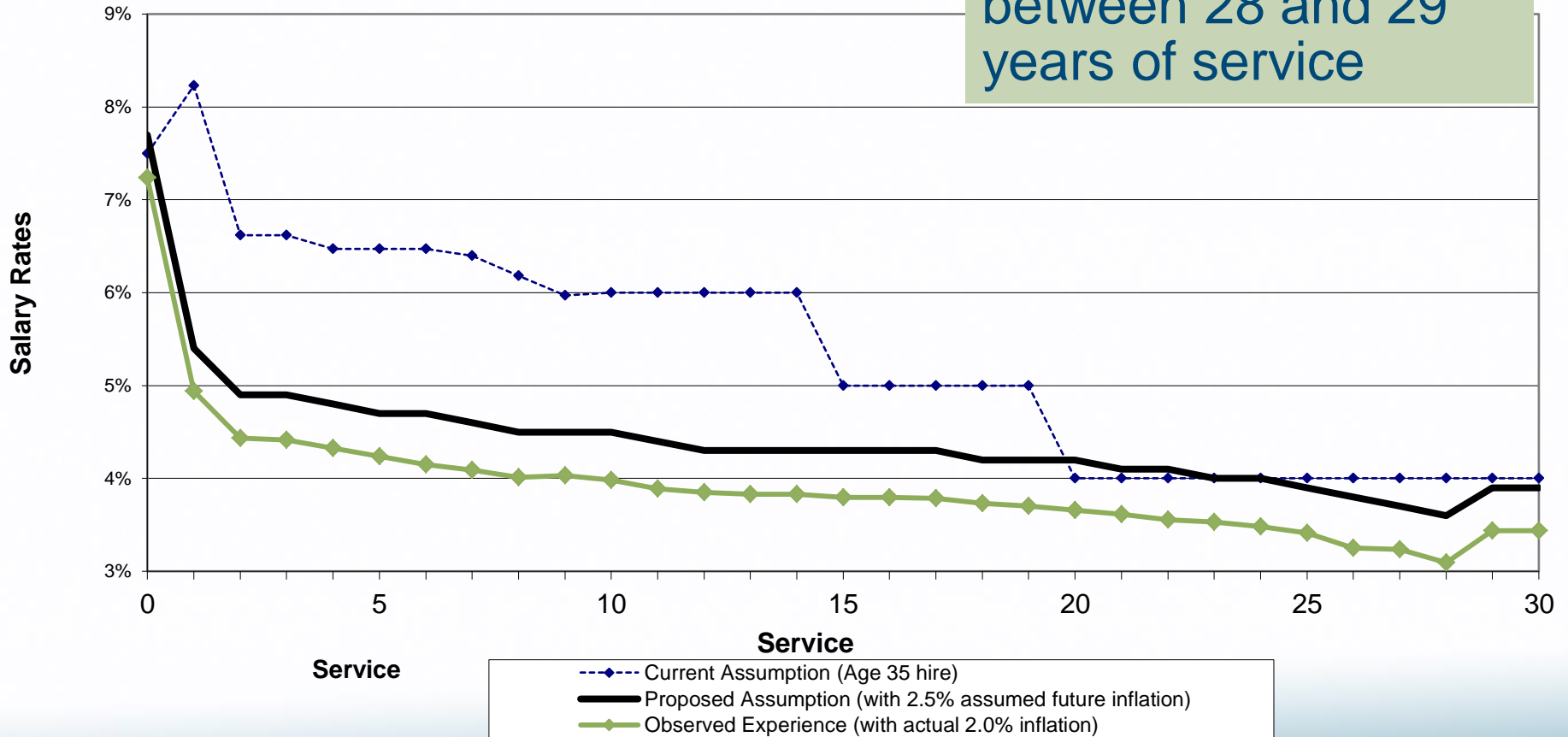
Assumption-Setting Process

- The current assumption is charted on the next slides for each member group
 - It is based on actual 2003 - 2008 observed experience and the current 3.0% long-term future inflation assumption
- Actual 2008 – 2013 observed experience is also charted
 - That experience is based on 2.0% actual average inflation, measured on a one-year lag, during the observation period
- Proposed assumption is developed by adjusting the recently observed experience to levels that would have occurred if actual inflation had been at the proposed 2.5% long-term assumption
 - Sets inflation-linked component at 2.5% assumption
 - Non-inflation-linked component set at observed experience

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Individual Member Pay Increase Regular Class Females

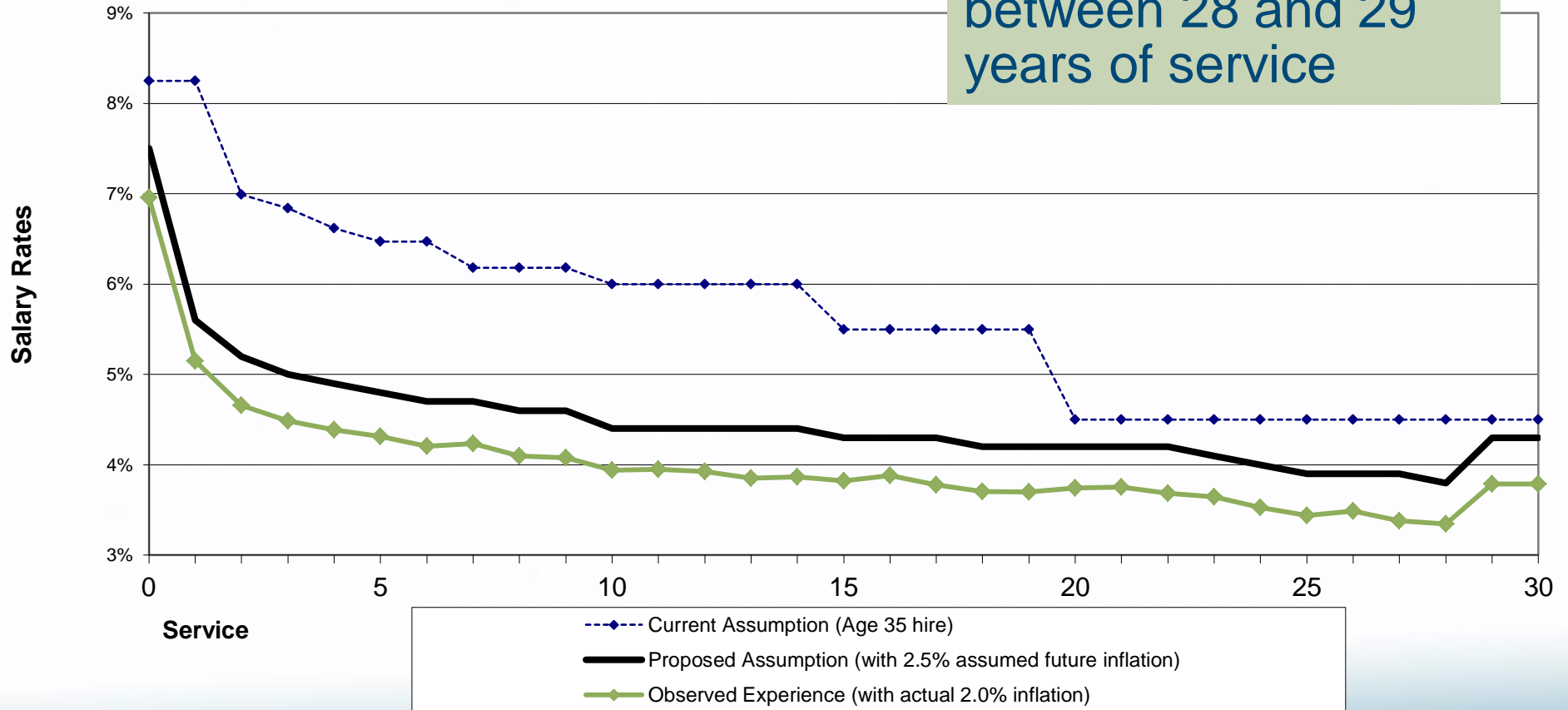
Proposed assumption increases 0.3% between 28 and 29 years of service



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Individual Member Pay Increase Regular Class Males

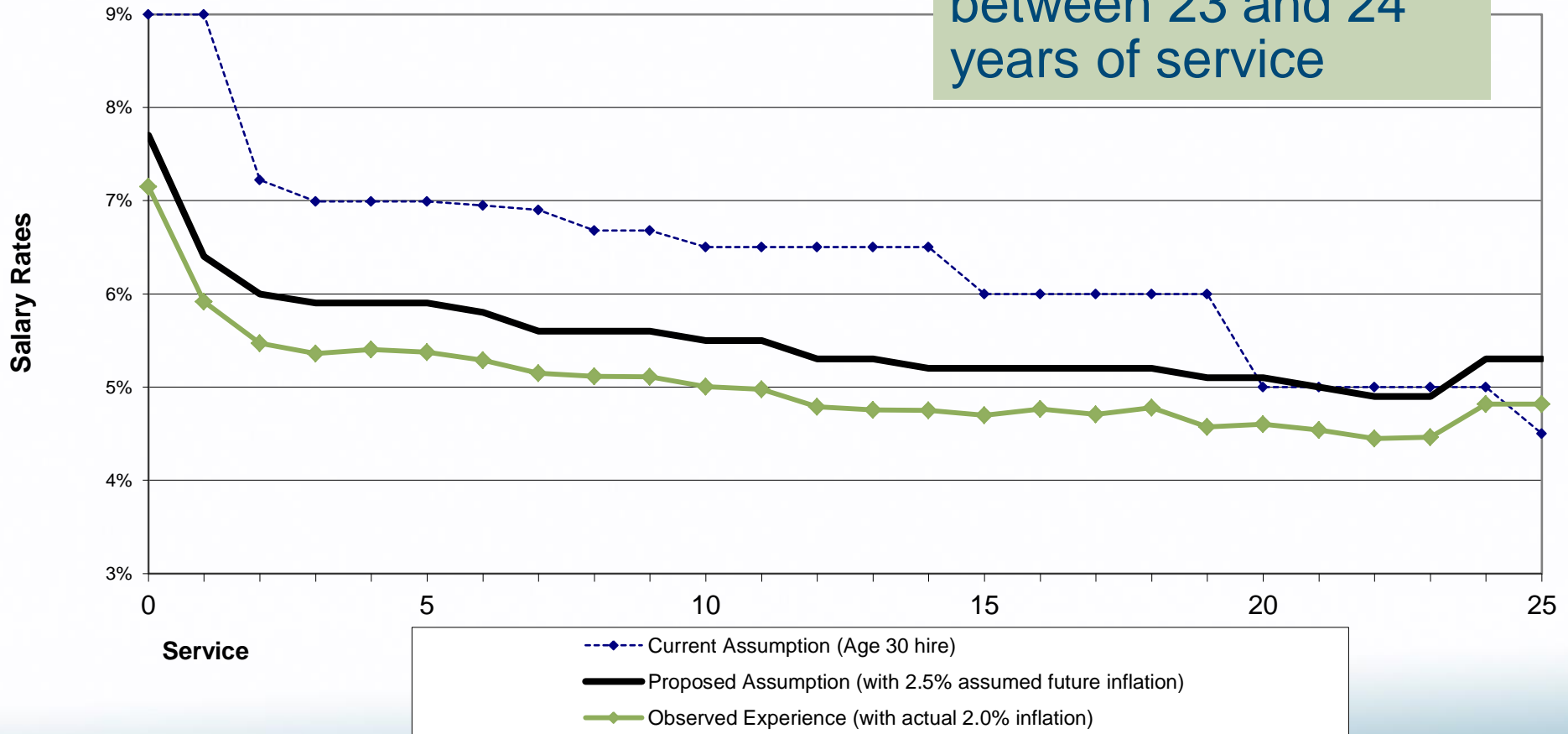
Proposed assumption increases 0.5% between 28 and 29 years of service



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Individual Member Pay Increase Special Risk Class Males

Proposed assumption increases 0.4% between 23 and 24 years of service



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Summary – Individual Member Pay Increase

- Proposed assumption is markedly lower than current assumption at most service levels
 - Differences are most pronounced in the first half of members' careers
- The decrease has several component pieces
 - Lowering of the inflation-linked piece by 0.50%
 - Lowering of the real wage growth piece by 0.25%
 - Persistent observed experience indicates a decrease in the member-specific, service-linked piece is warranted
 - This piece can also be referred to as the *merit increase* or the *longevity increase*

Individual Member Pay Increase Wrap-Up

- Estimated System average impact of the proposed changes in this section on the 2013 actuarial valuation would have been:

| Metric | Approximate Effect |
|------------------------------------|---------------------------|
| Unfunded Actuarial Liability (UAL) | -\$1.7 billion |
| Normal Cost Rate | -1.4% of affected payroll |
| UAL Rate | -0.3% of affected payroll |

- The amounts are shown are a simplified illustration if no other assumptions had been modified
 - A single assumption change is typically not made
 - The effect of coordinated assumption changes (such as to inflation or investment return) would modify these estimates

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Review of Unused Annual Leave Assumption

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Review of Unused Annual Leave Assumption

- Members are allowed to count an amount of unused annual leave in their final average salary calculations not to exceed the lesser of 500 hours or any employer-specific policy limits
- Current assumption is uniform across all membership classes
- Recent experience indicates an updated assumption is appropriate

| Membership Classes | Current Assumption | Proposed Assumption |
|----------------------------------|--------------------|---------------------|
| Special Risk, Senior Management | 139 | 290 |
| Regular, Other Classes Not Noted | 139 | 230 |

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Actuarial Methods

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Use of Actuarial Methods

- Actuarial methods allocate the net present value of the projected benefit payments between past and projected future service, which establishes funded status
 - Calculations are done on a budgeting basis
- Methods selected, when combined with assumptions, also develop the pattern of projected contribution rates



Actuarial Methods

Shortfall Amortization

Amortization Period

- Each year, the system experiences an “actuarial gain” or “actuarial loss” by comparing actual experience to assumed
 - Gains decrease UAL, while losses increase UAL
 - Gains and losses are created by both
 - Investment experience
and
 - Demographic experience

Amortization Period

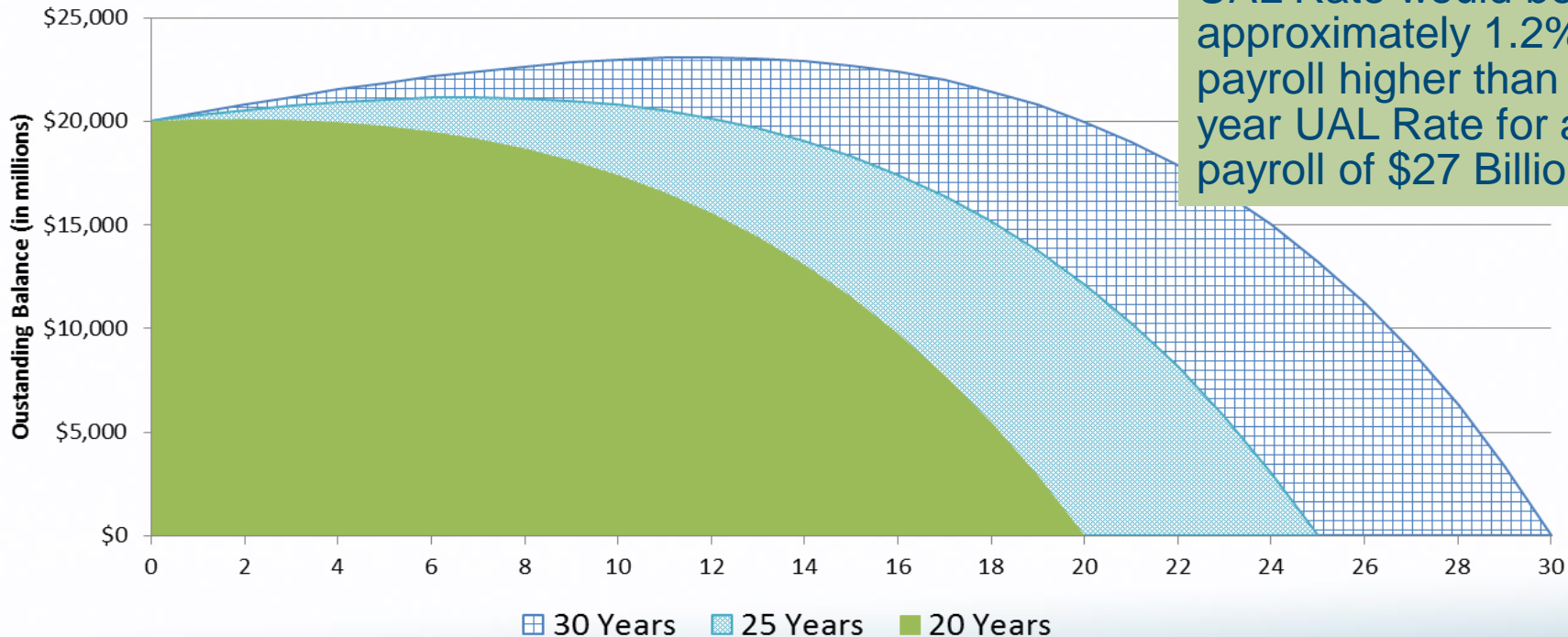
- Current policy has been to amortize each year's gain or loss over a closed 30-year period as a level percentage of projected payroll
 - Statute limits amortization to a maximum of 30 years
- The Pension Funding Task Force and other study groups view 30 year amortizations as less than optimal
 - That opinion is driven partially by the initial “negative amortization” that occurs in a 30-year level percentage of pay amortization

Amortization Period

This slide illustrates the amortization pattern of a \$20 billion UAL over several alternative amortization periods

UAL Balance by Amortization Period

Level % of Pay, 7.75% interest, 4.0% payroll growth



For the amortization illustrated here, the 20-year UAL Rate would be approximately 1.2%-1.3% of payroll higher than the 30-year UAL Rate for a UAL payroll of \$27 Billion

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Shortfall Amortization Periods

- Recent funding policy guidance from organizations such as GFOA recommends periods of twenty years or less for amortizations of most UAL sources as a best practice
 - Guidance indicates that for certain specified UAL sources, amortizations of up to twenty-five years can be considered acceptable
 - Changes in cost allocation method or investment return assumption are two of the UAL sources so identified

Amortization Wrap-Up

- We propose at the next meeting to illustrate the effect of:
 - Current amortization policyversus
 - Amortizing all outstanding unfunded actuarial liability (UAL) as of July 1, 2014 over a twenty-year period
 - As a potential variation to the twenty-year amortization alternative, amortizing over twenty-five years the portion of the UAL arising from modifications to:
 - Economic or demographic assumptions
 - Actuarial cost allocation method

Actuarial Methods

Actuarial Cost Allocation Method

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Cost Allocation Methods - Introduction

- The division of the present value of a member's projected benefit payments between past, current & future service is done through use of an actuarial cost allocation method
- The present day value of projected future benefits allocated to a particular working year is the **Normal Cost**
- The present day value of projected future benefits allocated to prior years is the **Actuarial Liability**
- The difference between the Actuarial Value of Assets and the Actuarial Liability is the **Unfunded Actuarial Liability (UAL)**

Entry Age Normal Cost Allocation Method

- By far the most commonly used cost allocation method for state systems is Entry Age Normal (EAN)
 - Conceptually, EAN sets normal cost rate level as a percent of payroll over a member's full projected working career
- There are different categories of EAN, including:
 - Individual EAN (most commonly used)
 - Ultimate EAN (used by FRS)
 - Each of these categories contains different interpretations of how to calculate the key metrics

New GASB standards mandate use of Individual EAN for financial reporting calculations for the System and its employers

Ultimate EAN Cost Allocation Method

- FRS currently uses the Ultimate EAN cost allocation method for calculating employer contribution rates to fund the System
 - Individual EAN is used for financial reporting, per GASB
- Ultimate EAN sets Normal Cost as if each member was in Tier II
 - As such, Normal Cost is lower with Ultimate EAN than it is under Individual Entry Age
- Cost methods do allocate benefits between past and projected future service, but don't affect the level of projected benefits
 - Since Ultimate EAN allocates less of projected benefits to future service, it allocates more to past service and has a higher actuarial liability than Individual Entry Age

Contribution Rates

- Actuarially calculated contribution rates =
 - (Normal Cost) + (Amortization of Unfunded Actuarial Liability)
- The best way to understand the contribution rate differences between Individual EAN and Ultimate EAN is development of the normal cost rate for a Tier I member

Individual EAN Cost Allocation Method

- A Tier I member's Individual EAN normal cost rate is the level % of payroll contribution needed during a member's career to fund a Tier I level of benefits if experience follows assumptions
 - The bifurcated nature of Tier I COLA benefits means that Tier I members with the same age at hire but differing years of service will have different Individual EAN normal cost rates
 - This differs from Ultimate EAN, where the normal cost rate is set for Tier I members as if they do not receive COLA benefits, consistent with the lack of COLA in Tier II benefits

Ultimate EAN Cost Allocation Method

- The cost allocation method used by FRS to calculate employer contribution rates to fund the System is Ultimate EAN
- Ultimate EAN calculates the normal cost rate for all members as if they all participate in the newest, or ultimate, tier
- Our sample Tier I's Ultimate EAN normal cost rate is the career level % of payroll contribution needed to fund a Tier II level of benefits if experience follows assumptions
 - Members with the same age, membership class and gender at hire will all have the same normal cost rates under Ultimate EAN regardless of year of hire or tier

Ultimate EAN Cost Allocation Method

- The total projected benefit levels calculated for individual members do reflect tier and year of hire
 - Cost method only affects allocation between past, current & future

Individual EAN v. Ultimate EAN Comparison

- Individual EAN's normal cost rate is higher than Ultimate EAN's
 - The System average Individual EAN normal cost rate would gradually drift to the Ultimate EAN normal cost rate over time
- Similarly, Individual EAN has a higher present value of all future normal costs than Ultimate EAN
- Because Ultimate EAN allocates less of total projected benefits to future years of service, Individual EAN has a lower Actuarial Liability than Ultimate EAN
 - Actuarial Liability = (Net present value of projected future benefits) - (Costs allocated to projected future service)

Individual EAN v. Ultimate EAN Comparison

- Even though Ultimate EAN has a higher Actuarial Liability and Unfunded Actuarial Liability (UAL), the amortization of that higher UAL is only a partial offset to the higher normal cost rate of Individual EAN

Individual EAN v. Ultimate EAN Comparison

| | Individual EAN | Ultimate EAN |
|---|---|---|
| Calculation of Tier I Normal Cost Rate | Reflects career average cost of Tier I benefit | Reflects career average cost of Tier II benefit |
| Present Value of Future Normal Costs (PVFNC) | Higher under this method | Lower under this method |
| Total Present Value of Projected Benefits (PVPB) | Equivalent regardless of allocation method | Equivalent regardless of allocation method |
| Actuarial Liability (= PVPB minus PVFNC) | Lower under this method | Higher under this method |
| System Average Normal Cost Rate | Drifts down over time as Tier IIs replace Tier Is | Remains level over time |

A change to Individual EAN allocation would increase Normal Cost and decrease Actuarial Liability, while not affecting projected benefit payment levels

Individual EAN v. Ultimate EAN Comparison

- The differences between Individual EAN and Ultimate EAN can be assessed through the prism of these guiding principles:
 - Protection of funded status
 - Contribution rate stability
 - Contribution rate predictability
 - Intergenerational equity
 - Transparency and understandability
 - Actuarial soundness
- Contribution rate policies differ significantly in their funding patterns and effects on funded status projections if future experience follows assumptions

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Cost Allocation Method Wrap-Up

- We propose at the next meeting to illustrate effects of:
 - Retaining current interpretation of Ultimate Entry Age versus
 - Retaining Ultimate Entry Age, but modifying the interpretation approach to allocate future normal costs only to projected service periods based on Tier I retirement timing assumptions for Tier I members versus
 - Changing to Individual Entry Age, which is consistent with GASB standards and the most commonly used method

We recommend using either the 2nd or 3rd approach listed above

Wrap-Up

A Look Forward to Next Meeting

- Plan year 2013-2014 investment returns were above assumption
- The part of the accumulated investment gains to be recognized by asset smoothing methodology in 2013-2014 is shown

| Metric | Approximate Effect |
|------------------------------------|---------------------------|
| Unfunded Actuarial Liability (UAL) | -\$3 billion |
| Normal Cost Rate | 0.0% of affected payroll |
| UAL Rate | -0.6% of affected payroll |

- In addition, we preliminarily estimate that approximately \$10 billion of accumulated investment gains will not yet be recognized in the July 1, 2014 Actuarial Value of Assets (AVA)
 - Systematic recognition occurs in subsequent plan years

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Agenda for Next Meeting

- Compare actuarial calculations under current policies and any proposed alternative policies identified today
 - Calculations will be based on demographic census and System financial information as of July 1, 2014
- Formal approval of all methods and assumptions for use in the 2014 actuarial valuations for FRS and HIS, which will determine actuarially calculated contribution rates for July 2015 - June 2016

Thanks for your time and attention this afternoon

Appendix

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Milliman Capital Market Outlook Assumptions

For assessing the expected portfolio return under Milliman’s capital market assumptions, we considered the FRS to be allocated among the model’s asset classes as shown below. This allocation is based on our understanding of the most recently revised target allocation policy, titled “Fixed Income to GE, RE, PE, SI (6%)” as provided to us by email on July 22, 2014.

| | Policy | Annual | Annualized | Annual |
|---|-------------------|-------------------|-------------------|------------------|
| | Allocation | Arithmetic | Geometric | Standard |
| | | Mean | Mean | Deviation |
| Cash | 1.0% | 3.01% | 3.00% | 1.65% |
| Intermediate-Term Bonds | 18.0% | 4.07% | 3.95% | 5.15% |
| High Yield Bonds | 3.0% | 6.69% | 6.15% | 10.95% |
| Broad US Equities | 26.5% | 8.41% | 6.85% | 18.90% |
| Developed Foreign Equities | 21.2% | 8.56% | 6.75% | 20.40% |
| Emerging Market Equities | 5.3% | 11.48% | 7.50% | 31.15% |
| Private Equity | 6.0% | 11.70% | 8.00% | 30.00% |
| Hedge Funds / Absolute Return | 7.0% | 5.71% | 5.25% | 10.00% |
| Real Estate (Property) | 12.0% | 7.01% | 6.25% | 13.00% |
| US Inflation (CPI-U) | | | 2.50% | 2.00% |
| Fund Total (reflecting asset class correlations) | 100.0% | 7.56% | 6.89% | 12.08% |

* Returns reflects 0.25% reduction for System expenses.

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Actuarial Basis

Data

We have based our projection of System liabilities on the data supplied by the Florida Retirement System (FRS) for the five plan year observation period of July 1, 2008 to June 30, 2013. The data was not independently audited by Milliman.

Assets as of June 30, 2014, measured on a fair market value basis are preliminarily estimated to be \$148 billion, as communicated verbally to us by FRS personnel during the week of July 28, 2014.

Methods / Policies

Actuarial Cost Method: For determination of actuarially calculated employer contribution rates: Ultimate Entry Age Normal, as described in the 2013 Valuation Report. For plan financial reporting: Individual Entry Age Normal, applied in a manner consistent with recently published GASB standards.

UAL Amortization: The UAL for FRS is currently amortized as a level percentage of projected applicable payroll over a closed period. Any additional UAL that arises each year from variations from the assumptions used for determination of actuarially calculated employer calculation rates is amortized over a 30 year period.

Actuarial Value of Assets: Asset smoothing method described in the 2013 Valuation Report. The method used is consistent with applicable statutes.

Assumptions

In general, all current assumptions are as described in the 2013 Valuation Report.

Provisions

Provisions valued are as described in the 2013 Valuation Report.

Analysis Methodology – Confidence Intervals

- The common statistical technique of *confidence intervals* was used in reviewing patterns in retirement and other categories
- Example: flipping a coin to see if it is fair or biased
 - Say it was flipped ten times and there were four tails
 - We shouldn't conclude it is biased, as there is a 38% chance of four tails or fewer from 10 flips of a fair coin
 - If instead it was flipped 1,000 times and there were 400 tails
 - There is only a 0.00000001% chance the coin is fair

Additional statistical information allows us to draw stronger conclusions about what constitutes an appropriate assumption based on recently observed experience

Caveats and Disclaimers

This presentation discusses actuarial methods and assumptions proposed for use in the valuation of the Florida Retirement System (“FRS” or “the System”). For the most recent complete actuarial valuation results, including cautions regarding the limitations of use of valuation calculations, please refer to our formal Actuarial Valuation Report as of July 1, 2013 (“the 2013 Valuation Report”) published on December 3, 2013. The 2013 Valuation Report, including all supporting information regarding data, assumptions, methods, and provisions, is incorporated by reference into this presentation. The statements of reliance and limitations on the use of this material is reflected in the Valuation Report and still apply to this presentation.

In preparing this presentation, we relied, without audit, on information (some oral and some in writing) supplied by the System’s staff, as well as capital market expectations provided by SBA and HEK. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

Milliman’s work product was prepared exclusively for the Department of Management Services for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning FRS’s operations, and uses FRS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman’s work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Any third party recipient of Milliman’s work product who desires professional guidance should not rely upon Milliman’s work product, but should engage qualified professionals for advice appropriate to its own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman’s advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this presentation is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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Assumptions Summary – Regular Class Females

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|---|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 95.8% | White collar generational, Scale BB, generally slightly higher life expectancy than current |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 5.4% | Service based; lower increases, especially at lower service levels; average increase of 4.4% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 230 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: near 30% at ages 48-56, near 40% at ages 57+ Funding: half of the above rates (artificially depressed) | Both GASB & Funding: Similar to current GASB assumption at ages 48-56; rates near 50% at ages 57+ |
| Immediate Retirement* | 8%-10% up to age 58; near 12% ages 59-61; 9% at age 62 | 4%-5% up to age 55; 7% ages 56-60; 9% at ages 61-62 |
| Deferred Retirement* | 5%-10% ages 48-57; 10%-15% at ages 58-64; 12%-18% thereafter | 2%-3% to age 57, grading to 5% at ages 59-61; 12% age 62; 8% ages 63-64; 15% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 5.4% (age 30) to 3.0% (age 65) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; markedly lower rates than current assumption |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; slightly lower rates than current assumption |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

Assumptions Summary – Regular Class Males

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|---|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 90.9% | 50% White collar/50% Blue collar generational, Scale BB; slightly higher future mortality improvement |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 5.7% | Service based; lower increases, especially at lower service levels; average increase of 4.5% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 230 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: near 30% at ages 48-55, near 40% at ages 56+ Funding: half of the above rates (artificially depressed) | Both GASB & Funding: Similar to current GASB assumption at ages 48-56; rate of 55% at ages 57+ |
| Immediate Retirement* | 10% grading to 16% at ages 48-60; 13% at age 61; 18% at age 62 | 4% at ages 48-54; 5% at ages 55-60; 8% age 61; 11% at age 62 |
| Deferred Retirement* | 9%-11% ages 48-65; grading to 13% at age 68 and thereafter | 2%-5% to ages 61; 11% at age 62; 8% at ages 63-64; 13% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 4.7% (age 30) to 3.7% (age 65) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; markedly lower rates than current assumption |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; slightly lower rates than current assumption |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

Assumptions Summary – Special Risk Class Females

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|--|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 95.8% | White collar generational, Scale BB, generally slightly higher life expectancy than current |
| Member Salary Increase | Age & service based; average annual increase for 30 year old hire who works 25 years of 6.2% | Service based; lower increases, especially at lower service levels; average increase of 5.3% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 290 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: 4% grading to 33% ages 45-54, 16% at age 55 Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 20% to age 51 and at ages 53-54; 30%-31% at ages 52 and 55 |
| Immediate Retirement* | Between 2%-10% at all ages from 45-55 | 4% at ages 45-49; 5% at ages 50-55 |
| Deferred Retirement* | 4%-7% to age 60; 9%-20% at ages 61-70; 65% thereafter | 3%-5% to age 59, 7%-9% at ages 60-61; 20-25% ages 62-69; 100% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 1.7% (age 30) to 4.0% (age 55) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; markedly lower rates than current assumption |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; slightly lower rates than current assumption |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

Assumptions Summary – Special Risk Class Males

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|--|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 90.9% | 10% White collar/90% Blue collar generational, Scale BB; slightly lower life expectancy than current |
| Member Salary Increase | Age & service based; average annual increase for 30 year old hire who works 25 years of 6.4% | Service based; lower increases, especially at lower service levels; average increase of 5.5% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 290 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: 11% grading to 39% ages 45-52, near 35% ages 52-54, 18% at age 55 Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 23%-30% to age 50; 40-50% ages 51-54; 29% at ages 55 |
| Immediate Retirement* | Between 2%-10% at all ages from 45-55 | 4% at ages 45-46; 7% at ages 47-54; 6% at age 55 |
| Deferred Retirement* | 3%-5% to age 60; near 15% ages 61-74; 25% thereafter | 3%-5% to age 59, 7%-9% at ages 60-61; 20-25% ages 62-69; 100% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 2.1% (age 30) to 1.8% (age 55) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; markedly lower rates than current assumption |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience; slightly lower rates than current assumption |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

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Assumptions Summary – Elected Officers’ Class Females

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 56.7% | White collar generational, Scale BB, generally slightly higher life expectancy than current |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 4.2% | Service based; lower increases, especially at lower service; average increase of 4.0% (J, ECO); 5.1% (ECO) |
| Unused Leave | 139 hours at time of retirement/DROP entry | 230 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: 10% at ages 45-49, near 25% at ages 50-60, near 17% at ages 61-62 Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 30% at age 48, increasing by 2.5% per year through age 61; 50% at age 62; 15% thereafter |
| Immediate Retirement* | 3%-4% to age 59; 3%-10% at ages 60-69; near 12% at ages 70-76; 3.5% thereafter | 10% at all ages, starting at age 48 |
| Deferred Retirement* | 1%-6% to age 59; 7%-11% at ages 60-65; 5%-8% at ages 66-69; near 13% thereafter | 5% at ages 48-61; 15% at age 62; 11% at ages 63-64; 15% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 4.2%/10.8%/2.9% (age 30 ECO/ESO/J) to 2.4%/7.3%/1.4% (age 65 ECO/ESO/J) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

Assumptions Summary – Elected Officers’ Class Males

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 82.4% | 50% White collar/50% Blue collar generational, Scale BB; slightly higher future mortality improvement |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 4.2% | Service based; lower increases, especially at lower service; average increase of 4.0% (J, ECO); 4.6% (ECO) |
| Unused Leave | 139 hours at time of retirement/DROP entry | 230 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: near 16% at ages 45-54; near 25% at ages 55-64; near 13% thereafter Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 30% at age 48, increasing by 2.5% per year through age 61; 50% at age 62; 15% thereafter |
| Immediate Retirement* | 2%-8% to age 63; 16% at ages 64-69; 20% thereafter | 10% at all ages, starting at age 48 |
| Deferred Retirement* | 1%-2% to age 59; 5%-10% at ages 60-69; near 15% thereafter | 5% at ages 48-61; 15% at age 62; 11% at ages 63-64; 15% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 5.7%/6.7%/2.0% (age 30 ECO/ESO/J) to 3.5%/4.2%/0.7% (age 65 ECO/ESO/J) | Retain current assumption |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |

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Assumptions Summary – Senior Mgmt Svc Class Females

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 56.7% | White collar generational, Scale BB, generally slightly higher life expectancy than current |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 5.4% | Service based; lower increases, especially at lower service levels; average increase of 4.6% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 290 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: near 25% at ages 45-53; near 35% at ages 54-61; 30% at age 62 Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 30% at age 48, increasing by 2.5% per year through age 61; 50% at age 62; 15% thereafter |
| Immediate Retirement* | 9%-14% to age 59; 21% at ages 60-62; 10-19% at ages 63-67; 12% thereafter | 5% to age 57, 10% at ages 58-62; 5% thereafter |
| Deferred Retirement* | 6%-11% to age 59; 11%-21% at ages 60-69; near 17% thereafter | 5% to age 61; 15% at age 62; 11% at ages 63-64; 15% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 3.9% (age 30) to 1.9% (age 65) | Similar to current assumption, except decrease rates for short service employees based on recently observed experience; |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

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Assumptions Summary – Senior Mgmt Svc Class Males

| Category | Current Assumption | Proposed Assumption |
|-------------------------------|--|---|
| Non-Disabled Mortality | White collar generational, Scale AA, multiplied by 82.4% | 50% White collar/50% Blue collar generational, Scale BB; slightly higher future mortality improvement |
| Member Salary Increase | Age & service based; average annual increase for 35 year old hire who works 30 years of 5.7% | Service based; lower increases, especially at lower service levels; average increase of 4.4% |
| Unused Leave | 139 hours at time of retirement/DROP entry | 290 hours at time of retirement/DROP entry |
| DROP Entry* | GASB: near 25% at ages 45-53; near 38% at ages 54-61; 25% at age 62 Funding: half of the above rates (artificially depressed) | Both GASB & Funding: 30% at age 48, increasing by 2.5% per year through age 61; 50% at age 62; 15% thereafter |
| Immediate Retirement* | 12%-17% to age 60; 25-33% at ages 61-62; 10-23% at ages 63-67; 12% thereafter | 5% to age 57, 10% at ages 58-62; 5% thereafter |
| Deferred Retirement* | 10%-12% to age 59; 13%-22% at ages 60-69; near 18% thereafter | 5% to age 61; 15% at age 62; 11% at ages 63-64; 15% thereafter |
| Termination of Employment | Age & service based; rates for 10+ years of service range from 4.1% (age 30) to 2.6% (age 65) | Similar to current assumption, except decrease rates for short service employees based on recently observed experience; |
| Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |
| Non-Duty Disability Incidence | Social Security Study 74 table; scaled to match pre-2008 FRS experience | Custom table from FRS-specific experience consistent with table used for Regular class members |

*Rates are shown for Tier I. Tier II rates are equivalent, except where modified to reflect differing age/service requirements for retirement.

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2014 Florida Retirement System Actuarial Assumptions Conference

September 24, 2014

Presented by:

Robert Dezube, FSA

Matt Larrabee, FSA



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Agenda

- Introduction
- Preliminary 2014 FRS pension valuation results
- Discussion and identification of methods and assumptions for:
 - Actuarial cost allocation method
 - Inflation assumption
 - Investment return assumption
- Health Insurance Subsidy (HIS)
- National Guard Supplemental Retirement Benefit
- Investment return assumption for HIS and Guard valuations
- Wrap-up

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Introduction

Overview of an Actuarial Valuation

- A valuation of FRS is conducted annually to:
 - Calculate funded status
 - Develop actuarially calculated contribution rates
 - Assist FRS and employers with GASB financial reporting

Data

Assumptions

Methods

Provisions



Projected
Benefit
Payments



Actuarially
Calculated
Contribution
Rates

Funded
Status

2014 Actuarial Valuation Cycle

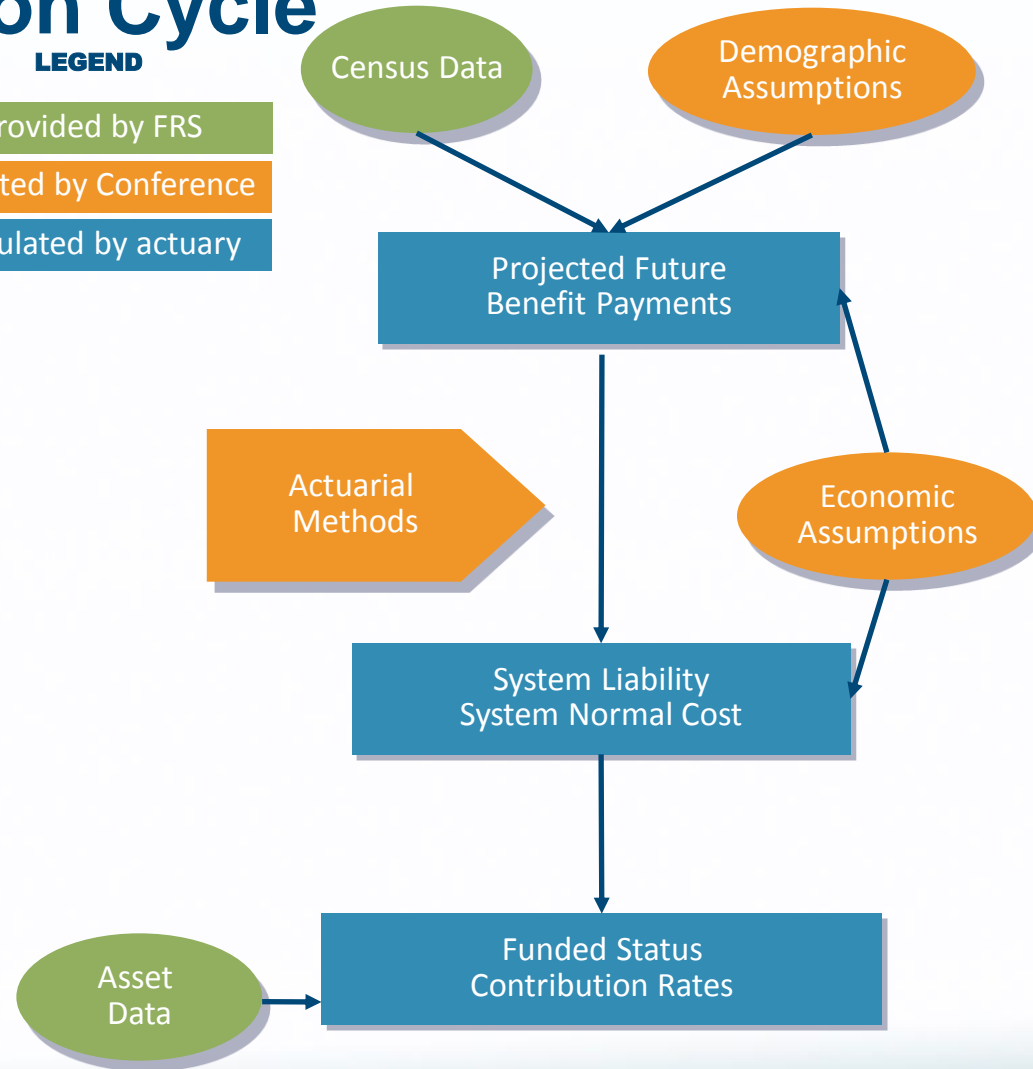
- August 11: Guidance from FRS Actuarial Assumptions Conference Principals
- September 8: Completion of detailed experience study report including any changes adopted by Conference
- Today: Discussion of preliminary valuation results and quantification of any policy alternatives with Conference
- December 1: Completion of valuation report, including actuarially calculated contribution rates

LEGEND

Provided by FRS

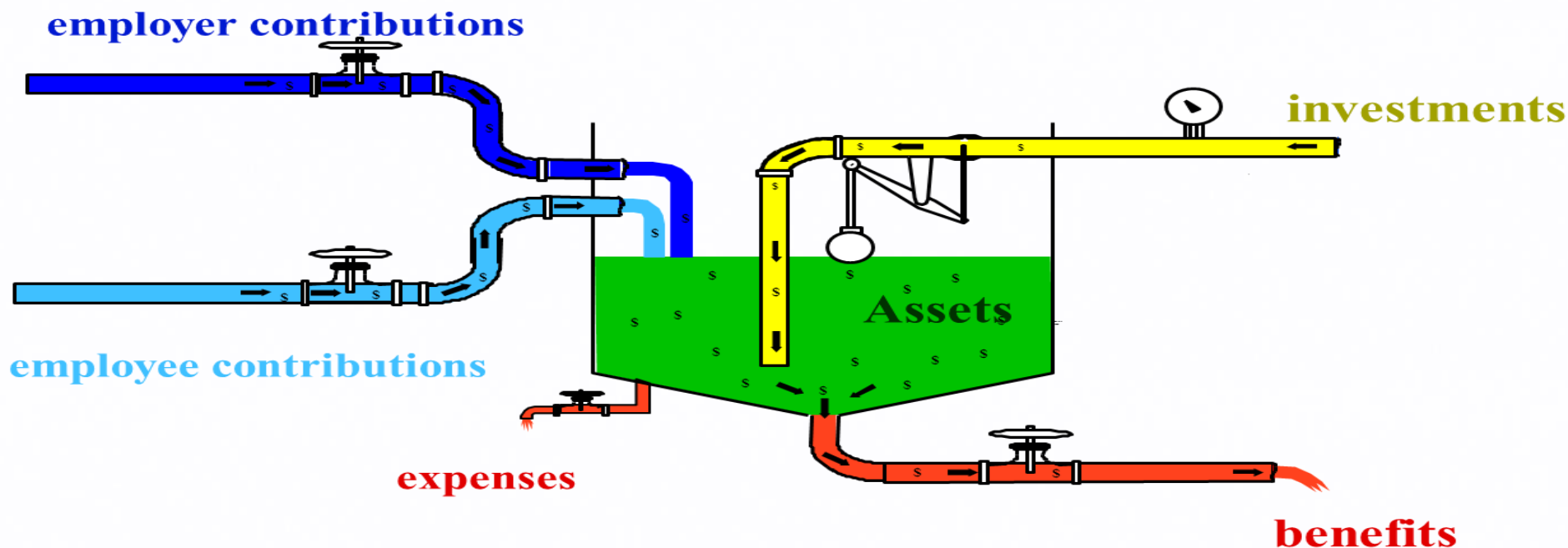
Adopted by Conference

Calculated by actuary



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Guidance in Setting Methods & Assumptions



- Methods & assumptions do not determine ultimate long-term System cost
 - They only affect the budget timing of cost incurrence
- Ultimately, ***Contributions + Investments = Benefits + Expenses***

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Guidance Needed from Today's Meeting

- To finalize the 2014 valuation of FRS, identification of the following methods and assumptions are needed from the Conference at today's meeting:

Actuarial cost allocation method

Future long-term average annual inflation assumption

Future long-term average annual investment return assumption

Preliminary 2014 FRS Pension Valuation Results

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Preliminary 2014 Valuation Results

- This section shows preliminary, system average results
 - Based on July 1, 2014 financial and demographic census information provided to us by the Division of Retirement
- Final valuation results will be published by December 1, and will be based on methods and assumptions approved today (and previously in August) by the Conference
- Some methods and assumptions are not yet selected, so results sets are shown for several method/assumption combos

To help compare results sets, we use a results template with a number of key actuarial terms of art

Results Template - Actuarial Terms of Art

AL: Actuarial Liability

- The net present value of total projected payments allocated to prior service by the actuarial cost allocation method

AVA: Actuarial Value of Assets

- A smoothed asset value that recognizes annual deviations in investment performance from the long-term assumption systematically over time
- Fair market value is \$11.3 billion above AVA as of July 1, 2014

UAL: Unfunded Actuarial Liability

- The difference between actuarial liability (AL) and actuarial value of assets (AVA)

Results Template - Actuarial Terms of Art

FS: Funded Status

- The ratio of actuarial value of assets (AVA) to actuarial liability (AL), stated as a percentage

NCR: Normal Cost Rate (net employer-paid portion)

- The economic value of the employer-paid portion of projected retirement benefits allocated to the current year of service by the actuarial cost allocation method
- NCR shown is the average for active members who have not entered the DROP

Results Template - Actuarial Terms of Art

UALR: Unfunded Actuarial Liability (UAL) Rate

- Portion of the actuarially calculated contribution rate intended to eliminate UAL over a specified amortization period if full contributions are made and future experience follows assumption
- UALR is shown as the average across all payrolls upon which it is charged, including DROP payroll

Results Template - Actuarial Terms of Art

NCR+UALR: The sum of Normal Cost Rate and UAL (Unfunded Actuarial Liability) Rate

- A proxy for the total employer-paid portion of the actuarially calculated contribution rate for the 2015–2016 year
- The proxy is imperfect because:
 - The payrolls on which Normal Cost Rates and UAL Rates are charged have significant overlap, but are not identical
 - Normal Cost Rates and UAL Rates developed in the actuarial valuation are blended with Investment Plan (IP) rates to develop statutory rates, with that blending taking place after the valuation is completed

Valuation Results – 2013 & 2014 Baseline

- In August, the Conference adopted several recommendations to update actuarial assumptions based on Milliman’s review of 2008-2013 demographic experience
- Before reviewing the effects of those assumption updates, the next slide shows the “2014 Baseline” valuation results
 - 2014 Baseline calculates liabilities as of July 2014 using the methods and assumptions from the 2013 valuation
 - This calculation is done to check for any surprising liability changes driven by demographic census data
 - Changes in liability for 2013-2014 demographic experience varying from 2013 valuation assumptions is incorporated into 2014 Baseline results

| | 2013 Final (2013 data; 2013 assumptions) | 2014 Baseline (2014 data; 2013 assumptions) |
|------------|--|---|
| AL | \$ 153.3 | \$158.3 |
| AVA | <u>\$ 131.7</u> | <u>\$138.6</u> |
| UAL | \$ 21.6 | \$19.7 |
| FS | 85.9% | 87.6% |
| NCR | 4.67% | 4.70% |
| UALR | <u>4.54%</u> | <u>4.19%</u> |
| NCR + UALR | 9.21% | 8.89% |

2013 Final results shown are liabilities and rates calculated for funding purposes; results for GASB financial reporting differed

Results shown in this slide are based on the 4.00% System payroll growth and 3.00% inflation assumptions used in the 2013 valuation

Strong 2013-2014 investment performance increased AVA
2014 Baseline analysis indicated no surprising AL changes stemming from 2014 updates to demographic census data

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2014 Results with Assumption Updates

- Key assumption recommendations approved by the Conference in August included updates to:
 - Mortality
 - Timing of retirement or DROP entry
 - Incidence of disability
 - Assumed annual leave available at time of retirement
 - Payroll growth assumption (3.25% was selected)
- In addition, the Conference approved the recommendation to eliminate the use of artificially depressed rates for the incidence of DROP entry in System contribution rate calculations

2014 Results – TBD Methods & Assumptions

- In addition to the assumptions approved on the prior slide, the following methods and assumptions remain to be selected by the Conference

Cost allocation method

Inflation assumption

Investment return assumption

- Results for 2013 Final, 2014 Baseline (prior to any assumption and method updates but after reflecting updated 2014 demographic census data), and one possible set of the above methods and assumptions are on the next slide
- The effects of modifying each method or assumption above will be presented in the subsequent three sections

2013 Final results shown are liabilities and rates calculated for funding purposes; results differed for GASB financial reporting

| | | | |
|----------------------|----------------------|----------------------|----------------------|
| Current Ultimate EAN | Current Ultimate EAN | Current Ultimate EAN | Cost Method |
| 3.00% Inflation | 3.00% Inflation | 2.50%* Inflation | Inflation Assumption |
| 7.75% Inv. Return | 7.75% Inv. Return | 7.75% Inv. Return | Investment Return |

| (Amounts in \$ billions) | 2013 Final (2013 data; 2013 assumptions) | 2014 Baseline (2014 data; 2013 assumptions) | 2014 Updates* (2014 data; 2014 assumptions) | Effect of Updates |
|--------------------------|--|---|---|-------------------|
| AL | \$ 153.3 | \$158.3 | \$157.4 | -\$0.9 |
| AVA | <u>\$ 131.7</u> | <u>\$138.6</u> | <u>\$138.6</u> | <u>\$0.0</u> |
| UAL | \$ 21.6 | \$19.7 | \$18.8 | -\$0.9 |
| FS | 85.9% | 87.6% | 88.1% | +0.5% |
| NCR | 4.67% | 4.70% | 3.86% | -0.84% |
| UALR | <u>4.54%</u> | <u>4.19%</u> | <u>4.31%</u> | <u>0.12%</u> |
| NCR + UALR | 9.21% | 8.89% | 8.17% | -0.72% |

* "2.50% inflation" signifies 3.25% payroll growth & individual member salary increases presented in August

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Actuarial Cost Allocation Method

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Use of Actuarial Methods

- Actuarial methods allocate the net present value of the projected benefit payments between past and projected future service, which establishes funded status
 - Calculations are done on a budgeting assumptions basis
- Methods selected, when combined with assumptions, also develop the pattern of projected contribution rates

Data

Assumptions

Methods

Provisions



Projected
Benefit
Payments



Actuarially
Calculated
Contribution
Rates

Funded
Status

Entry Age Normal Cost Allocation Method

- The division of the present value of a member's total projected benefit payments (PVB) between prior, current and future service is done by using an actuarial cost allocation method
- Actuarial cost allocation method does not impact total PVB
- Entry Age Normal (EAN), which sets normal cost rate (NCR) as a level percent of pay over a member's full projected working career, has two common variations
 - Ultimate EAN (currently used by FRS)
 - Individual EAN (most commonly used by systems)

New GASB standards mandate use of Individual EAN for financial reporting calculations for the System and its employers

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Ultimate EAN Cost Allocation Method

- Ultimate EAN, has two different calculation interpretations
- The current interpretation allocates Normal Costs for Tier I members over a projected future service period based on Tier II benefit levels and Tier II retirement timing assumptions
- An alternative interpretation allocates costs for Tier I members over a projected future service period based on Tier II benefit levels and Tier I retirement timing assumptions
- Normal Cost Rate (NCR) is the same in both interpretations
- The alternative interpretation has higher Actuarial Liability (AL) as less of PVB is allocated to the future and more to the past

Individual EAN Cost Allocation Method

- Under Individual EAN, Normal Costs for Tier I members are allocated over a projected future service period based on Tier I benefit levels and Tier I retirement timing assumptions
- Compared to Ultimate EAN, Individual EAN produces:
 - Higher Normal Cost
 - Lower Actuarial Liability

Individual EAN vs. Ultimate EAN Comparison

| | Individual EAN | Ultimate EAN |
|---|---|---------------|
| Benefit Level Basis for Normal Cost Rate | Actual tier associated with enrollment date | Tier II |
| Present Value of Future Normal Costs (PVFNC) | Higher | Lower |
| Total Present Value of Projected Benefits (PVPB) | Same | Same |
| Actuarial Liability (= PVPB minus PVFNC) | Lower | Higher |
| Change in System Average Normal Cost Rate Over Time | Drifts down as Tier IIs replace Tier Is | Remains level |

Individual EAN vs. Ultimate EAN Comparison

- When a 30-year UAL amortization is used, Ultimate EAN produces lower near-term contribution rates than Individual EAN
 - The differences in near-term rates would lessen if the amortization period was closer to the projected expected remaining service of active members
- Methods and assumptions do not affect ultimate long-term cost
 - In comparing two methods, a method that produces lower near-term rates will produce higher comparative rates in later years

Cost Allocation Method Wrap-Up

- The next slide illustrates the effects of:
 - 2013 valuation interpretation of Ultimate EAN
 - The alternative interpretation of Ultimate EAN
 - Individual EAN (mandated for GASB reporting)

Current
Ultimate EAN

Alternative
Ultimate EAN

Individual
EAN

We recommend the Conference select either the alternative interpretation of Ultimate EAN or Individual EAN

Of those two options, Alternative Ultimate EAN may be the better fit, given the “DB or DC choice” benefit structure

| | | | | |
|----------------------|----------------------|----------------------|--------------------------|-------------------|
| Cost Method | Current Ultimate EAN | Current Ultimate EAN | Alternative Ultimate EAN | Individual EAN |
| Inflation Assumption | 3.00% Inflation | 2.50% Inflation | 2.50% Inflation | 2.50% Inflation |
| Investment Return | 7.75% Inv. Return | 7.75% Inv. Return | 7.75% Inv. Return | 7.75% Inv. Return |

2014 UALRs based on a 3.25% System payroll growth assumption

(Amounts in \$ billions)

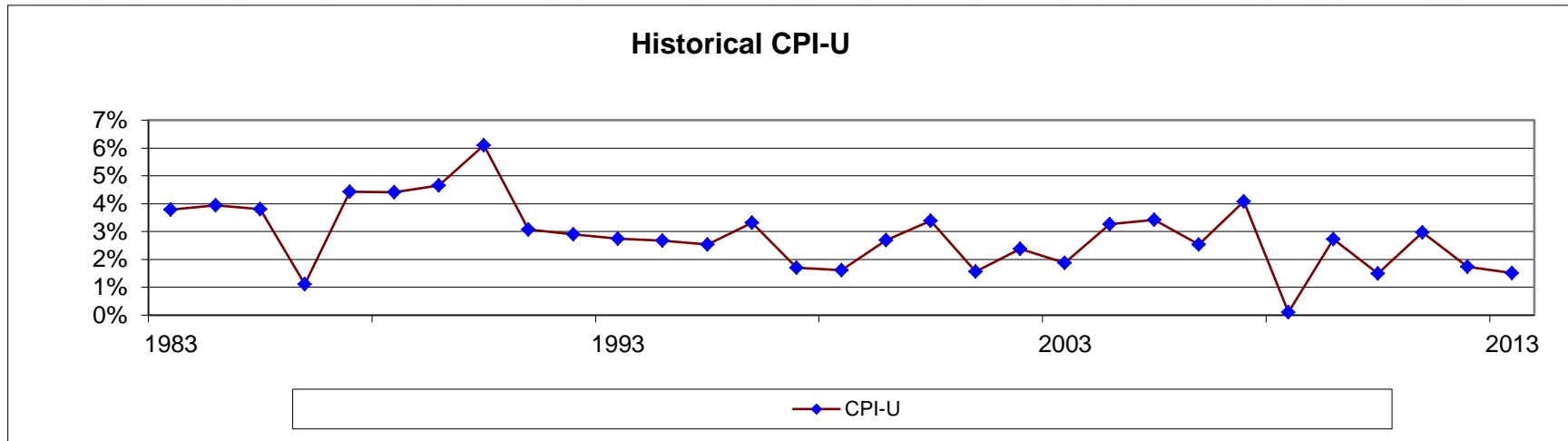
| | 2013 Final | 2014 Current Ultimate | 2014 Alternative Ultimate | 2014 Individual Entry Age |
|------------|-----------------|-----------------------|---------------------------|---------------------------|
| AL | \$ 153.3 | \$157.4 | \$157.9 | \$154.1 |
| AVA | <u>\$ 131.7</u> | <u>\$138.6</u> | <u>\$138.6</u> | <u>\$138.6</u> |
| UAL | \$ 21.6 | \$18.8 | \$19.3 | \$15.5 |
| FS | 85.9% | 88.1% | 87.8% | 89.9% |
| NCR | 4.67% | 3.86% | 3.86% | 6.16% |
| UALR | <u>4.54%</u> | <u>4.31%</u> | <u>4.43%</u> | <u>3.55%</u> |
| NCR + UALR | 9.21% | 8.17% | 8.29% | 9.71% |

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Inflation Assumption

Economic Assumptions

Inflation



- Inflation assumption affects all other economic assumptions, including investment return, payroll growth, and individual member pay increases
- Over the past 30 years average inflation has been 2.82%, while over the past 15 years the average was 2.38% (calculated as a geometric annual average)

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Economic Assumptions

Inflation

- TIPS yields give a market estimate of future inflation
- Current market outlooks:
 - 2.30%: HEK/SBA
 - 2.50%: Milliman
- Social Security's intermediate long-term assumption is 2.70% which when combined with its lower near-term assumption, produces a 30-year average of 2.60%
- An inflation assumption of 3.00% was used in the prior valuation

| As of 7/31/2014 | 30-Year |
|----------------------|---------|
| Treasury Yield | 3.32% |
| TIPS Yield | 0.96% |
| Break-even Inflation | 2.34% |

Inflation's Effect on Actuarial Liability

- The assumptions for individual member salary increase were developed using a building block approach, with inflation as one of the building blocks
- If the inflation assumption is raised, the individual member salary increase assumption also moves up and the Actuarial Liability (AL) associated with active members increases
- The next slide shows preliminary valuation results under both 2.50% and 2.75% inflation assumptions

2014 UALRs based on a 3.25% System payroll growth assumption

| | | |
|----------------------|--------------------------|--------------------------|
| Cost Method | Alternative Ultimate EAN | Alternative Ultimate EAN |
| Inflation Assumption | 2.50% Inflation | 2.75% Inflation |
| Investment Return | 7.75% Inv. Return | 7.75% Inv. Return |

| (Amounts in \$ billions) | 2013 Final | 2014 2.50% Inflation | 2014 2.75% Inflation |
|--------------------------|-----------------|----------------------|----------------------|
| AL | \$ 153.3 | \$157.9 | \$158.7 |
| AVA | <u>\$ 131.7</u> | <u>\$138.6</u> | <u>\$138.6</u> |
| UAL | \$ 21.6 | \$19.3 | \$20.1 |
| FS | 85.9% | 87.8% | 87.3% |
| NCR | 4.67% | 3.86% | 4.06% |
| UALR | <u>4.54%</u> | <u>4.43%</u> | <u>4.62%</u> |
| NCR + UALR | 9.21% | 8.29% | 8.68% |

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Investment Return Assumption

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Investment Return Assumption

- The investment return assumption and principles to consider in setting it were discussed in our August presentation
- Today's presentation recaps 30-year average annual returns from the Milliman and HEK/SBA capital market outlook models that were previously presented in August
 - Today's Milliman speakers are not credentialed investment professionals

Milliman Investment Return Model

- Based on current FRS target asset allocation
- Model results in table are geometric annual average net returns, stated as nominal returns, rounded to the nearest 0.1%

| Percentile | 30-Year Average |
|------------------------|-----------------|
| 65 th | 7.7% |
| 60 th | 7.4% |
| 55 th | 7.2% |
| 50th | 6.9% |
| 45 th | 6.6% |
| 40 th | 6.3% |
| 35 th | 6.0% |

- Milliman model is based on a series of average annual real returns by asset class, plus asset class correlations
- Based on 2.50% inflation assumption and 0.25% deduction for plan expenses
- Model single-year arithmetic mean nominal return is 7.56%
- Model 50th percentile real return (net of inflation) is approximately 4.3%

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HEK/SBA Investment Return Model

- The HEK model is developed on a real return (i.e., return in excess of inflation) basis

Investment Policy Statement currently has a long-term goal of 5% real return (net of expense)

- Asset allocation policy is shaped to achieve this goal, using annual updates of assumptions and asset-liability analysis over 15 future years
- Current HEK/SBA assumptions show a 5% real return has more than a 50% probability (51% over 15 years, 54% over 30 years)
- On that basis nominal net returns in the HEK/SBA model are 7.66% over 30 years (based on a 2.3% inflation assumption)

Implied Real Return vs. 5% Real Return Target

- The table below shows implied real returns for the requested investment return and inflation assumption combinations

| | | |
|-------|-------|-------|
| | 2.75% | 2.50% |
| 7.65% | 4.77% | 5.02% |
| 7.75% | 4.87% | 5.12% |

- The prior valuation's assumptions imply an assumed average annual 4.61% real return long-term, and have a degree of conservatism with respect to the 5% target
 - Options modeled above reduce or eliminate the conservatism
- A degree of conservatism can be useful in that it can reduce and/or mitigate the System's exposure to downside investment risk

Effects of Lowering the Return Assumption

- A lower investment return assumption produces higher calculated Actuarial Liability, higher Normal Cost and, hence, higher near-term actuarially calculated contribution rates
 - A reduction in the assumption tilts the expected balance of the fundamental cost equation away from investment earnings and toward contributions
- A lower assumption lessens the potential for a pattern of increasing contribution rates in future years
 - Actual investment results determine ultimate long-term System cost, so, all else being equal, contribution rates:
 - Go up if investments underperform assumption
 - Go down if investments outperform assumption

2014 UALRs
based on a
3.25% System
payroll growth
assumption

| Cost Method | Alternative Ultimate EAN | Alternative Ultimate EAN | Alternative Ultimate EAN | Alternative Ultimate EAN |
|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Inflation Assumption | 2.50% Inflation | 2.50% Inflation | 2.75% Inflation | 2.75% Inflation |
| Investment Return | 7.75% Inv. Return | 7.65% Inv. Return | 7.75% Inv. Return | 7.65% Inv. Return |

| (Amounts in \$ billions) | 2013 Final | 2014 7.75%/2.50% | 2014 7.65%/2.50% | 2014 7.75%/2.75% | 2014 7.65%/2.75% |
|--------------------------|--------------|------------------|------------------|------------------|------------------|
| AL | \$ 153.3 | \$157.9 | \$159.8 | \$158.7 | \$160.7 |
| AVA | \$ 131.7 | \$138.6 | \$138.6 | \$138.6 | \$138.6 |
| UAL | \$ 21.6 | \$19.3 | \$21.2 | \$20.1 | \$22.1 |
| FS | 85.9% | 87.8% | 86.7% | 87.3% | 86.2% |
| NCR | 4.67% | 3.86% | 4.02% | 4.06% | 4.23% |
| UALR | <u>4.54%</u> | <u>4.43%</u> | <u>4.82%</u> | <u>4.62%</u> | <u>5.02%</u> |
| NCR + UALR | 9.21% | 8.29% | 8.84% | 8.68% | 9.25% |

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Florida Health Insurance Subsidy

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Summary of Health Insurance Subsidy Benefit

- The monthly Health Insurance Subsidy (HIS) benefit is equal to \$5 per year of service, with a minimum of \$30 and a maximum of \$150
- The HIS benefit is paid to retirees and surviving beneficiaries of the FRS Pension Plan and the FRS Investment Plan who maintain health insurance coverage
- Employers contribute 1.26% (effective July 1, 2014) of most payroll into a trust fund to pay HIS benefits

Assumptions for HIS Valuation

- Milliman used the following assumptions in the prior valuation:
 - Percent of active and terminated vested members electing coverage at retirement: 95%
 - Percent of retiring members electing a joint & survivor option (Pension Plan) or a spousal right (Investment Plan): 30%
 - Investment Plan members will retire at the same rates as Pension plan members in the same membership class
 - No increase in the current level of HIS benefits
- These assumptions were combined with the relevant assumptions approved for the 2014 FRS pension valuation

We are not recommending any changes to these assumptions

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Comments on Preliminary Valuation Results

- Preliminary valuation results indicate that:
 - Projected payments continue to exceed projected contributions based on current statutory funding levels, leading to annual net negative cash flow
 - The magnitude of annual net negative cash flow is projected to increase for an extended period, whether stated as a dollar amount (non-inflation-adjusted dollars) or as a rate of applicable payroll
- Given the pay-as-you-go nature of the current funding structure, payments and contributions are sensitive to retirement and payroll growth patterns
- Suggested rates will be part of our final valuation report

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Florida National Guard Supplemental Retirement Benefit

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Summary of National Guard Benefit

- The program was enacted in 1921, but we are not aware of any prior actuarial valuations of the program
- Only Guard retirees who meet specified eligibility criteria receive benefits, and those benefits may not commence prior to age 60
 - Eligibility criteria include a minimum of 30 years of service
- The benefit is equal to 50% of the base salary of the highest rank attained while serving in the Florida National Guard less any retirement pay received from the federal government for military service while a member of the Florida National Guard

Current Program Funding Structure

- The program is currently funded on a pay-as-you-go basis, with the state annually appropriating the expected benefit amount
- The state contributed \$14.4 million in 2013-2014 to pay the benefits for 787 retirees and \$16.5 million is budgeted for 2014–2015

Assumptions Specific to National Guard

- At this time, we have not received census information
- When that information is received, Milliman will develop demographic and economic assumptions (e.g., rates of retirement, annual salary increases, etc.)
 - The assumptions so developed will reflect, as appropriate, previously approved FRS assumptions and/or Federal Retirement Plan assumptions as National Guard benefits are tied to federal pay levels and retirement benefits

Investment Return Assumption for HIS and National Guard Valuations

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Investment Return Assumption

- Currently, HIS and National Guard are effectively funded on a pay-as-you-go basis
- Incoming standards (GASB 67 & 68) give specific direction on the investment return assumption to be used for financial reporting of plans funded on a pay-as-you-go basis
 - The assumption should reflect an index of 20-year, tax-exempt, high-quality (AA/Aa or higher) general obligation municipal bonds
 - The assumption selected should be based on market conditions as of the date of the financial reporting in question

Investment Return Assumption

- The needed assumption is solely for GASB-mandated financial reporting
- GASB does not require a specific index
- Two options to consider are:
 - Bond Buyer General Obligation 20-Bond Municipal Bond Index
 - S&P Municipal Bond 20-Year High-Grade Index

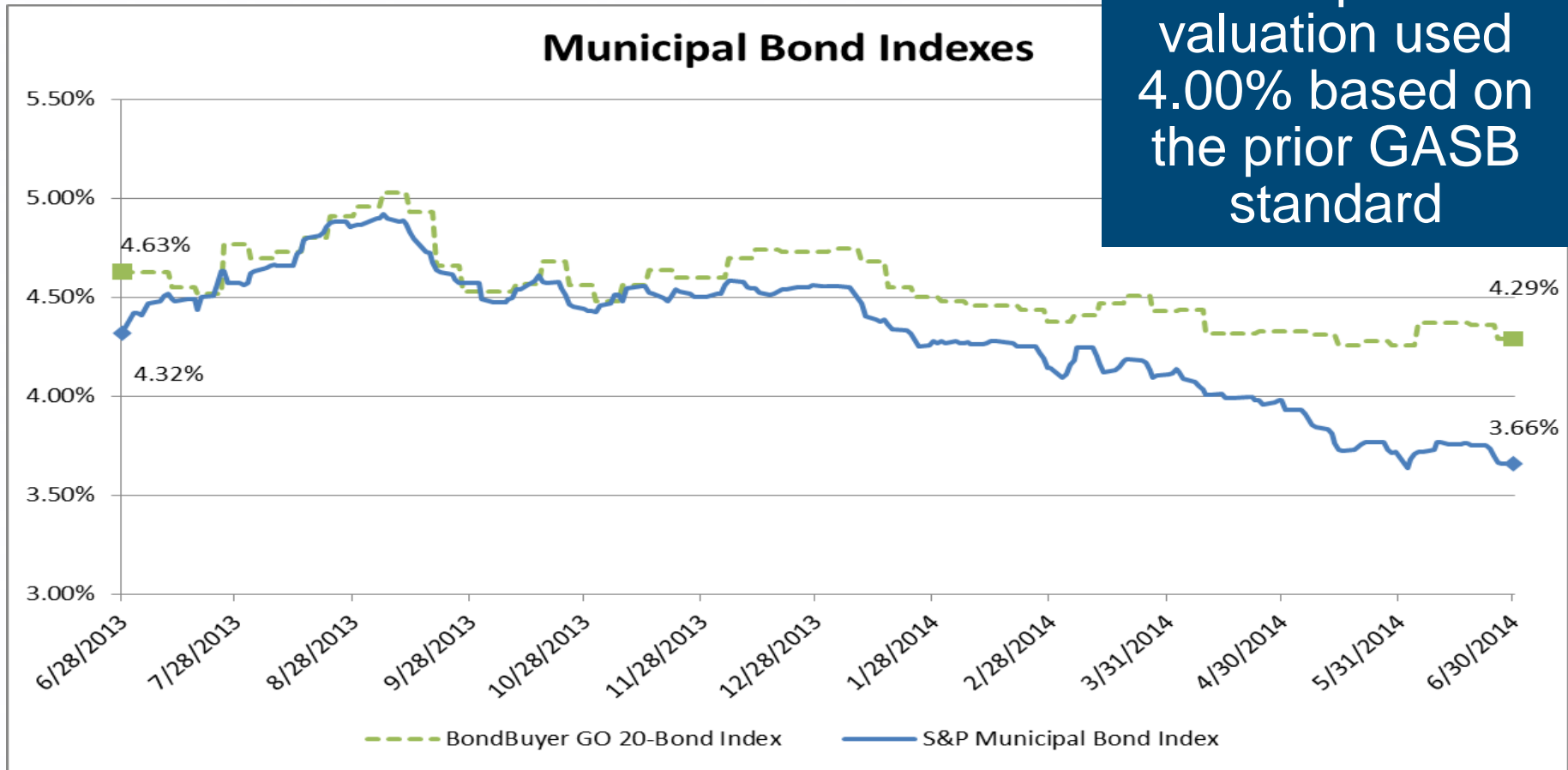
Bond Buyer Index

- Bond Buyer says its index:
 - *“consists of 20 general obligation bonds that mature in 20 years. The average rating...is roughly equivalent to Standard & Poor’s Corp’s AA...The index represents theoretical yields rather than actual price or yields quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the index would yield if the bond was sold at par value. The index is a simple average of the average estimated yields.”*
- Strengths: 20-year tax-exempt, general obligation bonds
- Weaknesses: Based on estimates instead of market prices; not published daily; not investable; individual bonds in index are below the average rating; number of bonds in index could lead to volatility

Standard & Poor's Index

- S&P says its index:
 - *“consists of bonds in the S&P Municipal Bond Index with a maturity of 20 years. Eligible bonds must be rated at least AA by Standard and Poor's Rating Services, Aa2 by Moody's or AA by Fitch. If there are multiple ratings, the lowest rating is used.”*
- Strengths: Daily valuation based on market prices; investable; each individual bond in index meets rating requirements, which should lower index volatility
- Weaknesses: Not based exclusively on general obligation bonds

Comparison of Bond Indices



The prior valuation used 4.00% based on the prior GASB standard

We need an assumption identified by the Conference for the 2014 valuations of HIS and National Guard

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Wrap-Up

Guidance Needed from Today's Meeting

- To finalize the 2014 valuation of FRS, identification of the following methods and assumptions are needed from the Conference at today's meeting:

Actuarial cost allocation method

Future long-term average annual inflation assumption

Future long-term average annual investment return assumption

- We also need identification of the investment return assumption to use for the 2014 valuations of the HIS and National Guard programs
 - The needed assumption is solely for GASB-mandated financial reporting

Looking Forward

- All methods and assumptions approved will be used in the 2014 actuarial valuation of FRS which will determine actuarially calculated contribution rates for July 2015 through June 2016
- The approved methods and assumptions will also be used for the 2014 valuations of HIS and Florida National Guard, as applicable

Thanks for your time and attention this morning

Appendix

This work product was prepared solely for the Department of Management Services for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Milliman Capital Market Outlook Assumptions

For assessing the expected portfolio return under Milliman’s capital market assumptions, we considered the FRS to be allocated among the model’s asset classes as shown below. This allocation is based on our understanding of the most recently revised target allocation policy, titled “*Fixed Income to GE, RE, PE, SI (6%)*” as provided to us by email on July 22, 2014.

| | Policy | Annual | Annualized | Annual |
|---|-------------------|-------------------|-------------------|------------------|
| | Allocation | Arithmetic | Geometric | Standard |
| | | Mean | Mean | Deviation |
| Cash | 1.0% | 3.01% | 3.00% | 1.65% |
| Intermediate-Term Bonds | 18.0% | 4.07% | 3.95% | 5.15% |
| High Yield Bonds | 3.0% | 6.69% | 6.15% | 10.95% |
| Broad US Equities | 26.5% | 8.41% | 6.85% | 18.90% |
| Developed Foreign Equities | 21.2% | 8.56% | 6.75% | 20.40% |
| Emerging Market Equities | 5.3% | 11.48% | 7.50% | 31.15% |
| Private Equity | 6.0% | 11.70% | 8.00% | 30.00% |
| Hedge Funds / Absolute Return | 7.0% | 5.71% | 5.25% | 10.00% |
| Real Estate (Property) | 12.0% | 7.01% | 6.25% | 13.00% |
| US Inflation (CPI-U) | | | 2.50% | 2.00% |
| Fund Total (reflecting asset class correlations) | 100.0% | 7.56% | 6.89% | 12.08% |

* Returns reflects 0.25% reduction for System expenses.

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Actuarial Basis

Data

We have based our preliminary valuation of the FRS and HIS on the demographic census and financial data as of July 1, 2014 supplied by the Florida Division of Retirement (Division). The data was not independently audited by Milliman. The census data used will be as summarized in our forthcoming formal valuation reports as of July 1, 2014 for FRS and HIS, respectively.

FRS assets as of June 30, 2014, measured on a fair market value basis for valuation purposes (e.g., including the value of assets in the Accrued DROP liability) are calculated as \$149.9 billion, based on information provided to by the Division.

Methods / Policies

Actuarial Cost Method: For FRS pension: the three methods detailed in this presentation. For HIS: Individual Entry Age Normal, applied in a manner consistent with recently published GASB standards.

UAL Amortization: The UAL for FRS is currently amortized as a level percentage of projected applicable payroll over a closed period. Any additional UAL that arises each year from variations from, or changes to, the assumptions used for determination of actuarially calculated employer calculation rates is amortized over a 30 year period.

Actuarial Value of Assets: For FRS, the asset smoothing method as described in the *FRS Actuarial Valuation as of July 1, 2013*. The method used is consistent with applicable statutes. For HIS, assets are valued on a fair market basis as reported to us by the Division.

Assumptions

For the FRS pension valuation, all assumptions are as described in our *FRS 2014 Experience Study* and/or this presentation. The same assumptions, as applicable, were also used for the HIS valuation results presented herein.

Provisions

FRS provisions valued are as described in the *FRS Actuarial Valuation as of July 1, 2013*. HIS provisions valued are as described in the *HIS Actuarial Valuation as of July 1, 2012*.

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Caveats and Disclaimers

This presentation discusses preliminary valuation results as of July 1, 2014 of the Florida Retirement System (“FRS” or “the System”) and the Florida Health Insurance Subsidy (“HIS”). For the most recent complete actuarial valuation results, including cautions regarding the limitations of use of valuation calculations, please refer to our formal valuation reports as of as of July 1, 2013 for FRS (“the 2013 FRS Valuation Report”) and as of July 1, 2012 for HIS (“the 2012 HIS Valuation Report”). The supporting information regarding provisions valued in those two reports are incorporated by reference into this presentation. The statements of reliance and limitations on the use of this material is reflected in those reports and still apply to this presentation.

In preparing this presentation, we relied, without audit, on information (some oral and some in writing) supplied by Division of Retirement staff, as well as capital market expectations provided by SBA and HEK. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

Milliman’s work product was prepared exclusively for the Department of Management Services for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning FRS’s operations, and uses FRS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman’s work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Any third party recipient of Milliman’s work product who desires professional guidance should not rely upon Milliman’s work product, but should engage qualified professionals for advice appropriate to its own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman’s advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this presentation is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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Florida Retirement System

Actuarial Valuation as of July 1, 2014

Prepared by:

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November 26, 2014

Mr. Dan Drake
State Retirement Director
Division of Retirement
P.O. Box 9000
Tallahassee, FL 32315-9000

Re: **Actuarial Valuation as of July 1, 2014**

Dear Mr. Drake:

We have conducted an annual actuarial valuation of the Florida Retirement System (FRS) as of July 1, 2014, for assessing plan funded status and determining actuarially calculated contribution rates for the July 2015 - June 2016 plan year. The major findings of the valuation are contained in the following report.

Section 1 contains an Executive Summary of the results of our valuation followed by four sections containing detailed information on Assets (Section 2), Liabilities (Section 3), Contributions (Section 4), and Accounting Statements (Section 5). In the Appendices, we provide information regarding actuarial methods and assumptions, a summary of plan provisions, membership statistics, cost projections, comparisons/reconciliation, and a glossary of terms.

All costs and liabilities shown in this report have been determined on the basis of actuarial assumptions and methods set forth in Appendix A. The actuarial assumptions used in performing this valuation have been presented by the actuary and adopted at the September 24, 2014 Actuarial Assumptions Conference based on Milliman's most recent review of the System's experience for the period July 1, 2008 through June 30, 2013. Additional details on that review of System experience can be located in our August 11, 2014 presentation materials to the Actuarial Assumptions Conference Principals and our formal 2014 Experience Study report, which was issued on September 8, 2014.

We believe the assumptions and methods used in this report are reasonable, and the assumptions used both for purposes of developing actually calculated contribution rates and for financial reporting purposes under GASB Statement No. 27 are identical. The accounting calculations for the System's financial reporting and June 30, 2014 CAFR will be conducted under the new GASB Statement No. 67 standard. That GASB 67 information will be issued under separate cover.

The results of this report are dependent upon future experience conforming to the assumptions disclosed in this report. Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.



This work product was prepared solely for the Florida Department of Management Services for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Actuarial computations presented in this report are for purposes of assessing funded status and determining the actuarially calculated contribution rates for the System. Actuarial computations under GASB Statement No. 27 are for purposes of fulfilling financial reporting requirements. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals, and of GASB Statement No. 27. Determinations for purposes other than meeting those requirements referenced in this paragraph may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Division of Retirement. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

This actuarial valuation was prepared and completed by us and those under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate, and in our opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit provision or related expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. To the best of our knowledge, there were no known events that were not taken into account in the valuation.

Milliman's work product was prepared exclusively for the internal business use of Florida Department of Management Services, Division of Retirement, for a specific and limited purpose. It is a complex technical analysis that assumes a high level of knowledge concerning the Florida Retirement System's operations, and uses Division data, which Milliman has not audited. To the extent that Milliman's work is not subject to disclosure under applicable public record laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

- (a) The Division of Retirement may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.
- (b) The Division of Retirement may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

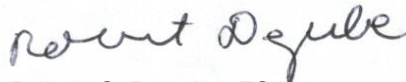
No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with Actuarial Standards of Practice, the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Respectfully submitted,



Robert S. Dezube, FSA
Consulting Actuary, EA #14-3397
RSD/ML/nlo



Matt Larrabee, FSA
Consulting Actuary, EA#14-6154

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1. Executive Summary

This report presents the results of our July 1, 2014 actuarial valuation of the Florida Retirement System (FRS) Defined Benefit Program. This valuation is used to determine actuarially calculated employer contribution rates for the July 1, 2015 – June 30, 2016 plan year. The actual contribution rates paid by participating employers during that year will be determined by Florida Statute. While the System funded status (increased from 85.9% to 86.6%) and System average actuarially calculated employer contribution rates (decreased from 9.21%¹ of pay to 8.99% of pay) showed modest improvement compared to the previous valuation as of July 1, 2013, in our opinion the System is in a markedly improved overall position compared to one year ago. The reasons for that opinion are:

- On a fair Market Value of Assets (MVA) basis, the System's investment performance was markedly above the assumed long-term return. On that basis the calculated return for the July 1, 2013 – June 30, 2014 plan year was 17.54%. That performance, in combination with strong prior performance means that as of July 1, 2014 the MVA is \$11.3 billion higher than the smoothed Actuarial Value of Assets (AVA) used for funded status and contribution rate calculations. That \$11.3 billion not yet recognized investment gain will be systematically recognized over the next several years if investment experience during that period meets or exceeds assumption. Alternatively, if investment experience during that period fails to meet assumption, the not yet recognized gain will serve as a cushion to help mitigate the magnitude of increases in the actuarially calculated employer contribution rate.
- The assumption for long-term average annual future investment return was decreased to a more conservative 7.65% at the 2014 Actuarial Assumptions Conference held on September 24th. The assumption had previously been 7.75%. The assumption change increased the calculated Actuarial Liability by approximately \$2.0 billion and increased the calculated System average Normal Cost Rate by approximately 0.17% of pay. The assumption change increases the likelihood the System will meet or exceed its assumed investment return in future years, and will also serve to lessen the magnitude of contribution rate increases in the event that actual future investment performance fails to meet the assumption.
- A more conservative actuarial cost allocation method was used in this valuation, based on decisions made at the 2014 Assumptions Conference. The method used, which is an alternative interpretation of the Ultimate Entry Age cost allocation method, increased the calculated Actuarial Liability by \$0.5 billion, while not affecting the calculated Normal Cost Rate.
- The methodology used to set the assumption of the likelihood that future members will enter the Deferred Retirement Option Program (DROP) was modified to a markedly more conservative basis in this valuation. In the previous valuation, the DROP entry assumption used for the purposes of determining actuarially calculated employer contribution rates employed a methodology that artificially depressed the assumption. (Further discussion of that methodology is included in both our July 1, 2013 valuation report and our August 11, 2014 presentation materials to the Assumptions Conference Principals.) As approved

¹ Average employer contribution rate of 9.21% as referenced in the September 24, 2014 Actuarial Assumptions Conference presentation is the sum of the Composite Normal Cost rate excluding DROP (4.67%) and the Composite UAL Cost rate including DROP (4.54%) developed in Table IV-11 of the 2013 Actuarial Valuation. The System average normal cost rate used in the presentation intentionally excluded DROP to make a more consistent comparison with 2014 preliminary results, since (effective for the 2014 valuation) the Conference approved the recommendation to eliminate the use of artificially depressed rates for the incidence of DROP entry in the derivation of a "normal cost" rate applicable to current members in DROP. The sum of the 2013 rates including DROP in the Normal Cost component was 9.17%.

by the 2014 Assumptions Conference, in this valuation the artificially depressed rate methodology has been eliminated, and the DROP entry assumption is now modeled based on full recent System experience. In our view, this revised methodology vastly increases the likelihood that future DROP entry experience will meet assumption. This, in turn, will vastly decrease the likelihood of future demographic losses on Actuarial Liability due to DROP entry incidence far in excess of assumption.

- The System's payroll increase assumption was lowered from 4.00% to a more conservative 3.25%, per decisions made at the 2014 Assumptions Conference. System unfunded liabilities are amortized as a level percentage of projected pay. As such, decreasing this assumption increases the UAL Rate component of the actuarially calculated contribution rate, all else being equal.

The most notable result of this year's rate calculations are that the two key rate components, Normal Cost and UAL Cost, changed noticeably, with the changes being in opposite directions at the System average level. Normal Cost decreased from 4.63% of pay to 4.10% of pay, while UAL Cost increased from 4.54% of pay to 4.89% of pay. The sum of Normal Cost plus UAL Cost was a net decrease at the system average level, from 9.17%¹ in the previous valuation to 8.99% of pay in this valuation. The reasons for the changes in the rate components are summarized immediately below.

Normal Cost is the estimated economic value of benefits being earned during the current year by currently active System members, based on the actuarial cost allocation method used in the valuation. The Normal Cost is based on both the level of projected future benefits for current active members, and the length of the retirement period over which those benefits are paid. As such the assumptions for projected pay increases and the timing of retirement are pivotal determinants of normal cost. As detailed in our 2014 Experience Study report and its associated August 11th presentation materials, significant updates were made to the individual member salary increase and timing of retirement assumptions to better reflect recent observed and anticipated future experience for System members.

Salary increase assumptions were noticeably lowered for most membership classes and service levels, reflecting experience over both the five-year observation period of the 2014 Experience Study and several years prior to that observation period.

Two major trends on retirement timing were clear from the 2014 Experience Study and reflected in the updated assumptions. First, there was a trend away from electing retirement or DROP entry at the time of first eligibility for immediate unreduced retirement at the earliest retirement ages for membership classes other than Special Risk. Second, for those same membership classes there was a pronounced tendency among those who did not retire or enter DROP at first eligibility to continue working for longer periods on average than was indicated by the assumptions used in the prior valuation. Generally, the trend for these classes is to continue working to ages closer to eligibility for Medicare and unreduced Social Security benefits, rather than retiring in the first several years after reaching initial (age 62) eligibility for Social Security. The combined effects of lower projected future benefits (due to lower projected compensation at retirement), and shorter average post-retirement payment periods combined to reduce the Normal Cost for membership classes other than Special Risk.

The UAL Cost is calculated to eliminate the UAL systematically over a specified time period if future experience follows assumptions and all actuarially calculated contributions are made. UAL Cost is stated as a rate of pay, with that rate calculation having the UAL in the numerator and both a financial amortization factor and the current payroll on which UAL Rate is charged in the denominator. The numerator of the UAL Cost calculation, the UAL, is essentially unchanged from the prior valuation. This is due to the effect of strong investment performance being balanced against changes to assumptions and methods at the 2014 Assumptions Conference, which increased calculated UAL, all else being equal. In the denominator the most

significant factor affecting UAL Cost was the modification of the assumption for future annual System payroll growth from 4.00% in the previous valuation to 3.25% in this valuation. The change in the assumption, which was made both to conform with observed 10-year historical experience for the payroll on which UAL Cost is charged and to better anticipate future expected experience, modified the financial amortization factor and increased the first year amortization charge by approximately 8%. That assumption driven increase is reflected in the approximately 8% increase in System average UAL Cost, from 4.54% of pay in the prior valuation to 4.89% of pay in this valuation.

We also would like to point out several other key items regarding this valuation:

- The contribution rate calculation methodology approved by the 2014 Assumptions Conference uses the Ultimate Entry Age Normal (Ultimate EAN) actuarial cost allocation method. Under Ultimate EAN, the Normal Cost Rate is calculated as the rate that would be applicable if the plan provisions of Senate Bill 2100 for members hired on or after July 1, 2011 applied to all FRS members for the entirety of their projected working careers. Of course, the present value of total projected benefits calculated for each member reflects the actual tier in which the member participates. As such, the methodology used for calculating contribution rates understates Normal Cost but overstates Actuarial Liability when compared to some alternative calculation methodologies, such as the Individual Entry Age Normal (Individual EAN) methodology that is mandated by GASB for financial reporting calculations under GASB Statements Nos. 67 & 68.
- The Ultimate EAN cost allocation method being used for liability and rate calculations, like any actuarial cost method, divides the present value of total projected benefits for each active member between past service (Actuarial Liability, or AL) and future service (present value of future normal costs). The cost allocation method does not impact the calculation of the present value of total projected benefits.

In general, throughout this report, any reference to FRS refers to the FRS Defined Benefit Program, unless noted to the contrary.

The tables immediately following compare July 1, 2013 actuarial valuation results with July 1, 2014 actuarial valuation results. The difference column shows the change between the July 1, 2013 valuation results and the July 1, 2014 valuation results.

A. Assets, Liabilities, and Funded Status

A comparison of the Actuarial Liabilities and Actuarial Value of Assets (AVA) follows. These figures are based upon the actuarial assumptions used to determine the actuarial costs of the FRS (see Appendix A). Under current methodology, and as required by Florida law, the AVA cannot be less than 80% or greater than 120% of the Market Value of Assets (MVA). This corridor restriction does not come into play unless there are dramatic asset gains or losses in the prior plan year. The purpose of the corridor is to ensure that the “smoothed” value of assets does not vary from the market value by more than 20%. As of July 1, 2014, the AVA is 92.43% of the MVA.

| Valuation Results (numbers in \$ billions) | | | | |
|--|----------------|----------------|--------------|--|
| | July 1, 2013 | July 1, 2014 | Difference | |
| 1. Actuarial Liability | \$153.3 | \$160.1 | \$6.8 | |
| 2. Actuarial Value of Assets | <u>\$131.7</u> | <u>\$138.6</u> | <u>\$6.9</u> | |
| 3. Unfunded Actuarial Liability (1 - 2) | \$21.6 | \$21.5 | (\$0.1) | |
| 4. Funded Percentage (2 / 1) | 85.9% | 86.6% | 0.7% | |

In Section 5 of this report we present an additional measure of funded status, the "accumulated benefit obligation" (ABO), based on both the AVA and the MVA.

B. Contributions

Actuarially calculated contribution rates by class are determined annually in the actuarial valuation. Actual contribution rates paid by employers for each class are set by statute and consist of Normal Cost and UAL Cost components. For the 2014-2015 plan year, the actuarially calculated rates determined by the 2013 valuation and the legislated rates are equivalent. The 2015-2016 actual contribution rates will be set during the 2015 legislative session, with advice from this valuation. The Unfunded Actuarial Liability amortization payment will consist primarily of costs or savings associated with plan changes, assumption changes, differences in actual and expected experience, or changes in actuarial methodology (if applicable). As of July 1, 2014 the FRS has a UAL of \$21.5 billion. The UAL Cost is calculated to eliminate the UAL over a pre-determined period if future experience follows assumptions.

The comparative FRS Regular and Special Risk contribution rates resulting from this valuation and the prior valuation are as follows. See Section 4 for more details on rate development and valuation results for all classes.

| | July 1, 2013 Valuation (2014-2015 Rates) | | July 1, 2014 Valuation (2015-2016 Rates) | | Difference | |
|------------------------------|--|-----------------|--|-----------------|--------------|-----------------|
| | Regular | Special Risk | Regular | Special Risk | Regular | Special Risk |
| | Normal Cost | 3.53% | 10.76% | 2.78% | 11.17% | -0.75% |
| UAL Cost | <u>3.01%</u> | <u>8.95%</u> | <u>3.15%</u> | <u>10.68%</u> | <u>0.14%</u> | <u>1.73%</u> |
| Total Cost for FRS Employers | 6.54% | 19.71% | 5.93% | 21.85% | -0.61% | 2.14% |

C. Membership

The total membership (active, terminated vested, retired, and DROP) of the FRS Defined Benefit Program increased by 10,262 members from 1,006,526 as of July 1, 2013, to 1,016,788 as of July 1, 2014, an increase of 1.0%. The total annualized projected payroll of non-DROP active members increased by 1.49%, from \$22.06 billion for the 2013-2014 plan year to \$22.39 billion for the 2014-2015 plan year, a \$0.33 billion increase in payroll. Note that the payroll on which UAL Cost rates are determined is higher, and includes the payroll of DROP and members in Optional Retirement Plans subject to the UAL contribution.

A summary of membership change by status follows:

| | Valuation Results: Counts | | |
|---------------------------|---------------------------|---------------|----------|
| | July 1, 2013 | July 1, 2014 | % Change |
| Active Members | 513,823 | 511,751 | -0.4% |
| Terminated Vested Members | 105,346 | 106,750 | 1.3% |
| Retired Members | 345,189 | 360,232 | 4.4% |
| DROP Members | <u>42,168</u> | <u>38,055</u> | -9.8% |
| Total Members | 1,006,526 | 1,016,788 | 1.0% |

D. Experience

Changes to assets and liabilities between July 1, 2013 and July 1, 2014 are described in this section.

1. Assets:

Changes in the smoothed Actuarial Value of Assets (AVA) during the plan year were due to:

| | | |
|--|--------------|---------|
| ▪ Contributions received | \$2.973 | |
| ▪ Payment of benefits and expenses | (8.846) | |
| ▪ Assumed plan year investment returns | 9.982 | |
| ▪ Investment plan year gain/(loss) experience | <u>2.832</u> | |
| Total plan year Actuarial Value of Assets increase | \$6.941 | Billion |

The actual plan investment return on the AVA was 9.95% compared to the 2013 valuation's assumed return of 7.75%. On a market value basis, the assets earned 17.54%.

On a year-by-year basis, asset returns were as follows:

| | Rates of Return* | | |
|-----------------|------------------|-----------|-----------|
| | 2011/2012 | 2012/2013 | 2013/2014 |
| Market Value | 0.21% | 13.63% | 17.54% |
| Actuarial Value | 6.74% | 8.02% | 9.95% |

* Assumes net cash flow occurs mid-year.

2. Liabilities:

Changes in the Actuarial Liability during the plan year were due to:

| | |
|--|---------|
| ▪ Expected increase, due to combined effects of Normal Cost plus interest-related growth in Actuarial Liability less benefit payments during plan year | \$4.517 |
| ▪ Change in actuarial cost method | 0.535 |
| ▪ Changes in assumptions | 1.334 |

Liability Plan Year (Gain) / Loss Experience

| | |
|--|--------------|
| ▪ Retired, disabled, & beneficiary mortality | 0.255 |
| ▪ Salary increases (less) / more than assumption | (0.558) |
| ▪ New active members (includes rehires) | 0.412 |
| ▪ Other demographic sources not noted above ¹ | <u>0.333</u> |
| ▪ Liability plan year (gain) / loss experience | 0.442 |

Total plan year Actuarial Liability increase \$6.828 Billion

¹ Includes the net effects of DROP entry, retirement, second election transfers to the Investment Plan and all other cessations of active service, when compared against assumptions used in determining actuarially calculated contribution rates in the July 1, 2013 actuarial valuation

3. Unfunded Liability:

The net change in the UAL of the FRS was a decrease of \$0.113 billion, from \$21.622 billion to \$21.509 billion. The net decrease is attributable to the following:

Change due to:

| | | |
|--|--------------|---------|
| ▪ Expected increase, based on the net combined effect of plan contributions received, assumed investment, and assumed demographic experience | \$0.408 | |
| ▪ Investment plan year (gain)/loss experience | (2.832) | |
| ▪ Liability plan year (gain)/loss experience | 0.442 | |
| ▪ Changes in actuarial cost method and assumptions | <u>1.869</u> | |
| Total plan year increase/(decrease) in UAL | \$(0.113) | Billion |

See table on the following page for total gains/losses by class.

2013-2014 Plan Year (Gain)/Loss Experience and Effects of Assumption and Method Changes ¹
 (All Amounts in Thousands)

| | <u>Regular</u> | <u>Special Risk</u> | <u>Special Risk Administrative</u> | <u>Judicial</u> | <u>-- Elected Officers' Class -- Leq-Atty-Cab</u> | <u>Local</u> | <u>Senior Management</u> | <u>Grand Total</u> |
|---|----------------------|---------------------|--|-------------------|---|-------------------|------------------------------|----------------------|
| Investment (gain)/loss (prior to DROP allocation) | (\$1,925,281) | (\$460,677) | (\$1,494) | (\$14,206) | (\$1,106) | (\$6,002) | (\$43,751) | (\$2,452,518) |
| Allocation of DROP investment (gain)/loss | (298,016) | (71,309) | (231) | (2,199) | (171) | (929) | (6,772) | (379,627) |
| Investment plan year (gain)/loss experience | (\$2,223,297) | (\$531,986) | (\$1,725) | (\$16,405) | (\$1,277) | (\$6,931) | (\$50,524) | (\$2,832,145) |
| <u>Liability plan year (gain) / loss experience by source</u> | | | | | | | | |
| Retired, disabled & beneficiary mortality | \$202,754 | \$36,461 | (\$402) | \$2,078 | \$164 | \$2,190 | \$11,822 | \$255,067 |
| Salary increases (less)/more than assumed | (318,513) | (242,487) | 47 | (325) | 772 | 3,240 | (713) | (557,979) |
| New active members (includes rehires) | 317,376 | 73,647 | 5,332 | 1,671 | 351 | 315 | 13,558 | 412,250 |
| Other demographic sources not noted above ² | (2,426) | 232,613 | 1,280 | 27,602 | (4,341) | (288) | 77,935 | 332,375 |
| Liability plan year (gain) / loss experience | \$199,191 | \$100,234 | \$6,257 | \$31,026 | (\$3,054) | \$5,457 | \$102,602 | \$441,713 |
| Change in actuarial cost method | \$281,352 | \$206,497 | (\$4) | \$17,503 | \$107 | \$1,267 | \$28,789 | \$535,511 |
| Changes in assumptions | 538,524 | 1,017,218 | (5,406) | (5,262) | (3,155) | (24,696) | (183,242) | 1,333,981 |
| Changes in actuarial cost method and assumptions | \$819,876 | \$1,223,715 | (\$5,410) | \$12,241 | (\$3,048) | (\$23,429) | (\$154,453) | \$1,869,492 |

¹ For purposes of this exhibit, liabilities and assets associated with members in DROP are allocated to their respective membership classes. This differs from their representation in Section 4, where UAL bases are tracked separately for the DROP.

² Includes the net effects of DROP entry, retirement, second election transfers to the Investment Plan and all other cessations of active service, when compared against assumptions used for actuarially calculated contribution rate calculations in the July 1, 2013 valuation. The losses for Special Risk and Senior Management membership classes were primarily caused by DROP entry during the plan year markedly in excess of the assumption used in the 2013 valuation's contribution rate calculations. The DROP entry assumption for this valuation was updated both to reflect recent experience and to eliminate the use of artificially depressed rates of assumed DROP entry. Please refer to our August 11, 2014 presentation to the Assumptions Conference Principals for additional details.

4. Actuarially Calculated Contribution Rates:

On a level-rate-of-pay basis, the FRS employer contribution rates for each membership class changed as follows:

| | <u>Regular</u> | <u>Special Risk</u> | <u>Special Risk Administrative</u> | <u>-- Elected Officers' Class --</u> | | <u>Local</u> | <u>Senior Management</u> |
|--|----------------|---------------------|------------------------------------|--------------------------------------|---------------------|---------------|--------------------------|
| | | | | <u>Judicial</u> | <u>Leg-Atty-Cab</u> | | |
| A. 1. July 1, 2013 Employer Normal Cost | 3.53% | 10.76% | 3.68% | 10.02% | 6.14% | 8.21% | 4.76% |
| 2. UAL Cost | <u>3.01%</u> | <u>8.95%</u> | <u>51.44%</u> | <u>23.69%</u> | <u>50.85%</u> | <u>46.01%</u> | <u>20.03%</u> |
| 3. Total July 1, 2013 Actuarially Calculated Employer Contribution Rate (1.+2.) | 6.54% | 19.71% | 55.12% | 33.71% | 56.99% | 54.22% | 24.79% |
| | | | | | | | |
| B. 1. July 1, 2014 Employer Normal Cost | 2.78% | 11.17% | 3.23% | 11.43% | 6.40% | 8.37% | 4.11% |
| 2. UAL Cost (See Table 4-11) | <u>3.15%</u> | <u>10.68%</u> | <u>35.49%</u> | <u>24.44%</u> | <u>47.90%</u> | <u>45.30%</u> | <u>20.61%</u> |
| 3. Total July 1, 2014 Actuarially Calculated Employer Contribution Rate (1.+2.) | 5.93% | 21.85% | 38.72% | 35.87% | 54.30% | 53.67% | 24.72% |
| | | | | | | | |
| C. Change in Total Actuarially Calculated Employer Contribution Rate (B.3.-A.3.) | -0.61% | 2.14% | -16.40% | 2.16% | -2.69% | -0.55% | -0.07% |

E. Graphs

Chart A: Assets / Liabilities

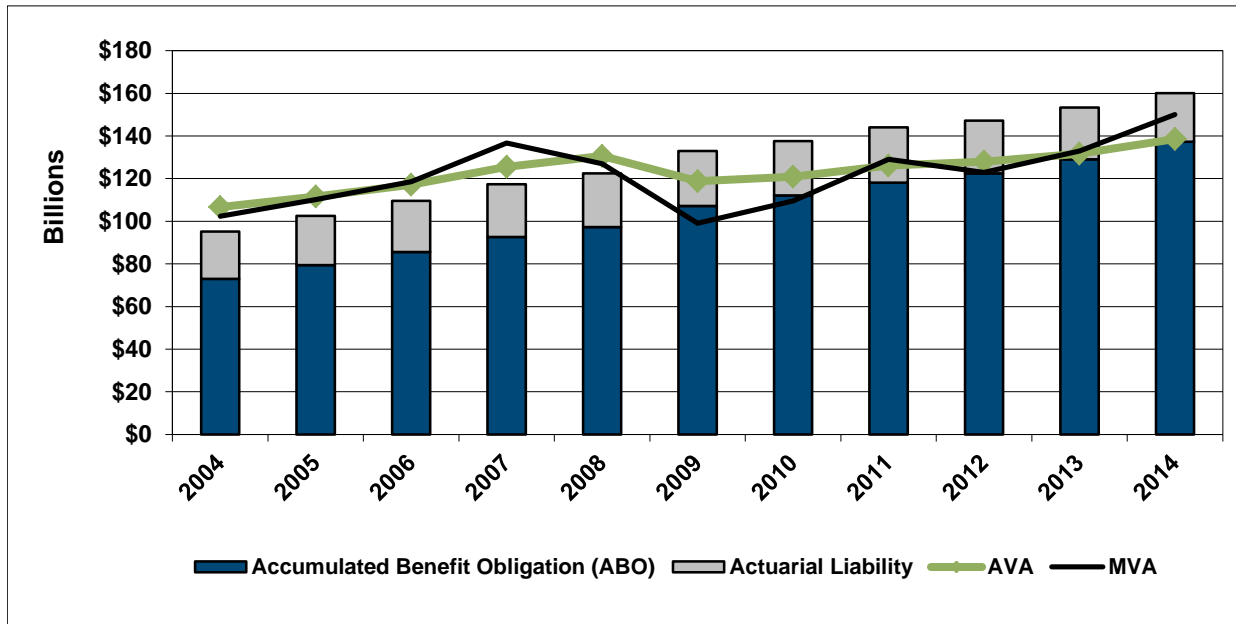


Chart B: Cash Flows

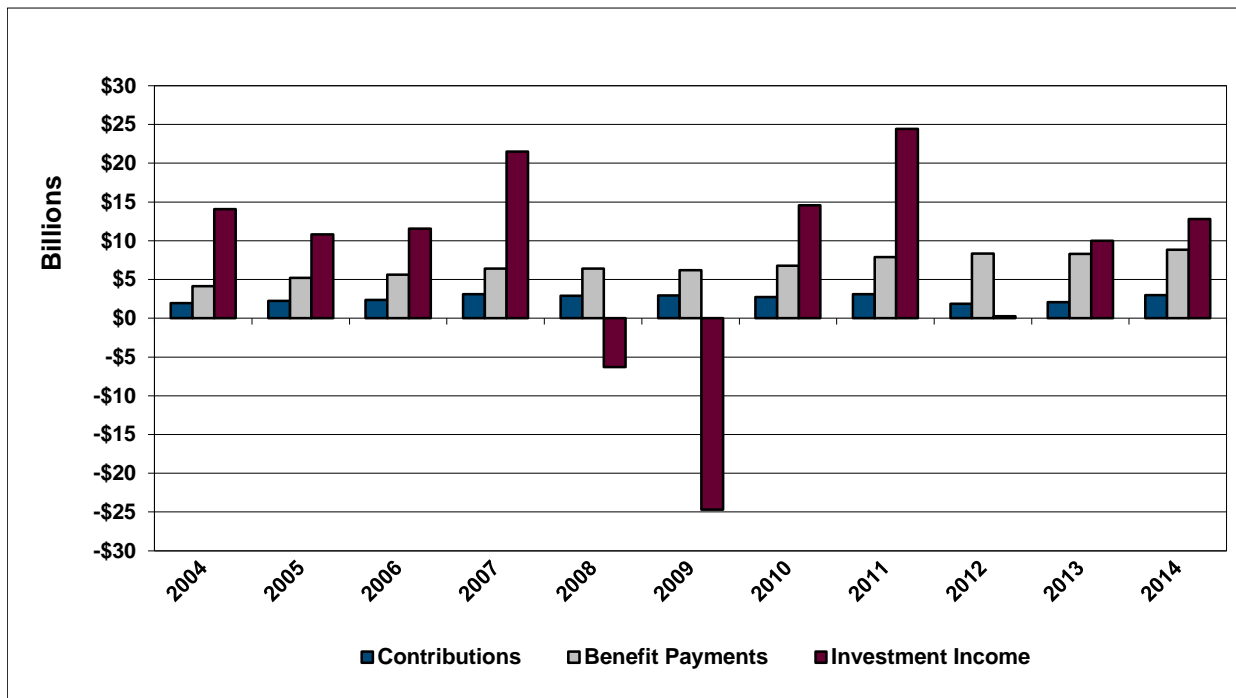


Chart C: Actuarially Calculated Contribution Rates (as % of Payroll)

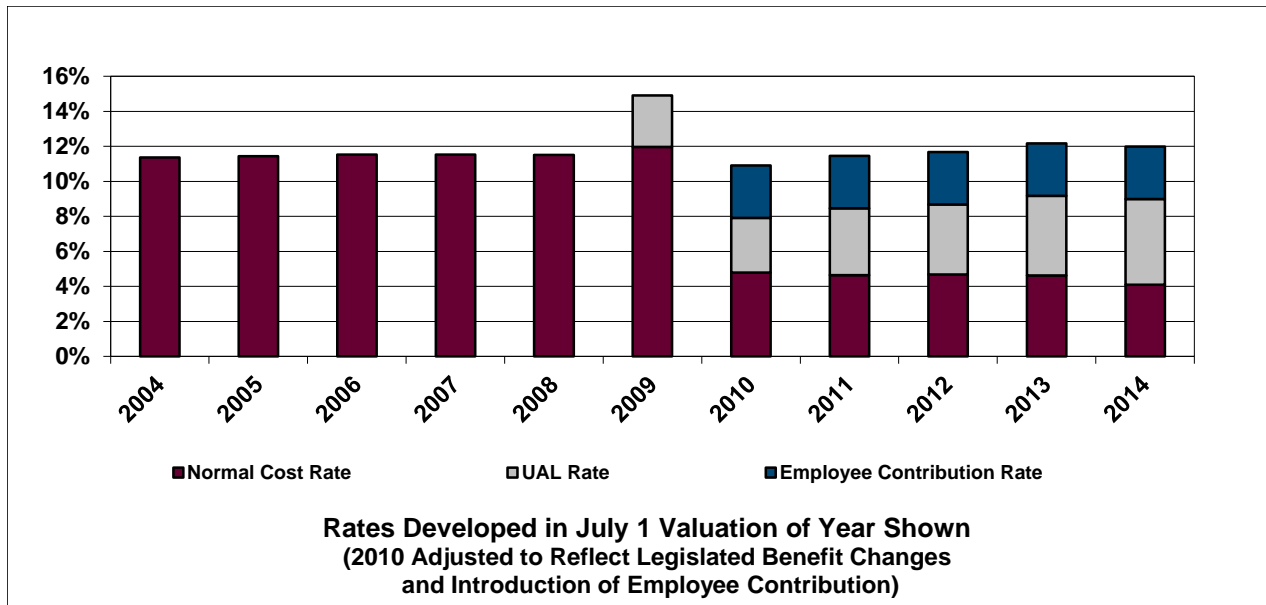
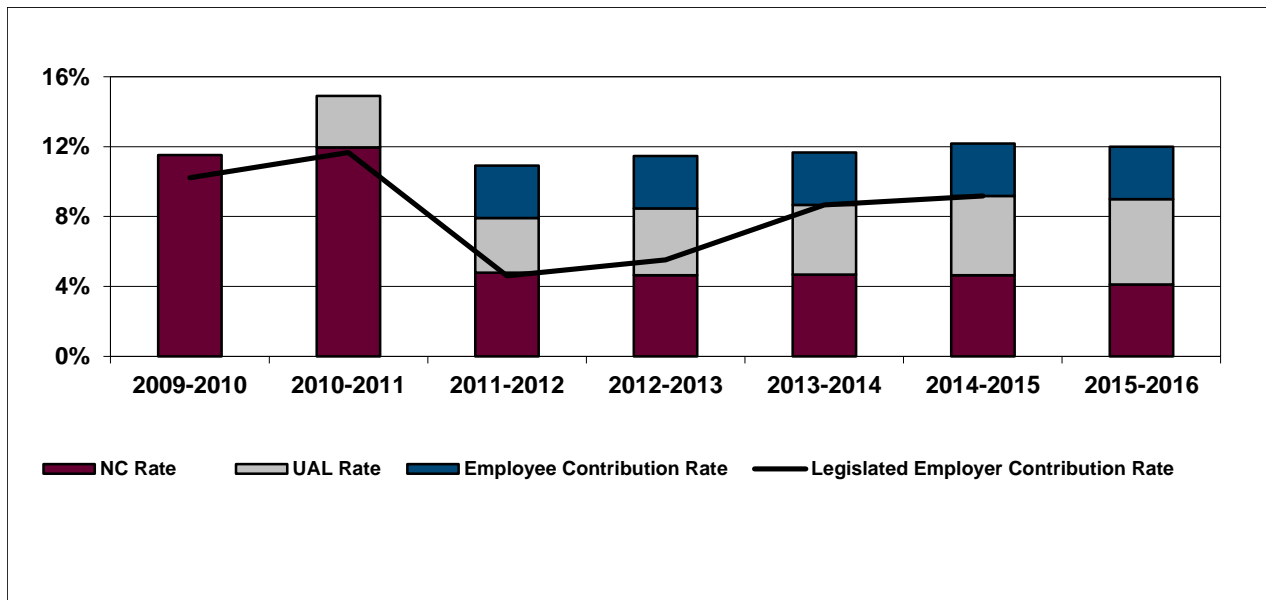


Chart D: Actuarially Calculated vs. Legislated Employer Contribution Rates (as % of Payroll)



F. Summary Comments

We caution that the results herein are applicable only for the next plan year. More than anything, future investment results will impact future contribution rates.

- The most recent experience study covered the period from July 1, 2008 to June 30, 2013. Experience studies are performed every five years and compare actual plan experience to the assumptions used in this report. This valuation reflects the method and assumptions changes proposed by the 2014 Experience Study and adopted at the 2014 Assumptions Conference.
- Areas of emphasis for discussion and review in subsequent Assumptions Conferences will include the amortization policy, the investment return assumption and the cost allocation method.

In attempting to anticipate future rates for the System, it is important to remain cognizant of the Investment Plan (IP) defined contribution program, which is available as an alternative to the defined benefit program for employees. The existence of the IP affects the DB plan contribution rates inasmuch as active members can elect to participate in either the DB plan or the IP. Thus, plan election decisions can affect the demographic composition of the DB plan. Current IP membership is nearly 18% of total active membership.

We mention these caveats because the actuarial process merely measures the impact of these factors on FRS costs and liabilities after they have occurred. Unanticipated benefit or salary changes, changes in member behavior (e.g., withdrawal rates, rates of retirement, etc.), or changes in investment return could necessitate a change in the actuarially calculated contribution rates.

Finally, we caution the readers of this report not to overemphasize the results of any single valuation as long-term trends are more important.

G. DROP Contribution Rate

DROP started in 1998, with a study completed prior to the DROP's implementation showing a material cost increase due to its introduction. Since its introduction and consistent with legislative directive, employers have been charged a uniform DROP Contribution Rate on all DROP payroll without regard to a participant's membership class prior to entering DROP. In addition, the asset reallocation developed in Table 2-6 is based on the presumption that assets assigned to the current DROP members equal the same percentage of DROP liabilities as the System average funded percentage of the FRS.

Like other membership classes, the DROP Contribution Rate has two components: Normal Cost and UAL Cost. The employer-paid Normal Cost is set to the System average employer-paid Normal Cost of 4.10%. The UAL Cost is consistent with the UAL Cost component of the other membership classes. Essentially, DROP employers are assigned a proportional share of the AVA. To accomplish this, assets are reallocated so that the DROP funded percentage is the same as the System average funded percentage. This asset re-allocation results in a UAL Cost for DROP payroll of 7.12%. The total DROP Contribution Rate (Normal Cost plus UAL Cost) in this valuation is 11.22%, compared to a DROP Contribution Rate of 11.02% in the prior valuation.

2. Assets

In many respects, an actuarial valuation can be considered similar to an inventory process. The inventory is taken annually as of the actuarial valuation date, which for this valuation is July 1, 2014. On that date the assets available for the payment of current and future benefits are appraised. These assets are compared with the inventory of Actuarial Liabilities. This inventory process leads to a method of calculating what contributions by members and/or their employers are needed to systematically eliminate any shortfall if future experience follows assumptions. The calculations are based on direction from the 2014 Assumptions Conference for the appropriate length of time over which to systematically eliminate the shortfall, which is technically referred to as Unfunded Actuarial Liability.

This section of the report deals with the asset determination. In the next section, the Actuarial Liabilities will be discussed. Section 4 will deal with the process for determining actuarially calculated contributions, based upon the relationship between the assets and Actuarial Liabilities.

Two measures of FRS assets are presented in the valuation:

The market value of assets provides the most accurate fair market “snapshot date” assessment of plan resources at a given date, and will be used on the balance sheet statements of position for the System and participating employers when upcoming GASB financial reporting standards come into effect. It tends to be the more volatile of the two asset measures and therefore is not used for determining the actuarially calculated contribution rates.

The actuarial value of assets is a second inventory measure of FRS asset holdings. It is related to the market value of assets, but uses a smoothing technique applied to mitigate year-to-year market fluctuations by recognizing actual single year investment returns different from the long-term assumption systematically over a multi-year period. It is used to stabilize year-to-year changes in the actuarially calculated contribution rates. Note that the investment return assumption for the year prior to the actuarial valuation date was 7.75%. The assumption is changed to 7.65% with this valuation.

The actuarial smoothed asset valuation measure, implemented in 1989, reflects a five-year averaging methodology, as required by Florida Law (S.121.031(3)(a), Florida Statutes). Under this method, the expected actuarial value of assets is determined by crediting the rate of investment return assumed in our valuation (7.75% through June 30, 2014; 7.65% beginning July 1, 2014) to the prior year's actuarial value of assets. Then, 20% of the difference between the actual market value and the expected actuarial value of assets is recognized. The actuarial value of assets is also restricted by a 20% corridor around the market value of assets, so that the actuarial value cannot be greater than 120% or less than 80% of the market value. Table 2-4 presents the details of this calculation. As of July 1, 2014 the actuarial value of assets is 92.43% of the market value of assets.

Seven tables are presented in this section, summarizing the financial resources of the System on July 1, 2014. Table 2-1 reconciles the market value of assets, as provided by the Division, to the asset values used in this valuation. Table 2-2 shows the reconciliation of valuation assets from June 30, 2013 to June 30, 2014. The assets are presented by category in Table 2-3. Table 2-4 provides a detailed development of the July 1, 2014 actuarial value of assets. In Table 2-5, the actuarial value of assets is allocated to each membership class, based on estimated cash flows, and the reallocation of assets from the various classes to the DROP class. Table 2-6 shows the derivation of reallocation of assets to/from the DROP class in order that DROP as a class is funded to the same extent as the System as a whole. (This reallocation ensures that the accumulation of assets in the DROP class does not impact the contribution rates of the other classes). Finally Table 2-7 presents rates of return and a comparison of asset allocation figures between 2013 and 2014.

The Market Value of Assets as of July 1, 2014 was based on information furnished to us by the Division of Retirement. The values have been accepted for use in this report without audit, but have been reviewed for consistency and reasonableness, when compared to prior reports.

The FRS Trust Fund is comprised of several distinct funds. The Florida Retirement System Trust Fund Only represents defined benefit plan assets. The Operating Trust Fund is the Division of Retirement's mechanism for spending its annual appropriation from the FRS Trust Fund. The Contribution Clearing Trust Fund is the fund into which all employer and employee contributions are made, and then transferred back out to the appropriate funds (DB Plan, IP Trust, optional annuity plans, etc.) In Table 2-1 we have denoted DB Plan assets as the sum of the FRS Trust Fund Only plus the Operating Trust Fund. Assets appearing in the Contribution Clearing Trust Fund as of the June 30, 2014 report date are generally designated for transfer to the Investment Plan, so are excluded from the DB Plan assets reflected in this valuation.

It is our understanding that FRS treats monthly member balance increases and interest crediting on those accumulated balances for DROP participants as a balance sheet "Accrued DROP Liability" in its financial statements. In other words, the Accrued DROP Liability is reported as a deduction from the overall value of Trust assets in the System's financial statements. While these accumulating DROP member balances are indeed linked to future DROP single sum payments, the assets underlying those amounts are still held in the Trust as of the actuarial valuation date. Additionally, the Actuarial Liabilities shown in this valuation report reflect the full value of projected future disbursements from the Trust for future single sum DROP benefits, since those benefits have not yet been distributed from the Trust. As such, the DROP Accrued Liability is not deducted from the assets used in our valuation so that assets and Actuarial Liabilities are appropriately matched. That is the reason for the adjustment shown in Table 2-1.

The benefit payments shown in FRS's financial statements indicate a year-over-year increase in the Accrued DROP Liability. The pension payments listed in Table 2-2 are net of the increase in the Accrued DROP Liability from June 30, 2013 to June 30, 2014. The increase in Accrued DROP Liability reflects additional monthly credit and interest accumulation for future single sum DROP benefits that have not been disbursed from the Trust as of June 30, 2014. That accumulation is included in the benefit payments entry on the System's financial statements. Since the accumulated amounts have not been disbursed from the Trust assets as of plan year end, that accumulation is netted out of the reported benefit payment entry to get an actuarial benefit payment entry representing the Trust disbursements. As noted above, measured Actuarial Liabilities at the valuation date include the full present value of the projected future single sum disbursements from the Trust for the DROP.

**Table 2-1
Florida Retirement System
FRS Trust Fund**

| | DB Plan Trust ¹ | Contribution Clearing Trust | FRS Trust Total |
|--|----------------------------|--------------------------------|---------------------------|
| Market Value of Assets on June 30, 2013 for Actuarial Valuation | \$ 133,027,955,768 | \$ 1,438,600 | \$ 133,029,394,368 |
| - Adjustment for June 30, 2013 DROP Liability | <u>(3,357,306,300)</u> | - | <u>(3,357,306,300)</u> |
| Net Assets Held in Trust for Pension Benefits on June 30, 2013 | \$ 129,670,649,468 | \$ 1,438,600 | \$ 129,672,088,068 |
| + Contributions by Source: | | | |
| Pension Contributions - State | \$ 474,076,982 | \$ 57,818,150 | \$ 531,895,132 |
| Pension Contributions - Non-State | 1,715,558,889 | 170,278,669 | 1,885,837,558 |
| Pension Contributions - Employees | 699,578,509 | 140,141,121 | 839,719,630 |
| Transfers from IP - Second Elections | 50,097,733 | - | 50,097,733 |
| Transfer from ORP | 33,198,166 | - | 33,198,166 |
| Transfer from OAP | 415,277 | - | 415,277 |
| General Revenue | <u>15,518,554</u> | - | <u>15,518,554</u> |
| Total Contributions | \$ 2,988,444,110 | \$ 368,237,940 | \$ 3,356,682,050 |
| + Interest and Dividends: | | | |
| Interest Income | \$ 985,690,123 | \$ - | \$ 985,690,123 |
| Dividend Income | 2,201,178,475 | - | 2,201,178,475 |
| Real Estate Income | 461,342,370 | - | 461,342,370 |
| Other | 220,329,139 | - | 220,329,139 |
| Less Investment Activity Expense | <u>(511,032,856)</u> | - | <u>(511,032,856)</u> |
| Total Investment Income | \$ 3,357,507,251 | \$ - | \$ 3,357,507,251 |
| +Net Realized and Unrealized Appreciation: | \$ 19,454,762,329 | \$ - | \$ 19,454,762,329 |
| - Deductions by Source: | | | |
| Pension Payments ² | \$ 8,045,664,695 | \$ - | \$ 8,045,664,695 |
| Benefit Payments - General Revenue Funded | 15,518,554 | - | 15,518,554 |
| Contribution Refunds | 6,993,783 | - | 6,993,783 |
| Disbursements to IP - Second Elections | 807,671,764 | 351,928,363 | 1,159,600,127 |
| Administrative Expenses | 17,039,054 | - | 17,039,054 |
| Transfers to Other Funds and Departments | <u>832,745</u> | <u>7,797,607</u> | <u>8,630,352</u> |
| Total Deductions | \$ 8,893,720,595 | \$ 359,725,970 | \$ 9,253,446,565 |
| Net Assets Held in Trust for Pension Benefits on June 30, 2014 | \$ 146,577,642,563 | \$ 9,950,570 | \$ 146,587,593,133 |
| + Adjustment for June 30, 2014 DROP Liability | <u>3,389,125,451</u> | - | <u>3,389,125,451</u> |
| Market Value of Assets on June 30, 2014 for Actuarial Valuation | \$ 149,966,768,014 | \$ 9,950,570 | \$ 149,976,718,584 |

¹ "DB Plan Trust" denotes the FRS Trust Only plus Division of Retirement Operating Trust Fund.

² Includes \$31,819,151 increase in Accrued DROP Liability (from \$3,357,306,300 to \$3,389,125,451) for future single sum benefits not yet paid for DROP participants.

Table 2-2
Florida Retirement System
Reconciliation of Market Value of Assets Used for Valuation
DB Plan Trust

| | |
|---|------------------------------|
| Market Value of Assets for Actuarial Valuation as of June 30, 2013 | \$133,027,955,768 |
| Adjustment for Contribution Clearing Trust | - |
| Contributions by Source: | |
| Pension Contributions - State | 474,076,982 |
| Pension Contributions - Non-State | 1,715,558,889 |
| Pension Contributions - Employees | 699,578,509 |
| Transfers from IP - Second Elections | 50,097,733 |
| Transfer from ORP | 33,198,166 |
| Transfer from OAP | 415,277 |
| Other | - |
| Interest and Dividends: | |
| Interest Income | 985,690,123 |
| Dividend Income | 2,201,178,475 |
| Real Estate Income | 461,342,370 |
| Other | 220,329,139 |
| Less Investment Activity Expense | (511,032,856) |
| Net Realized and Unrealized Appreciation | 19,454,762,329 |
| Pension Payments | (8,013,845,544) ¹ |
| Contribution Refunds | (6,993,783) |
| Disbursements to IP - Second Elections | (807,671,764) |
| Administrative Expenses | (17,039,054) |
| Transfers to Other Funds and Departments | (832,745) |
| Market Value of Assets for Actuarial Valuation as of June 30, 2014 | \$149,966,768,014 |

¹ Pension Payments shown above are net of the increase in Accrued DROP Liability from June 30, 2013 to June 30, 2014. The increase in Accrued DROP Liability reflects accumulated amounts for future single sum DROP benefits that have not been disbursed from the Trust as of June 30, 2014. Measured actuarial liabilities at that date include the full present value of the projected future single sum disbursements from the Trust for the DROP.

Table 2-3
Florida Retirement System
Summary of Market Value of Assets for Actuarial Valuation
 (by Asset Category)
 (\$ in Thousands)

| <u>Asset Category</u> | Market Value as of July 1, | |
|---|-----------------------------------|-----------------------|
| | <u>2013</u> | <u>2014</u> |
| 1. Common Stock | \$92,223,803 | \$106,406,252 |
| 2. Bonds | \$32,629,902 | \$34,021,409 |
| 3. Real Estate | \$9,040,776 | \$9,910,420 |
| 4. Temporary Investments | \$3,548,406 | \$4,627,994 |
| 5. Cash - Including Certificates of Deposit | \$2,280,387 | \$1,728,643 |
| 6. Receivables | \$3,518,622 | \$5,481,246 |
| 7. Miscellaneous | \$424 | \$473 |
| 8. Reverse Purchase Agreements | <u>\$750,000</u> | <u>\$1,150,000</u> |
| Gross Assets | \$143,992,320 | \$163,326,437 |
| 9. Current Liabilities and Reserves | <u>(\$10,964,364)</u> | <u>(\$13,359,669)</u> |
| Market Value of Assets for Actuarial Valuation | \$133,027,956 | \$149,966,768 |

Table 2-4
Florida Retirement System
Development of 2014 Actuarial Value of Assets

| | |
|---|--------------------------|
| 1. FRS Market Value of Assets on June 30, 2013 for Actuarial Valuation | \$133,027,955,768 |
| 2. Actuarial Value of Assets on July 1, 2013 | \$131,680,615,103 |
| 3. 2013/2014 Net Cash Flow (Contributions less Benefits and Expenses) | (\$5,873,457,333) |
| 4. Preliminary Actuarial Value of Assets, July 1, 2014, if Items 2 and 3 earned an assumed rate of 7.75% | \$135,784,808,968 |
| 5. Market Value of Assets, June 30, 2014 for Actuarial Valuation | \$149,966,768,014 |
| 6. Net Assets (Actuarial Value Basis) Available for Benefits Prior to Application of 80%/20% Corridor $4 + ((5 - 4) \times 20\%)$ | \$138,621,200,784 |
| 7. 120% of Market Value [120% (5)] | \$179,960,121,617 |
| 8. 80% of Market Value [80% (5)] | \$119,973,414,411 |
| 9. Actuarial Value of Assets on July 1, 2014 Lesser of (6) and (7), but not less than (8) | \$138,621,200,784 |
| 10. Ratio of July 1, 2014 Actuarial Value of Assets to Market Value on June 30, 2014 for Actuarial Valuation | <u>92.43%</u> |

Table 2-5
Florida Retirement System
Development of Actuarial Value of Assets
by Membership Class
 (\$ in Thousands)

| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- | | | Senior Management | DROP | Total System |
|---|--------------|--------------|--------------------------------|-------------------------------|--------------|-----------|----------------------|--------------|-----------------|
| | | | | Judicial | Leg-Atty-Cab | Local | | | |
| 1. Allocated Actuarial Value of Assets by Class, July 1, 2013 | \$89,715,380 | \$21,175,542 | \$70,672 | \$663,240 | \$52,623 | \$286,418 | \$2,023,314 | \$17,693,426 | \$131,680,615 |
| 2. Total Contribution for the Plan Year | 1,772,282 | 753,728 | 1,325 | 34,437 | 2,575 | 16,659 | 106,185 | 285,735 | 2,972,926 |
| 3. Benefit Payments and other Disbursements | (6,139,192) | (1,251,876) | (6,677) | (69,007) | (7,143) | (42,901) | (176,489) | (1,153,098) | (8,846,383) |
| 4. Allocated Investment Earnings on AVA Basis | 8,712,164 | 2,082,837 | 6,768 | 64,293 | 5,011 | 27,201 | 197,884 | 1,717,884 | 12,814,043 |
| 5. Unadjusted Actuarial Value of Assets (1) + (2) + (3) + (4) | 94,060,635 | 22,760,231 | 72,088 | 692,963 | 53,066 | 287,377 | 2,150,894 | 18,543,947 | 138,621,201 |
| 6. Net Reallocation (see Table 2-6) | 1,241,808 | 430,118 | 286 | 28,280 | 921 | 5,986 | 53,900 | (1,761,299) | 0 |
| 7. Allocated Actuarial Value of Assets by Class, July 1, 2014: (5) + (6) | \$95,302,443 | \$23,190,349 | \$72,374 | \$721,243 | \$53,987 | \$293,363 | \$2,204,794 | \$16,782,648 | \$138,621,201 |

Table 2-6
Florida Retirement System
Reallocation of Actuarial Value of Assets
by Membership Class
 (\$ in Thousands)

| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- | | | Senior Management | DROP | Total System |
|---|-------------|--------------|--------------------------------|-------------------------------|--------|---------|----------------------|---------------|-----------------|
| | | | Judicial | Leg-Atty-Cab | Local | | | | |
| 1. Actuarial Accrued Liability, July 1, 2014 | | | | | | | | \$19,386,218 | \$160,130,502 |
| 2. Unadjusted Actuarial Value of Assets, July 1, 2014 prior to reallocation | | | | | | | | 18,543,947 | 138,621,201 |
| 3. Unfunded Actuarial Liability (UAL): (1) - (2) | | | | | | | | \$842,271 | \$21,509,301 |
| 4. Aggregate Funded Percentage: (2) / (1) | | | | | | | | 95.66% | 86.57% |
| 5. DROP Assets Required to Meet Aggregate Funded Percentage: (1) x (4) [Total System] - (2) | | | | | | | | (\$1,761,299) | |
| 6. Proportion of DROP Liability by Class | 0.7051 | 0.2442 | 0.0002 | 0.0161 | 0.0005 | 0.0034 | 0.0306 | N/A | 1.0000 |
| 7. Assets to be Reallocated | \$1,241,808 | \$430,118 | \$286 | \$28,280 | \$921 | \$5,986 | \$53,900 | (\$1,761,299) | 0 |

Table 2-7
Florida Retirement System

A. Rates of Return on Investments¹

| <u>Asset Bases</u> | <u>Rates of Return</u> | | |
|--------------------|------------------------|------------------|------------------|
| | <u>2011/2012</u> | <u>2012/2013</u> | <u>2013/2014</u> |
| Market Value | 0.21% | 13.63% | 17.54% |
| Actuarial Value | 6.74% | 8.02% | 9.95% |

¹ Assumes net cash flow occurs mid-year

B. Allocation of Assets at Market Value

| <u>Asset Category</u> | <u>July 1, 2013</u> | <u>July 1, 2014</u> |
|---|---------------------|---------------------|
| Stocks | 69.33% | 70.95% |
| Bonds | 24.53% | 22.69% |
| Real Estate | 6.80% | 6.61% |
| Temporary Investments | 2.67% | 3.09% |
| Cash | 1.71% | 1.15% |
| Other (includes receivables & payables) | -5.04% | -4.49% |
| | 100% | 100% |

3. Liabilities

In the previous section, an actuarial valuation was compared to an inventory process, and an analysis was given of the inventory of assets of the FRS as of the valuation date, July 1, 2014. In this section, the discussion will focus on the commitments of the FRS, which will be referred to as its Actuarial Liabilities. In later sections, other liabilities are presented (Section 5) based on accounting principles of the Financial Account Standards Board (FASB) and Governmental Accounting Standards Board (GASB). It is important to note that the accounting liabilities are presented for disclosure and comparison purposes and that the Actuarial Liabilities in this section are used for determining the FRS actuarially calculated contributions.

A fundamental principle in financing a retirement program is that the projected cost of retirement benefits should be accrued during the period in which service is performed, rather than during the post-retirement period of benefit distribution. There are several methods that can be used in making such an allocation.

As part of the actuarial rate calculation methodology approved by the Assumptions Conference, the System's Normal Cost and Actuarial Liability are calculated using the Ultimate Entry Age (Ultimate EAN) actuarial cost allocation method. The cost method does not affect the calculation of overall projected System benefits (Present Value of Benefits), but it does affect the allocation of those benefits over a member's projected working career between past (Actuarial Liability), current year (Normal Cost) and all future year projected (Present Value of Future Normal Costs) service. The Present Value of Benefits is equal to the sum of the Actuarial Liability and the Present Value of Future Normal Costs.

For a system such as FRS with two membership tiers, Ultimate EAN calculates the Normal Cost allocation for individual members as if each member participates in the tier available to new hires for his or her full working career. For members in Tier I, this means the Normal Cost under the Ultimate EAN method will be based on the benefit plan provisions of Tier II. Because Tier II results in lower expected benefit payments than under Tier I, the calculated Normal Cost rate is lower than it would be if the plan provisions specific to the member's actual tier were used.

The actuarial cost allocation method does not affect the calculation of the Present Value of Benefits, which is based on the plan provisions specific to each member's enrollment date. The Actuarial Liability is the Present Value of Benefits minus the Present Value of Future Normal Costs. Thus, the Ultimate EAN method used in this valuation leads to a lower Normal Cost and a higher Actuarial Liability for Tier I members than would be calculated under a method that based the Normal Costs of Tier I members on the Tier I benefit plan provisions.

The difference between the Actuarial Liability and the Actuarial Value of Assets accumulated as of the valuation date is referred to as the Unfunded Actuarial Liability (UAL). (If the difference is negative, the excess of the funds accumulated over the liabilities may be referred to as the surplus.) The UAL is amortized in accordance with the schedules in Section 4 of this report.

Please note that the recently issued Statements 67 & 68 of the Governmental Accounting Standards Board (GASB) do not permit the use of the Ultimate EAN cost allocation method for accounting calculations. The Ultimate EAN method and the GASB 67 & 68 mandated variation of EAN ("Individual" EAN) will produce different Actuarial Liability and Normal Cost results. Determining which EAN methodology (Ultimate or Individual) generates higher current contribution rates depends on the period used to amortize the Unfunded Actuarial Liability. For FRS, the amortization periods used in the methodology approved by the Assumptions Conference will lead to the Ultimate EAN methodology having lower current calculated contribution rates than the Individual EAN methodology. As the number of Tier I active participants decreases, the Individual EAN

Normal Cost would trend downward toward the Tier II Normal Cost. When all Tier I active participants have left the workforce the contribution results of the two variations should converge.

The UAL will grow with interest and Normal Cost, while contributions will reduce it.

Benefit improvements, actuarial gains and losses (variations in investment results and demographic changes different from assumption), and changes in actuarial procedures and methodologies will also have an effect on the total Actuarial Liability and on the UAL.

After the amount of the UAL has been determined, as part of the rate calculation methodology approved by the Assumptions Conference, the actuarially calculated contribution rates include a component for the amortization of the UAL. A schedule of contributions is established to amortize the UAL. In Section 4 of the report, we discuss the contribution schedules in detail.

Table 3-1 contains a breakdown of the Actuarial Liabilities and Unfunded Actuarial Liabilities in the FRS for the 2013 valuation and the 2014 valuation. In Table 3-2, the 2014 liabilities are shown for each membership class.

Legislation enacted in 2001 “walls off,” for 25 years, the actuarial gains arising from former Defined Benefit Plan participants electing the Investment Plan option. The “walled off” amount is called the contingent liability. The Actuarial Liabilities generally do not include the contingent liability. However, surplus, if any, used for contribution rate reductions is net of the contingent liability. Table 3-3 shows the contingent liability and the number of current active participants, by class, who elected to transfer from the Defined Benefit Plan to the Investment Plan during the original 2002-2003 election periods available to members who were active when the IP became effective.

Table 3-1
Florida Retirement System
Actuarial Liabilities – Prior and Revised Assumptions
(\$ in Thousands)

| | July 1, 2013 Valuation | July 1, 2014 Prior Assumptions | July 1, 2014 Revised Assumptions |
|--|---------------------------|--------------------------------------|--|
| 1. Actuarial Liabilities for: | | | |
| (a) Active Members | \$52,626,743 | \$53,293,421 | \$53,651,424 |
| (b) Retired, Disabled and Beneficiary Members | 74,843,720 | 80,492,091 | 81,702,688 |
| (c) Terminated Vested Members | 5,234,608 | 5,320,869 | 5,390,172 |
| (d) DROP | <u>20,597,701</u> | <u>19,154,629</u> | <u>19,386,218</u> |
| 2. Total Actuarial Liability | \$153,302,772 | \$158,261,010 | \$160,130,502 |
| 3. Actuarial Value of Assets | <u>\$131,680,615</u> | <u>\$138,621,201</u> | <u>\$138,621,201</u> |
| 4. Unfunded Actuarial Liability / (Surplus) | \$21,622,157 | \$19,639,809 | \$21,509,301 |
| 5. Investment Plan Contingent Liability ¹ | <u>\$233,810</u> | <u>\$232,394</u> | <u>\$232,394</u> |
| 6. Surplus Available for Rate Reduction | \$0 | \$0 | \$0 |

¹ See Table 3-3.

Table 3-2
Florida Retirement System
Actuarial Liabilities by Membership Class – Revised Assumptions
July 1, 2014
 (\$ in Thousands)

| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- | | | Senior Management | DROP | Total System |
|---|---------------------|---------------------|--------------------------------|-------------------------------|-----------------|------------------|----------------------|--------------------------|----------------------|
| | | | Judicial | Leg-Atty-Cab | Local | | | | |
| 1. Present Value of Benefits for: | | | | | | | | | |
| a. Active Members | \$47,806,050 | \$17,751,568 | \$15,889 | \$538,866 | \$28,256 | \$189,262 | \$1,811,930 | \$0 | \$68,141,821 |
| b. Retired, Disabled and Beneficiary Members | 62,949,814 | 15,443,355 | 73,713 | 664,375 | 71,697 | 415,601 | 2,084,133 | 19,386,218 | 101,088,906 |
| c. Terminated Vested Members | <u>4,447,472</u> | <u>720,788</u> | <u>1,256</u> | <u>19,593</u> | <u>9,562</u> | <u>21,358</u> | <u>170,143</u> | <u>0</u> | <u>5,390,172</u> |
| d. Total Present Value of Benefits (a)+(b)+(c) | 115,203,336 | 33,915,711 | 90,858 | 1,222,834 | 109,515 | 626,221 | 4,066,206 | 19,386,218 | 174,620,899 |
| 2. Present Value of Future Normal Cost (Actives): | \$8,952,475 | \$5,149,398 | \$1,624 | \$102,693 | \$3,853 | \$28,538 | \$251,816 | \$0 | \$14,490,397 |
| 3. Actuarial Liabilities for: | | | | | | | | | |
| a. Active Members (1a) - (2) | \$38,853,575 | \$12,602,170 | \$14,265 | \$436,173 | \$24,403 | \$160,724 | \$1,560,114 | \$0 | \$53,651,424 |
| b. Retired, Disabled and Beneficiary Members (1b) | 62,949,814 | 15,443,355 | 73,713 | 664,375 | 71,697 | 415,601 | 2,084,133 | 19,386,218 | 101,088,906 |
| c. Terminated Vested Members (1c) | <u>4,447,472</u> | <u>720,788</u> | <u>1,256</u> | <u>19,593</u> | <u>9,562</u> | <u>21,358</u> | <u>170,143</u> | <u>0</u> | <u>5,390,172</u> |
| d. Total Actuarial Liability (a)+(b)+(c) | \$106,250,861 | \$28,766,313 | \$89,234 | \$1,120,141 | \$105,662 | \$597,683 | \$3,814,390 | \$19,386,218 | \$160,130,502 |
| 4. Actuarial Value of Assets | <u>\$95,302,443</u> | <u>\$23,190,349</u> | <u>\$72,374</u> | <u>\$721,243</u> | <u>\$53,987</u> | <u>\$293,363</u> | <u>\$2,204,794</u> | <u>\$16,782,648</u> | <u>\$138,621,201</u> |
| 5. Unfunded Actuarial Liability / (Surplus) | \$10,948,418 | \$5,575,964 | \$16,860 | \$398,898 | \$51,675 | \$304,320 | \$1,609,596 | \$2,603,570 ¹ | \$21,509,301 |
| 6. Present Value of Future Pay | \$157,185,819 | \$36,206,201 | \$25,393 | \$735,523 | \$39,538 | \$252,029 | \$3,649,298 | \$0 | \$198,093,801 |

¹ This is a bookkeeping item. DROP liabilities include the total present value of benefits to all members currently in DROP. When a member leaves DROP, their liability is transferred to the class of membership from which they retired.

Table 3-3
Investment Plan
Contingent Actuarial Liabilities
July 1, 2014
(\$ in Thousands)

| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- Judicial | Leg-Atty-Cab | Local | Senior Management | DROP | Total System |
|---|-----------|--------------|--------------------------------|---|--------------|-------|----------------------|------|-----------------|
| <u>As of July 1, 2013</u> | | | | | | | | | |
| Contingent Liability | \$214,547 | \$10,253 | (\$25) | (\$705) | \$173 | \$110 | \$9,457 | NA | \$233,810 |
| Participant Counts | 7,118 | 226 | 1 | 5 | 4 | 10 | 169 | NA | 7,533 |
| <u>As of July 1, 2014</u> | | | | | | | | | |
| Contingent Liability ^{1 & 2} | \$213,410 | \$9,679 | (\$27) | (\$608) | \$187 | \$106 | \$9,647 | NA | \$232,394 |
| Participant Counts | 6,571 | 198 | 1 | 4 | 4 | 9 | 160 | NA | 6,947 |

¹ The contingent liability is not included in the actuarial liabilities of FRS and is removed from the surplus.

² The contingent liability as of July 1, 2014 is calculated as the July 1, 2003 contingent liability increased by eleven years of interest, adjusted for the proportion of original transfers remaining in the Investment Plan.

4. Contributions

Differences between the Actuarial Liabilities and the assets can be made up through (1) future contributions in excess of the Normal Costs to amortize the shortfall and/or (2) the excess of actual investment returns over assumed returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in a systematic manner if future experience follows the assumptions. By contrast, in prior years when the FRS had an actuarial surplus, legislated contribution rates were generally below the Normal Cost. In this section we develop and present the FRS contribution rates based on the July 1, 2014 membership data to be effective for the Plan Year beginning July 1, 2015.

First, we present a description of the actuarial method used to determine the actuarially calculated FRS contributions for the 2015-2016 plan year. This is followed by a series of tables presenting the details of our calculations.

A. Funding Methods

The actuarial cost method used to determine the pattern of future contributions is called the Ultimate Entry Age Normal (Ultimate EAN) actuarial cost method. Under this method (as is the case for most actuarial cost methods), the contributions required are based on two elements:

- The Normal Cost
- The amortization payment to liquidate the Unfunded Actuarial Liability (UAL) or surplus.

These elements are described in more detail below.

1. Normal Cost

Under the Ultimate EAN method, the Normal Cost rate is that level percentage of pay which would fully fund a member's benefit at retirement, if paid from the year of entry (i.e., "entry age") to the year of retirement if future experience were to exactly match the actuarial assumptions. For a system such as FRS, with two membership tiers, Ultimate EAN determines the Normal Cost allocation for individual members as if each member participates in the tier available to new hires for his or her full working career. For members in Tier I, this means the Normal Cost under the Ultimate EAN method will be based on the benefit plan provisions of Tier II. Because Tier II results in lower expected benefits than under Tier I, the calculated Normal Cost rate is lower than it would be if the plan provisions specific to the member's actual tier were used. This lower Normal Cost rate leads to a higher Actuarial Liability, all else equal, as is discussed below.

We have determined the Normal Cost rates for the FRS separately by membership class and benefit. These are summarized in Table 4-1.

2. Unfunded Actuarial Liability (UAL)

The Actuarial Liability is the difference between the Actuarial Present Value of Projected Benefits (PVB) and the Present Value of Future Normal Costs (PVFNC). Because Ultimate EAN produces lower Normal Costs than would be determined if each individual's applicable benefit plan provisions were used, the Actuarial Liability is higher than it would be if those plan provisions were used.

The term "fully funded" is often applied to a system where contributions at the Normal Cost rate are completely adequate to fund the projected future benefits of all existing members if future experience follows the assumptions. Currently, most systems are not fully funded, either because payments for benefit improvements in the past have not been completely made, because actuarial deficiencies have occurred due

to experience that has not been as favorable as anticipated, or both. Under these circumstances, a UAL exists. For the FRS, this is the sixth consecutive year that a UAL exists, or that the Plan does not have a surplus. Prior to that time, the Actuarial Value of Assets exceeded the Actuarial Liability for the valuations from 1998 through 2008 and no UAL existed in those valuations.

Tables 4-2 through 4-10 show how the UAL contribution rates were derived for the FRS. Table 4-2 shows the calculations on a composite basis, while Tables 4-3 through 4-10 show the calculations for each individual membership class and sub-class and the DROP.

As part of the funding policy selected by the Florida Legislature, the actuarially calculated contribution rate is based on a "layered" approach that includes closed 30-year charge and credit bases for the amortization of the UAL. Starting in the 1998 actuarial valuation, the Legislature required all UAL bases in existence at that time to be considered fully amortized, since the Plan was in a surplus position. Since then, bases were created whenever there were changes in plan provisions or changes in assumptions pursuant to an experience study. Now that the UAL has reemerged, all experience gains and losses are also subject to amortization. In this valuation, we show the amortization of each plan/assumption change since 1998 and experience gains/losses starting in 2009. The plan changes include those attributable to House Bill 479 in 2010 and Senate Bill 2100 in 2011.

For a given base of UAL amortization, annual amortization payments are calculated as increasing by 3.25% per year ("level percent of payroll amortization"), consistent with the valuation's long-term annual payroll growth assumption. If future experience follows the actuarial assumptions, this should result in amortization payments that keep pace with the assumed growth in overall compensation. Please note that with the current amortization period of 30 years, amortization payments will not be large enough to cover interest on the UAL for several years, which means that as a dollar amount the UAL is expected to grow for a period of time. Under current assumptions, the expected UAL for a newly established amortization base will grow until the amortization period is down to 18 years. After that time, the amortization payments will be large enough that the amortization payments will cover both interest and principal, and the UAL as a dollar amount will be projected to decrease in each subsequent year. After approximately 20 years, the unamortized balance for the base will be approximately at the same level as the initial amount of the base.

The benefit changes legislated by Senate Bill 2100 reduced the Normal Cost, PVFNC and the PVB for current and future active members. All members initially enrolled before July 1, 2011 (Tier I) will continue to earn benefits at levels greater than those annually earned by members initially enrolled on or after July 1, 2011 (Tier II). While the base benefits are higher for Tier I members than Tier II members, the projected benefit levels for Tier I members are decreased from what they would have been absent Senate Bill 2100, due to the determination of the annual COLA percentage being based on the prorated pre-July 2011 service over total service.

As noted on the prior page, the Actuarial Liability is defined as PVB less PVFNC. For some membership classes the percentage decrease in the PVFNC was larger than the percentage decrease in the PVB, resulting in an increase in an Actuarial Liability. For the remaining membership classes, the percentage decrease in the PVFNC was smaller than the percentage decrease in the PVB, resulting in a decrease in the Actuarial Liability. The variation is due to the different demographics, benefit multipliers and unique interrelation of the modified benefit provisions of each membership class. The PVB will be lower in future valuations than it would have been had Senate Bill 2100 not been adopted.

B. Employer Contribution Rates

Table 4-11 presents the actuarially calculated employer contribution rates.

The reader should note that the payroll base for UAL Cost contributions is approximately \$4.8 billion larger than the payroll base for Normal Cost contributions. This is because Florida Statute requires the employers of certain defined contribution program participants to make UAL contributions based on their payroll. Thus, the total contribution shown is an arithmetic sum, but the actual contribution percentages will be determined on a blended rate basis so that employers pay the same contribution rate for Defined Benefit plan members and IP members.

Table 4-12 compares the legislated employer contribution rates to those calculated in the actuarial valuations for the prior plan years. The legislated rates for the 2013-2014 and 2014-2015 plan years were the same as the actuarially calculated rates in the 2012 and 2013 actuarial valuations, respectively. In the previous three years, the legislated rates were less than the actuarially calculated rates.

**Table 4-1
Florida Retirement System
Normal Cost Rates by Decrement
July 1, 2014**

| | Regular | Special Risk | Special Risk Administrative | ----- Elected Officers' Class ----- | | | Senior Management | DROP | Total |
|---|---------------|---------------|--------------------------------|-------------------------------------|---------------|---------------|----------------------|--------------------|---------------|
| | | | | Judicial | Leg-Atty-Cab | Local | | | |
| 1. Vested Benefits and Early Retirement | 1.18% | 1.73% | 1.45% | 1.41% | 3.29% | 2.69% | 1.20% | NA | 1.26% |
| 2. Regular Retirement | 3.51% | 10.83% | 3.51% | 11.57% | 4.71% | 7.34% | 4.65% | NA | 4.66% |
| 3. Non-Duty Death | 0.17% | 0.51% | 0.19% | 0.66% | 0.31% | 0.39% | 0.23% | NA | 0.23% |
| 4. Line of Duty Death | 0.18% | 0.38% | 0.29% | 0.33% | 0.28% | 0.31% | 0.21% | NA | 0.21% |
| 5. Non-Duty Disability | 0.11% | 0.14% | 0.09% | 0.29% | 0.14% | 0.16% | 0.13% | NA | 0.12% |
| 6. Line of Duty Disability | 0.01% | 0.28% | 0.01% | 0.02% | 0.01% | 0.01% | 0.01% | NA | 0.05% |
| 7. Refund of Employee Contributions | <u>0.57%</u> | <u>0.29%</u> | <u>0.63%</u> | <u>0.09%</u> | <u>0.54%</u> | <u>0.36%</u> | <u>0.61%</u> | <u>NA</u> | <u>0.53%</u> |
| 8. Total Normal Cost | 5.73% | 14.16% | 6.17% | 14.37% | 9.28% | 11.26% | 7.04% | NA | 7.06% |
| 9. Expected Employee Contributions ¹ | <u>-2.95%</u> | <u>-2.99%</u> | <u>-2.94%</u> | <u>-2.94%</u> | <u>-2.88%</u> | <u>-2.89%</u> | <u>-2.93%</u> | <u>NA</u> | <u>-2.96%</u> |
| 10. Employer Normal Cost | 2.78% | 11.17% | 3.23% | 11.43% | 6.40% | 8.37% | 4.11% | 4.10% ² | 4.10% |

¹ The actual rate of employee contribution is 3.00%. The rates shown are based on pay rates as of the date of the valuation and reflect actuarial methodology which includes the timing of salary increases, expected turnover and other decrements.

² DROP Normal Cost is set equivalent to System average Normal Cost.

Table 4-2
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Composite System
 (\$ in Thousands)

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|---------------------|--|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ (391,130) | 11.9758 | \$ (32,660) | 15 | \$ (387,166) | 10.9712 | \$ (35,289) |
| June 30, 2000 | Special Risk 65% In-Line-Of-Duty Disability (2000) | 17 | (2,535) | 12.5224 | (202) | 16 | (2,519) | 11.4866 | (219) |
| June 30, 2000 | Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000) | 17 | 322,940 | 12.5224 | 25,789 | 16 | 320,888 | 11.4866 | 27,936 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | (3,497,383) | 14.5250 | (240,784) | 20 | (3,515,109) | 13.3459 | (263,385) |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 6,742,885 | 16.6604 | 404,726 | 25 | 6,838,794 | 15.2734 | 447,759 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 21,160,090 | 16.6604 | 1,270,084 | 25 | 21,461,067 | 15.2734 | 1,405,130 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (6,189,513) | 16.6604 | (371,511) | 25 | (6,277,552) | 15.2734 | (411,013) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (1,279,575) | 16.6604 | (76,803) | 25 | (1,297,775) | 15.2734 | (84,970) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 1,141,038 | 17.0439 | 66,947 | 26 | 1,158,867 | 15.6129 | 74,225 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | (1,249,846) | 17.0439 | (73,331) | 26 | (1,269,375) | 15.6129 | (81,303) |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 2,763,236 | 17.4141 | 158,678 | 27 | 2,809,988 | 15.9386 | 176,301 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | (110,453) | 17.7714 | (6,215) | 28 | (112,454) | 16.2509 | (6,920) |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 2,765,537 | 18.1163 | 152,655 | 29 | 2,818,714 | 16.5505 | 170,310 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | 1,869,492 | | | 30 | 2,012,508 | 16.8379 | 119,523 |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(2,535,481)</u> | | | 30 | <u>(2,729,446)</u> | 16.8379 | <u>(162,102)</u> |
| | UAL as of Valuation Date | | \$ 21,509,301 | | \$ 1,277,372 | | \$ 21,829,431 | | Total: \$ 1,375,983 |
| | | | | | | | | | Projected FY 2015-2016 UAL Payroll: \$ 28,126,579 |
| | | | | | | | | | NC Rate: 4.10% |
| | | | | | | | | | UAL Contribution Rate: 4.89% |
| | | | | | | | | | NCR + UALR: 8.99% |

**Table 4-3
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Regular Class
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|---------------------|--|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ (297,961) | 11.9758 | \$ (24,880) | 15 | \$ (294,941) | 10.9712 | \$ (26,883) |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | (3,089,757) | 14.5250 | (212,720) | 20 | (3,105,417) | 13.3459 | (232,687) |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 5,484,953 | 16.6604 | 329,221 | 25 | 5,562,970 | 15.2734 | 364,227 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 33,694,911 | 16.6604 | 2,022,457 | 25 | 34,174,180 | 15.2734 | 2,237,502 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (26,430,602) | 16.6604 | (1,586,434) | 25 | (26,806,545) | 15.2734 | (1,755,117) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (1,005,955) | 16.6604 | (60,380) | 25 | (1,020,264) | 15.2734 | (66,800) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 1,271,973 | 17.0439 | 74,629 | 26 | 1,291,848 | 15.6129 | 82,742 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | (1,614,726) | 17.0439 | (94,739) | 26 | (1,639,956) | 15.6129 | (105,038) |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 1,366,873 | 17.4141 | 78,492 | 27 | 1,389,999 | 15.9386 | 87,210 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | 490,062 | 17.7714 | 27,576 | 28 | 498,941 | 16.2509 | 30,702 |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 1,679,939 | 18.1163 | <u>92,731</u> | 29 | 1,712,242 | 16.5505 | 103,456 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | 547,369 | | | 30 | 589,243 | 16.8379 | 34,995 |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(1,148,660)</u> | | | 30 | <u>(1,236,533)</u> | 16.8379 | <u>(73,438)</u> |
| | UAL as of Valuation Date | | \$ 10,948,418 | | \$ 645,953 | | \$ 11,115,766 | | Total: \$ 680,869 |
| | | | | | | | | | Projected FY 2015-2016 UAL Payroll: \$ 21,614,100 |
| | | | | | | | | | NC Rate: 2.78% |
| | | | | | | | | | UAL Contribution Rate: 3.15% |
| | | | | | | | | | NCR + UALR: 5.93% |

**Table 4-4
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Special Risk Class
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|---------------------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|---------------------|--|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ (90,210) | 11.9758 | \$ (7,533) | 15 | \$ (89,295) | 10.9712 | \$ (8,139) |
| June 30, 2000 | Special Risk 65% In-Line-Of-Duty Disability (2000) | 17 | (2,586) | 12.5224 | (207) | 16 | (2,570) | 11.4866 | (224) |
| June 30, 2000 | Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000) | 17 | 322,940 | 12.5224 | 25,789 | 16 | 320,888 | 11.4866 | 27,936 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | (631,210) | 14.5250 | (43,457) | 20 | (634,409) | 13.3459 | (47,536) |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 538,739 | 16.6604 | 32,337 | 25 | 546,402 | 15.2734 | 35,775 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 7,423,692 | 16.6604 | 445,590 | 25 | 7,529,285 | 15.2734 | 492,968 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (2,463,381) | 16.6604 | (147,859) | 25 | (2,498,420) | 15.2734 | (163,580) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (187,887) | 16.6604 | (11,277) | 25 | (190,559) | 15.2734 | (12,477) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | (404,117) | 17.0439 | (23,710) | 26 | (410,432) | 15.6129 | (26,288) |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | 451,570 | 17.0439 | 26,495 | 26 | 458,626 | 15.6129 | 29,375 |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 254,733 | 17.4141 | 14,628 | 27 | 259,042 | 15.9386 | 16,253 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | (546,481) | 17.7714 | (30,751) | 28 | (556,382) | 16.2509 | (34,237) |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 480,827 | 18.1163 | <u>26,541</u> | 29 | 490,073 | 16.5505 | 29,611 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | 1,233,860 | | | 30 | 1,328,250 | 16.8379 | 78,885 |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(804,525)</u> | | | 30 | <u>(866,071)</u> | 16.8379 | <u>(51,436)</u> |
| UAL as of Valuation Date | | | \$ 5,575,964 | | \$ 306,586 | | \$ 5,684,429 | | Total: \$ 366,886 |
| | | | | | | | | | Projected FY 2015-2016 UAL Payroll: \$ 3,435,022 |
| | | | | | | | | | NC Rate: 11.17% |
| | | | | | | | | | UAL Contribution Rate: 10.68% |
| | | | | | | | | | NCR + UALR: 21.85% |

**Table 4-5
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Special Risk Administrative Support Class
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|-------------------------------|---------------------------------------|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ (324) | 11.9758 | \$ (27) | 15 | \$ (321) | 10.9712 | \$ (29) |
| June 30, 2000 | Special Risk 65% In-Line-Of-Duty Disability (2000) | 17 | 51 | 12.5224 | 4 | 16 | 51 | 11.4866 | 4 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | 10,538 | 14.5250 | 725 | 20 | 10,591 | 13.3459 | 794 |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 1,296 | 16.6604 | 78 | 25 | 1,314 | 15.2734 | 86 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 19,481 | 16.6604 | 1,169 | 25 | 19,758 | 15.2734 | 1,294 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (21,620) | 16.6604 | (1,298) | 25 | (21,927) | 15.2734 | (1,436) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | 0 | 16.6604 | 0 | 25 | 0 | 15.2734 | 0 |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 1,163 | 17.0439 | 68 | 26 | 1,181 | 15.6129 | 76 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | (530) | 17.0439 | (31) | 26 | (539) | 15.6129 | (34) |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 2,785 | 17.4141 | 160 | 27 | 2,832 | 15.9386 | 178 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | 575 | 17.7714 | 32 | 28 | 585 | 16.2509 | 36 |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 2,737 | 18.1163 | 151 | 29 | 2,790 | 16.5505 | 169 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | (5,329) | | | 30 | (5,737) | 16.8379 | (341) |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>6,038</u> | | | 30 | <u>6,500</u> | 16.8379 | <u>386</u> |
| | UAL as of Valuation Date | | \$ 16,860 | | \$ 1,032 | | \$ 17,079 | Total: | \$ 1,182 |
| | | | | | | | Projected FY 2015-2016 UAL Payroll: | | \$ 3,329 |
| | | | | | | | | NC Rate: | 3.23% |
| | | | | | | | | UAL Contribution Rate: | 35.49% |
| | | | | | | | | NCR + UALR: | 38.72% |

**Table 4-6
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Elected Officers' Class: Judicial Subclass
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|--|-------------------------------|---------------------------------------|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ 42 | 11.9758 | \$ 3 | 15 | \$ 41 | 10.9712 | \$ 4 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | 27,844 | 14.5250 | 1,917 | 20 | 27,985 | 13.3459 | 2,097 |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 19,801 | 16.6604 | 1,189 | 25 | 20,083 | 15.2734 | 1,315 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 500,919 | 16.6604 | 30,066 | 25 | 508,044 | 15.2734 | 33,263 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (271,730) | 16.6604 | (16,310) | 25 | (275,595) | 15.2734 | (18,044) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (25,025) | 16.6604 | (1,502) | 25 | (25,381) | 15.2734 | (1,662) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | (21,702) | 17.0439 | (1,273) | 26 | (22,041) | 15.6129 | (1,412) |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | 3,120 | 17.0439 | 183 | 26 | 3,168 | 15.6129 | 203 |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 82,333 | 17.4141 | 4,728 | 27 | 83,726 | 15.9386 | 5,253 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | 6,427 | 17.7714 | 362 | 28 | 6,544 | 16.2509 | 403 |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 104,011 | 18.1163 | <u>5,741</u> | 29 | 106,011 | 16.5505 | 6,405 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | 22,408 | | | 30 | 24,122 | 16.8379 | 1,433 |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(49,550)</u> | | | 30 | <u>(53,341)</u> | 16.8379 | <u>(3,168)</u> |
| | UAL as of Valuation Date | | \$ 398,898 | | \$ 25,104 | | \$ 403,367 | | Total: \$ 26,090 |
| | | | | | | | Projected FY 2015-2016 UAL Payroll: | | \$ 106,744 |
| | | | | | | | | NC Rate: | 11.43% |
| | | | | | | | | UAL Contribution Rate: | <u>24.44%</u> |
| | | | | | | | | NCR + UALR: | 35.87% |

**Table 4-7
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Elected Officers' Class: Legislature/Attorney/Cabinet Subclass
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|-------------------------------|---------------------------------------|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ 2 | 11.9758 | \$ 0 | 15 | \$ 2 | 10.9712 | \$ 0 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | 2,096 | 14.5250 | 144 | 20 | 2,107 | 13.3459 | 158 |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 1,987 | 16.6604 | 119 | 25 | 2,015 | 15.2734 | 132 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 60,867 | 16.6604 | 3,653 | 25 | 61,732 | 15.2734 | 4,042 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (34,809) | 16.6604 | (2,089) | 25 | (35,304) | 15.2734 | (2,312) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (790) | 16.6604 | (47) | 25 | (801) | 15.2734 | (52) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 2,825 | 17.0439 | 166 | 26 | 2,870 | 15.6129 | 184 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | 128 | 17.0439 | 8 | 26 | 130 | 15.6129 | 8 |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 8,299 | 17.4141 | 477 | 27 | 8,439 | 15.9386 | 529 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | (3,876) | 17.7714 | (218) | 28 | (3,946) | 16.2509 | (243) |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 18,463 | 18.1163 | <u>1,019</u> | 29 | 18,818 | 16.5505 | 1,137 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | (2,689) | | | 30 | (2,895) | 16.8379 | (172) |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(829)</u> | | | 30 | <u>(892)</u> | 16.8379 | <u>(53)</u> |
| | | UAL as of Valuation Date | \$ 51,675 | | \$ 3,231 | | \$ 52,276 | | Total: \$ 3,359 |
| | | | | | | | Projected FY 2015-2016 UAL Payroll: | | \$ 7,012 |
| | | | | | | | | NC Rate: | 6.40% |
| | | | | | | | | UAL Contribution Rate: | <u>47.90%</u> |
| | | | | | | | | NCR + UALR: | 54.30% |

**Table 4-8
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Elected Officers' Class: Local Subclass
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|--|-------------------------------|---------------------------------------|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ 5 | 11.9758 | \$ 0 | 15 | \$ 5 | 10.9712 | \$ 0 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | 35,244 | 14.5250 | 2,426 | 20 | 35,423 | 13.3459 | 2,654 |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 11,554 | 16.6604 | 693 | 25 | 11,718 | 15.2734 | 767 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 237,153 | 16.6604 | 14,235 | 25 | 240,526 | 15.2734 | 15,748 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (58,718) | 16.6604 | (3,524) | 25 | (59,553) | 15.2734 | (3,899) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (7,168) | 16.6604 | (430) | 25 | (7,270) | 15.2734 | (476) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 2,068 | 17.0439 | 121 | 26 | 2,100 | 15.6129 | 135 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | 295 | 17.0439 | 17 | 26 | 300 | 15.6129 | 19 |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 13,712 | 17.4141 | 787 | 27 | 13,944 | 15.9386 | 875 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | (5,571) | 17.7714 | (313) | 28 | (5,672) | 16.2509 | (349) |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 106,622 | 18.1163 | <u>5,885</u> | 29 | 108,672 | 16.5505 | 6,566 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | (21,377) | | | 30 | (23,012) | 16.8379 | (1,367) |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>(9,498)</u> | | | 30 | <u>(10,225)</u> | 16.8379 | <u>(607)</u> |
| | UAL as of Valuation Date | | \$ 304,320 | | \$ 19,898 | | \$ 306,955 | | Total: \$ 20,066 |
| | | | | | | | Projected FY 2015-2016 UAL Payroll: | | \$ 44,295 |
| | | | | | | | | NC Rate: | 8.37% |
| | | | | | | | | UAL Contribution Rate: | <u>45.30%</u> |
| | | | | | | | | NCR + UALR: | 53.67% |

**Table 4-9
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
Senior Management Service Class
(\$ in Thousands)**

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---|-------------------------------|---------------------------------------|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 1999 | Assumption Change from 1998 Experience Study | 16 | \$ (2,685) | 11.9758 | \$ (224) | 15 | \$ (2,657) | 10.9712 | \$ (242) |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | 216,486 | 14.5250 | 14,904 | 20 | 217,583 | 13.3459 | 16,303 |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 63,698 | 16.6604 | 3,823 | 25 | 64,604 | 15.2734 | 4,230 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | 1,240,607 | 16.6604 | 74,465 | 25 | 1,258,253 | 15.2734 | 82,382 |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | (281,593) | 16.6604 | (16,902) | 25 | (285,598) | 15.2734 | (18,699) |
| June 30, 2009 | 2009-2010 Plan Changes (HB 479) | 26 | (52,749) | 16.6604 | (3,166) | 25 | (53,499) | 15.2734 | (3,503) |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 34,239 | 17.0439 | 2,009 | 26 | 34,774 | 15.6129 | 2,227 |
| June 30, 2010 | 2010-2011 Plan Changes (SB 2100) | 27 | (89,703) | 17.0439 | (5,263) | 26 | (91,104) | 15.6129 | (5,835) |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 128,777 | 17.4141 | 7,395 | 27 | 130,956 | 15.9386 | 8,216 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | 65,822 | 17.7714 | 3,704 | 28 | 67,014 | 16.2509 | 4,124 |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 368,024 | 18.1163 | <u>20,315</u> | 29 | 375,100 | 16.5505 | 22,664 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | (136,339) | | | 30 | (146,769) | 16.8379 | (8,717) |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | <u>55,012</u> | | | 30 | <u>59,220</u> | 16.8379 | <u>3,517</u> |
| | UAL as of Valuation Date | | \$ 1,609,596 | | \$ 101,059 | | \$ 1,627,877 | | Total: \$ 106,668 |
| | | | | | | | Projected FY 2015-2016 UAL Payroll: \$ | | 517,489 |
| | | | | | | | | NC Rate: | 4.11% |
| | | | | | | | | UAL Contribution Rate: | <u>20.61%</u> |
| | | | | | | | | NCR + UALR: | <u>24.72%</u> |

Table 4-10
Florida Retirement System
Unfunded Actuarial Liability (UAL) Bases
July 1, 2014
DROP
 (\$ in Thousands)

| (a) | (b) | (c) | (d) | (e) | (f) = (d) / (e) | (g) | (h) | (i) | (j) = (h) / (i) |
|------------------|---|---|------------------------------|---------------------|---------------------------------------|--|---------------------------------------|---------------------|--|
| Date Established | Description | Remaining Payments as of Valuation Date | Balance as of Valuation Date | Amortization Factor | Amortization Payment for FY 2014-2015 | Remaining Payments one year after Valuation Date | Balance One Year After Valuation Date | Amortization Factor | Amortization Payment for FY 2015-2016 |
| June 30, 2004 | Assumption Change from 2003 Experience Study | 21 | \$ (68,624) | 14.5250 | \$ (4,725) | 20 | \$ (68,972) | 13.3459 | \$ (5,168) |
| June 30, 2009 | Assumption Change from 2008 Experience Study | 26 | 620,857 | 16.6604 | 37,265 | 25 | 629,688 | 15.2734 | 41,228 |
| June 30, 2009 | 2008-2009 Experience (Gains) / Losses | 26 | (22,017,539) | 16.6604 | (1,321,551) | 25 | (22,330,712) | 15.2734 | (1,462,069) |
| June 30, 2009 | Unrecognized (Gains)/Losses while in Surplus | 26 | 23,372,939 | 16.6604 | 1,402,905 | 25 | 23,705,391 | 15.2734 | 1,552,074 |
| June 30, 2010 | 2009-2010 Experience (Gains) / Losses | 27 | 254,589 | 17.0439 | 14,937 | 26 | 258,567 | 15.6129 | 16,561 |
| June 30, 2011 | 2010-2011 Experience (Gains) / Losses | 28 | 905,725 | 17.4141 | 52,011 | 27 | 921,049 | 15.9386 | 57,787 |
| June 30, 2012 | 2011-2012 Experience (Gains) / Losses | 29 | (117,412) | 17.7714 | (6,607) | 28 | (119,539) | 16.2509 | (7,356) |
| June 30, 2013 | 2012-2013 Experience (Gains) / Losses | 30 | 4,914 | 18.1163 | 271 | 29 | 5,009 | 16.5505 | 303 |
| June 30, 2014 | Assumption/Method Change from 2013 Experience Study | | 231,589 | | | 30 | 249,306 | 16.8379 | 14,806 |
| June 30, 2014 | 2013-2014 Experience (Gains) / Losses | | (583,469) | | | 30 | (628,104) | 16.8379 | (37,303) |
| | UAL as of Valuation Date | | \$ 2,603,570 | | \$ 174,508 | | \$ 2,621,683 | | Total: \$ 170,863 |
| | | | | | | | | | Projected FY 2015-2016 UAL Payroll: \$ 2,398,588 |
| | | | | | | | | | NC Rate: 4.10% |
| | | | | | | | | | UAL Contribution Rate: 7.12% |
| | | | | | | | | | NCR + UALR: 11.22% |

**Table 4-11
Florida Retirement System
Actuarially Calculated Employer Contribution Rates
July 1, 2014 Valuation for Fiscal Year Beginning July 1, 2015**

| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- | | | Senior Management | Composite (excluding DROP) | DROP ¹ | Composite (including DROP) |
|---|---------|--------------|--------------------------------|-------------------------------|--------------|--------|----------------------|-------------------------------|-------------------|-------------------------------|
| | | | | Judicial | Leg-Atty-Cab | Local | | | | |
| 1. Employer Normal Cost | 2.78% | 11.17% | 3.23% | 11.43% | 6.40% | 8.37% | 4.11% | 4.10% ² | 4.10% | 4.10% |
| 2. UAL Cost | 3.15% | 10.68% | 35.49% | 24.44% | 47.90% | 45.30% | 20.61% | 4.68% | 7.12% | 4.89% |
| 3. Total Employer Cost [(1) + (2)] | 5.93% | 21.85% | 38.72% | 35.87% | 54.30% | 53.67% | 24.72% | 8.78% | 11.22% | 8.99% |
| 4. UAL Cost Paid from Surplus | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 5. Rate Reduction from Surplus | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 6. Total Adjusted Employer Contribution for FRS Trust Fund [(3) + (4) + (5)] | 5.93% | 21.85% | 38.72% | 35.87% | 54.30% | 53.67% | 24.72% | 8.78% | 11.22% | 8.99% |

¹ DROP rates are special charges to cover the assumed cost of DROP participants; they are not Normal Cost or UAL Cost in the traditional sense. See Section G of Executive Summary for discussion of the DROP contribution rate.

² Due to the assumption and methodology changes implemented, this year the composite contribution rate is 0.57% less than last year's rate of 4.67%.

Table 4-12
Florida Retirement System
Actuarially Calculated vs. Legislated Defined Benefit Plan Contribution Rates (Before Blending) ^{1 & 2}

Plan Year 2013-2014 and Plan Year 2014-2015 rates were set equal to the actuarially calculated rates
 Plan Year 2015-2016 rates will be set by the Legislature during the 2015 Legislative Session

| Membership Class | Plan Year 2013-2014 | | Plan Year 2014-2015 | | Plan Year 2015-2016 | |
|---|------------------------|------------|------------------------|------------|------------------------|------------|
| | Actuarially Calculated | Legislated | Actuarially Calculated | Legislated | Actuarially Calculated | Legislated |
| 1. Regular | 6.09% | 6.09% | 6.54% | 6.54% | 5.93% | TBD |
| 2. Special Risk | 18.88% | 18.88% | 19.71% | 19.71% | 21.85% | TBD |
| 3. Special Risk Administrative | 45.91% | 45.91% | 55.12% | 55.12% | 38.72% | TBD |
| 4. Elected Officers' Class - Judicial | 28.37% | 28.37% | 33.71% | 33.71% | 35.87% | TBD |
| 5. Elected Officers' Class - Leg-Atty-Cab | 40.92% | 40.92% | 56.99% | 56.99% | 54.30% | TBD |
| 6. Elected Officers' Class - Local | 41.87% | 41.87% | 54.22% | 54.22% | 53.67% | TBD |
| 7. Senior Management Service | 21.01% | 21.01% | 24.79% | 24.79% | 24.72% | TBD |
| 8. Composite without DROP | 8.37% | 8.37% | 8.99% | 8.99% | 8.78% | TBD |
| 9. DROP | 11.64% | 11.64% | 11.02% | 11.02% | 11.22% | TBD |
| 10. Composite with DROP | 8.67% | 8.67% | 9.17% | 9.17% | 8.99% | TBD |

¹ The above rates (applied to DB plan payroll) are combined with the Investment Plan contribution rates (applied to IP payroll) to derive the uniform blended rates employers contribute.

² Contribution rates show above do not include the 3% required employee contribution rate.

5. Accounting Statement

The liabilities presented in this report differ by whether future anticipated salary increases or service credits are included in the calculation. Actuarial Liabilities in Section 3 include the effects of projected future salary increases and service credits.

Accounting Standards Codification (ASC) 960 – Plan Accounting – Defined Benefit Pension Plans, formerly titled Statement No. 35 of the Financial Accounting Standards Board (FASB) previously required the FRS to disclose certain information regarding the Plan's funded status. ASC accounting liabilities do not include either future salary increases or future service credits.

Statement No. 67 of the Governmental Standards Board (GASB) is the new standard for disclosure of pension information for the standalone financial reporting by public systems. The GASB 67 information for FRS will be provided under separate cover.

The ASC 960 disclosures are intended to provide a “snap shot” view of how the Plan's assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. The Accrued Benefits Obligation (ABO) is determined based on each member's accrued benefit, that is, the benefit based on employee service and compensation earned up to the valuation date. We assume that the plan is ongoing and that members continue to terminate employment, retire, and otherwise act in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.65% per annum.

Table 5-1 presents the ABO for the FRS determined as of July 1, 2014. All of the calculations presented in that table are based on the actuarial assumptions used in the valuation, as described in Appendix A, except salaries are not projected to increase. Values of the ABO are shown by type of member and by class. The active members' values are also divided between the employee-financed (accumulated member contributions) and employer-financed portions, with the employer-financed portions shown separately for vested benefits and non-vested benefits. For purposes of calculating the ABO, post-Senate Bill 2100, we based the COLA percentage on 3% multiplied by service through June 30, 2011, divided by projected service at the time of retirement.

Table 5-2 presents the total ABO for the FRS for the current and two prior valuations. The trend of the FRS's funded status, as measured by the ABO over a period of time, is one indication of the progress being made in accumulating sufficient assets to pay benefits when due. Past and future results are affected by changes in actuarial assumptions, benefit provisions, and accounting policies.

Table 5-3 reconciles the ABO determined as of the prior valuation, July 1, 2013, to the ABO as of July 1, 2014. This reconciliation indicates the impact of the assumption changes and plan changes, if any.

Table 5-4 presents the Net Pension Obligation under GASB Statement No. 27. This Statement requires the Actuarial Accrued Liability (AAL) to be compared with the Actuarial Value of Assets used for funding purposes. GASB Statement No. 27 is not applicable after plan year 2013-2014. GASB 67 accounting information will be provided under separate cover.

Table 5-1
Florida Retirement System
Accumulated Benefit Obligation - ASC 960
July 1, 2014
 (All Amounts in Thousands)

| | Special Risk | | -- Elected Officers' Class -- | | | Senior | DROP | Total | |
|--|----------------|---------------|-------------------------------|-----------|--------------|-----------|-------------|--------------|----------------|
| | Regular | Special Risk | Administrative | Judicial | Leg-Atty-Cab | Local | | | Management |
| A. Accumulated Benefit Obligation | | | | | | | | | |
| 1. Active Members | | | | | | | | | |
| a. Accumulated Member Contributions | \$1,474,869 | \$271,469 | \$271 | \$8,715 | \$610 | \$3,679 | \$42,010 | \$0 | \$1,801,623 |
| b. Employer-Financed Vested Benefits | 20,582,427 | 6,041,886 | 8,047 | 271,694 | 14,922 | 103,530 | 907,327 | 0 | 27,929,833 |
| c. Employer-Financed Non-Vested Benefits | 865,846 | 220,440 | 361 | 8,826 | 864 | 5,040 | 22,901 | 0 | 1,124,278 |
| d. Total | \$22,923,142 | \$6,533,795 | \$8,679 | \$289,235 | \$16,396 | \$112,249 | \$972,238 | \$0 | \$30,855,734 |
| 2. Annuitants | \$62,949,814 | \$15,443,355 | \$73,713 | \$664,375 | \$71,697 | \$415,601 | \$2,084,133 | \$19,386,218 | \$101,088,906 |
| 3. Other Inactive Members | \$4,447,472 | \$720,788 | \$1,256 | \$19,593 | \$9,562 | \$21,358 | \$170,143 | \$0 | \$5,390,172 |
| 4. Total Accumulated Benefit Obligation | \$90,320,428 | \$22,697,938 | \$83,648 | \$973,203 | \$97,655 | \$549,208 | \$3,226,514 | \$19,386,218 | \$137,334,812 |
| B. Assets Available for Benefits | | | | | | | | | |
| 1. Market | \$103,102,549 | \$25,088,382 | \$78,298 | \$780,274 | \$58,406 | \$317,374 | \$2,385,247 | \$18,156,238 | \$149,966,768 |
| 2. Actuarial Basis | \$95,302,443 | \$23,190,349 | \$72,374 | \$721,243 | \$53,987 | \$293,363 | \$2,204,794 | \$16,782,648 | \$138,621,201 |
| C. Unfunded / (Surplus) Total Accumulated Benefit Obligation, | | | | | | | | | |
| Assets at: | | | | | | | | | |
| 1. Market | (\$12,782,121) | (\$2,390,444) | \$5,350 | \$192,929 | \$39,249 | \$231,834 | \$841,267 | \$1,229,980 | (\$12,631,956) |
| 2. Actuarial Basis | (\$4,982,015) | (\$492,411) | \$11,274 | \$251,960 | \$43,668 | \$255,845 | \$1,021,720 | \$2,603,570 | (\$1,286,389) |
| D. Percent of Accumulated Obligation Funded, | | | | | | | | | |
| Assets at: | | | | | | | | | |
| 1. Market | 114.15% | 110.53% | 93.60% | 80.18% | 59.81% | 57.79% | 73.93% | 93.66% | 109.20% |
| 2. Actuarial Basis | 105.52% | 102.17% | 86.52% | 74.11% | 55.28% | 53.42% | 68.33% | 86.57% | 100.94% |

Table 5-2
Florida Retirement System
Analysis of Funding Progress - ASC 960
 (All Amounts in Thousands)

| | July 1, 2012 Valuation Basis | July 1, 2013 Valuation Basis | July 1, 2014 Valuation Basis |
|--|---------------------------------|---------------------------------|---------------------------------|
| A. Accumulated Benefit Obligation | | | |
| 1. Active Members | | | |
| a. Accumulated Member Contributions | \$681,638 | \$1,228,277 | \$1,801,623 |
| b. Employer-Financed Vested Benefits | 25,988,973 | 25,782,555 | 27,929,833 |
| c. Employer-Financed Non-Vested Benefits | 1,540,804 | 1,359,236 | 1,124,278 |
| d. Total | \$28,211,415 | \$28,370,068 | \$30,855,734 |
| 2. Annuitants | \$69,915,462 | \$74,843,720 | \$81,702,688 |
| 3. Other Inactive Members | \$5,059,727 | \$5,234,608 | \$5,390,172 |
| 4. DROP | \$19,245,727 | \$20,597,701 | \$19,386,218 |
| 5. Total Accumulated Benefit Obligation | \$122,432,331 | \$129,046,097 | \$137,334,812 |
| B. Assets Available for Benefits | | | |
| 1. Market | \$122,921,388 | \$133,027,956 | \$149,966,768 |
| 2. Actuarial Basis | \$127,891,781 | \$131,680,617 | \$138,621,201 |
| C. Unfunded/(Surplus) Total Accumulated Benefit Obligation, Assets at: | | | |
| 1. Market | (\$489,057) | (\$3,981,859) | (\$12,631,956) |
| 2. Actuarial Basis | (\$5,459,450) | (\$2,634,518) | (\$1,286,389) |
| D. Percent of Accumulated Benefit Obligation Funded, Assets at: | | | |
| 1. Market | 100.40% | 103.09% | 109.20% |
| 2. Actuarial Basis | 104.46% | 102.04% | 100.94% |
| E. Annual Salaries ¹ | \$24,491,371 | \$24,568,642 | \$24,723,565 |
| F. Unfunded/(Surplus) Accumulated Benefit Obligation as a Percent of Salary, Assets at: | | | |
| 1. Market | -2.00% | -16.21% | -51.09% |
| 2. Actuarial Basis | -22.29% | -10.72% | -5.20% |

¹ Includes Drop Salaries

Table 5-3
Florida Retirement System
Statement of Changes in Accumulated
Benefit Obligation
 (All Amounts in Thousands)

| | <u>ASC 960 Basis</u> |
|--|--------------------------|
| Accumulated Benefit Obligation at July 1, 2013 | \$129,046,097 |
| Increase (Decrease) During Year Attributable to: | |
| Increase for Interest Due to Decrease in Discount Period | \$9,664,671 |
| Benefits Paid - PY 2014 | (\$8,846,383) |
| Benefits Accrued, & Other Gains/Losses | \$4,139,740 |
| Plan Provision / Assumption Changes | \$3,330,687 |
| Net Increase (Decrease) | \$8,288,715 |
| Accumulated Benefit Obligation at July 1, 2014 | \$137,334,812 |

Table 5-4
Florida Retirement System
Net Pension Obligation - GASB Statement #27
 (All Amounts in Thousands)

| | ACTUAL | | PROJECTED |
|---|-----------------------------|-----------------------------|-----------------------------|
| | <u>7/1/2012 - 6/30/2013</u> | <u>7/1/2013 - 6/30/2014</u> | <u>7/1/2014 - 6/30/2015</u> |
| 1. Unfunded Actuarial Liability (UAL) / (Surplus) | \$18,956,422 | \$20,157,815 | NA |
| 2. Amortization of UAL | 1,026,055 | 1,091,082 | NA |
| 3. Normal Cost | <u>1,065,288</u> | <u>1,081,164</u> | <u>NA</u> |
| 4. Annual Required Contribution: [2 + 3] | \$2,091,343 | \$2,172,247 | NA |
| 5. Interest on Net Pension Obligation: | 16,332 | 71,172 | NA |
| 6. Adjustment to Annual Required Contribution: | <u>(11,406)</u> | <u>(49,707)</u> | <u>NA</u> |
| 7. Annual Pension Cost: [4 + 5 + 6] | \$2,096,269 | \$2,193,712 | NA |
| 8. Contributions Made: | <u>\$1,388,656</u> | <u>\$2,273,347</u> | <u>NA</u> |
| 9. Percent Contributed: [8 / 4] | 66% | 105% | NA |
| 10. Increase in Net Pension Obligation: [7 - 8] | 707,613 | (79,635) | NA |
| 11. Net Pension Obligation at Beginning of Year: | <u>210,731</u> | <u>918,344</u> | <u>NA</u> |
| 12. Net Pension Obligation at End of Year: | 918,344 | 838,709 | NA |

Appendix A: Actuarial Methods, Procedures and Assumptions

The actuarial assumptions are intended to estimate the future experience of the members of the FRS and of the FRS in other areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the FRS' benefits.

Assumption Tables

A complete listing of all the assumptions, methods and procedures that are used in the 2014 actuarial valuation of FRS are summarized on the following pages. These assumptions, methods, and procedures were approved by the 2014 Actuarial Assumptions Conference and are based on the 2014 Experience Study.

Data

Except where noted, the analysis in this study was based on data as of June 30, 2014, as provided by the Division. The data used in this valuation consist of financial information and records of age, service and income of active members, annuitants, and other inactive members entitled to future benefits. The Division is solely responsible for the validity, accuracy and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

Methods and Procedures

Actuarial cost method: The total cost of FRS, over time, will be equal to the benefits paid and expenses less investment earnings and is not affected directly by the actuarial cost method. The actuarial cost method is simply a tool to allocate costs to past, current or future years and thus primarily affects the timing of cost recognition.

FRS uses Entry Age Normal (EAN), which is by far the most commonly used cost method for state pension systems. Conceptually, EAN sets the normal cost rate level as a percent of payroll over a member's full projected working career. There are different categories of EAN, including Individual EAN, which is the most commonly used EAN category, and Ultimate EAN, which is the category of EAN used by FRS. Even each category of EAN contains different interpretations of how to calculate the key metrics. New GASB Standards Nos. 67 & 68 mandate the use of a particular interpretation of Individual EAN for financial reporting purposes. GASB 67 information for FRS will be provided under separate cover.

Sponsors have autonomy to choose any cost method and identify any variation of that cost method for purposes of setting system funding policy. Ultimate EAN, which is used by FRS, sets normal cost as if each member was initially enrolled on or after July 1, 2011 (Tier II). As such, normal cost is lower for Ultimate EAN than for Individual EAN, which sets normal cost in a manner that representative of the tier in which the member actually participates. Cost methods do allocate benefits between past and projected future service, but do not affect the level of projected benefits; benefits are based on actual tier of membership under either Ultimate EAN or Individual EAN. Compared to the Individual EAN method, the Ultimate EAN allocates fewer projected benefits to future service (via lower normal cost) and hence produces a higher actuarial accrued liability for past service as a counterbalance.

The interpretation of Ultimate EAN used in this 2014 valuation sets normal cost rates as if each member in the System was in Tier II as noted above. The projected future service period used for calculating the present value of future normal costs is based on Tier I retirement timing assumptions for members in Tier I. This is a

change from the interpretation of Ultimate EAN used in the 2013 valuation. The normal cost rate is the same under both the 2013 and 2014 methodology, but under the 2013 methodology, the present value of future normal costs was based on Tier II retirement timing assumptions for all members.

Additional detail on the alternate interpretations of Ultimate EAN and their estimated impact on actuarial accrued liability calculations can be found in the Executive Summary of our 2013 actuarial valuation report.

UAL amortization method: The Unfunded Actuarial Liability (UAL) is amortized as a level percentage of projected payroll on which UAL Rates are charged in an effort to maintain level contribution rates as a percentage of payroll during the specified amortization period if future experience follows assumption. We recommend this methodology continue.

New UAL arises each year and is calculated in each new actuarial valuation. The newly arising UAL can be either positive or negative, and can be due either to experience varying from assumption or to changes in actuarial liability from modifications to assumptions, plan provisions or actuarial methods. Each year's newly arising UAL is currently amortized over a closed 30-year period as a level percent of the projected payroll on which UAL rates are charged.

Amortization periods longer than 20 years can incur significant negative amortization, wherein the calculated UAL increases for an extended period of time prior to final payoff even if all contributions are made and all assumptions are met. This was discussed and illustrated in Milliman's August 11, 2014 presentation materials to the Assumptions Conference Principals.

Asset valuation method: The method recognizes actual investment performance different from the long-term assumption systematically. The expected actuarial value of assets is determined by crediting the rate of investment return assumed in our valuation (7.75% through June 30, 2014; 7.65% beginning July 1, 2014) to the prior year's actuarial value of assets. Then, 20% of the difference between the actual market value and the expected actuarial value of assets is recognized. To insure that the AVA remains reasonably close to the MVA, the asset method includes a corridor whereby the AVA must remain within 80% to 120% of MVA.

Economic Assumptions

| Assumption | |
|-------------------|--------------------------------|
| Inflation | 2.60% |
| Real wage growth | 0.65% |
| Payroll growth | 3.25% (sum of above two items) |
| Investment Return | 7.65% |

Demographic Assumptions

Mortality

Healthy Mortality (Pre-Retirement and Post-Retirement)

- Female Non-Disabled: RP2000 Generational, 100% Annuitant White Collar, Scale BB
- Male Non-Disabled (other than Special Risk): RP2000 Generational, 50% Annuitant White Collar / 50% Annuitant Blue Collar, Scale BB
- Male Non-Disabled (Special Risk): RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB

Disabled Mortality

- Female Disabled (other than Special Risk): RP2000, 100% Disabled Female set forward two years, no projection scale
- Female Disabled (Special Risk): 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale
- Male Disabled (other than Special Risk): RP2000, 100% Disabled Male setback four years, no projection scale
- Male Disabled (Special Risk): 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale

**Retirement Assumptions (Tier I)
DROP Entry at first retirement eligibility**

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|-------|-------------------------------------|-------|-----------|-------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 48 | 27.0% | 23.0% | 20.0% | 30.0% | 30.0% | 30.0% |
| 49 | 27.0% | 23.0% | 20.0% | 30.0% | 32.5% | 32.5% |
| 50 | 27.0% | 23.0% | 20.0% | 30.0% | 35.0% | 35.0% |
| 51 | 27.0% | 23.0% | 20.0% | 40.0% | 37.5% | 37.5% |
| 52 | 27.0% | 23.0% | 30.0% | 50.0% | 40.0% | 40.0% |
| 53 | 27.0% | 23.0% | 20.0% | 50.0% | 42.5% | 42.5% |
| 54 | 27.0% | 23.0% | 20.0% | 50.0% | 45.0% | 45.0% |
| 55 | 33.0% | 30.0% | 31.0% | 29.0% | 47.5% | 47.5% |
| 56 | 33.0% | 30.0% | 20.0% | 5.0% | 50.0% | 50.0% |
| 57 | 48.0% | 55.0% | 5.0% | 5.0% | 52.5% | 52.5% |
| 58 | 48.0% | 55.0% | 5.0% | 5.0% | 55.0% | 55.0% |
| 59 | 55.0% | 55.0% | 5.0% | 5.0% | 57.5% | 57.5% |
| 60 | 55.0% | 55.0% | 5.0% | 5.0% | 60.0% | 60.0% |
| 61 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 62 | 45.5% | 41.0% | 5.0% | 5.0% | 50.0% | 50.0% |
| 63 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 64 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 65 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 66 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 67 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 68 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 69 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 70-79 | 5.0% | 5.0% | 0.0% | 0.0% | 15.0% | 15.0% |
| 80 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Immediate Retirement at first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' (All Subclasses) | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 4.0% | 7.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 49 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 50 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 51 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 52 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 53 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 54 | 5.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 55 | 5.0% | 5.0% | 7.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 56 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 57 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 58 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 59 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 60 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 61 | 9.0% | 8.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 62 | 9.0% | 11.0% | 15.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 63 | 9.0% | 10.0% | 20.0% | 20.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 64 | 9.0% | 10.0% | 25.0% | 25.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 65 | 15.0% | 10.0% | 30.0% | 30.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 66 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 67 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 68 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 69 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 70-79 | 10.0% | 10.0% | 100.0% | 100.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier I) continued

Combined DROP/Immediate Retirement at first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' (All Subclasses) | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 24.0% | 30.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 31.0% | 27.0% | 24.0% | 37.0% | 40.0% | 40.0% | 35.0% | 35.0% |
| 49 | 31.0% | 27.0% | 24.0% | 37.0% | 42.5% | 42.5% | 37.5% | 37.5% |
| 50 | 31.0% | 27.0% | 27.0% | 37.0% | 45.0% | 45.0% | 40.0% | 40.0% |
| 51 | 31.0% | 27.0% | 27.0% | 47.0% | 47.5% | 47.5% | 42.5% | 42.5% |
| 52 | 31.0% | 27.0% | 37.0% | 57.0% | 50.0% | 50.0% | 45.0% | 45.0% |
| 53 | 31.0% | 27.0% | 27.0% | 57.0% | 52.5% | 52.5% | 47.5% | 47.5% |
| 54 | 32.0% | 27.0% | 27.0% | 57.0% | 55.0% | 55.0% | 50.0% | 50.0% |
| 55 | 38.0% | 35.0% | 38.0% | 35.0% | 57.5% | 57.5% | 52.5% | 52.5% |
| 56 | 40.0% | 35.0% | 26.0% | 11.0% | 60.0% | 60.0% | 55.0% | 55.0% |
| 57 | 55.0% | 60.0% | 11.0% | 11.0% | 62.5% | 62.5% | 57.5% | 57.5% |
| 58 | 55.0% | 60.0% | 11.0% | 11.0% | 65.0% | 65.0% | 65.0% | 65.0% |
| 59 | 62.0% | 60.0% | 11.0% | 11.0% | 67.5% | 67.5% | 67.5% | 67.5% |
| 60 | 62.0% | 60.0% | 11.0% | 11.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| 61 | 64.0% | 63.0% | 15.0% | 15.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 62 | 54.5% | 52.0% | 20.0% | 20.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| 63 | 14.0% | 15.0% | 25.0% | 25.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 64 | 14.0% | 15.0% | 30.0% | 30.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 65 | 20.0% | 15.0% | 35.0% | 35.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 66 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 67 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 68 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 69 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 70-79 | 15.0% | 15.0% | 100.0% | 100.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Deferred Retirement subsequent to first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|--------|-------------------------------------|--------|-----------|--------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 48 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 49 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 50 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 51 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 52 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 53 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 54 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 55 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 56 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 57 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 58 | 3.5% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 59 | 5.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 60 | 5.0% | 5.0% | 7.0% | 7.0% | 5.0% | 5.0% |
| 61 | 5.0% | 5.0% | 9.0% | 9.0% | 5.0% | 5.0% |
| 62 | 12.0% | 11.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 63 | 8.0% | 8.0% | 20.0% | 20.0% | 11.0% | 11.0% |
| 64 | 8.0% | 8.0% | 20.0% | 20.0% | 11.0% | 11.0% |
| 65 | 15.0% | 13.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 66 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 67 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 68 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 69 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 70-79 | 15.0% | 13.0% | 100.0% | 100.0% | 15.0% | 15.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier II)

DROP Entry at first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|-------|-------------------------------------|-------|-----------|-------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 20.0% | 23.0% | 0.0% | 0.0% |
| 48 | 27.0% | 23.0% | 20.0% | 30.0% | 30.0% | 30.0% |
| 49 | 27.0% | 23.0% | 20.0% | 30.0% | 32.5% | 32.5% |
| 50 | 27.0% | 23.0% | 20.0% | 30.0% | 35.0% | 35.0% |
| 51 | 27.0% | 23.0% | 20.0% | 40.0% | 37.5% | 37.5% |
| 52 | 27.0% | 23.0% | 30.0% | 50.0% | 40.0% | 40.0% |
| 53 | 27.0% | 23.0% | 20.0% | 50.0% | 42.5% | 42.5% |
| 54 | 27.0% | 23.0% | 20.0% | 50.0% | 45.0% | 45.0% |
| 55 | 33.0% | 30.0% | 20.0% | 50.0% | 47.5% | 47.5% |
| 56 | 33.0% | 30.0% | 20.0% | 50.0% | 50.0% | 50.0% |
| 57 | 48.0% | 55.0% | 20.0% | 50.0% | 52.5% | 52.5% |
| 58 | 48.0% | 55.0% | 20.0% | 50.0% | 55.0% | 55.0% |
| 59 | 55.0% | 55.0% | 20.0% | 50.0% | 57.5% | 57.5% |
| 60 | 55.0% | 55.0% | 31.0% | 29.0% | 60.0% | 60.0% |
| 61 | 55.0% | 55.0% | 20.0% | 5.0% | 62.5% | 62.5% |
| 62 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 63 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 64 | 55.0% | 55.0% | 5.0% | 5.0% | 62.5% | 62.5% |
| 65 | 45.5% | 41.0% | 5.0% | 5.0% | 50.0% | 50.0% |
| 66 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 67 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 68 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 69 | 5.0% | 5.0% | 5.0% | 5.0% | 15.0% | 15.0% |
| 70-79 | 5.0% | 5.0% | 0.0% | 0.0% | 15.0% | 15.0% |
| 80 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Immediate Retirement at first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' (All Subclasses) | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 4.0% | 7.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 49 | 4.0% | 4.0% | 4.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 50 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 51 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 52 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 53 | 4.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 54 | 5.0% | 4.0% | 7.0% | 7.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 55 | 5.0% | 5.0% | 7.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 56 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 57 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 58 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 59 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 60 | 7.0% | 5.0% | 6.0% | 6.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 61 | 9.0% | 8.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 62 | 9.0% | 8.0% | 15.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 63 | 9.0% | 8.0% | 20.0% | 20.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 64 | 9.0% | 8.0% | 25.0% | 25.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 65 | 15.0% | 11.0% | 30.0% | 30.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 66 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 67 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 68 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 69 | 10.0% | 10.0% | 35.0% | 35.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 70-79 | 10.0% | 10.0% | 100.0% | 100.0% | 10.0% | 10.0% | 5.0% | 5.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Retirement Assumptions (Tier II) continued

Combined DROP/Immediate Retirement at first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | Elected Officers' (All Subclasses) | | Senior Management Service Class | |
|-------|---------|--------|-------------------------------------|--------|------------------------------------|--------|---------------------------------|--------|
| | Female | Male | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 24.0% | 27.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 24.0% | 30.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 48 | 31.0% | 27.0% | 24.0% | 37.0% | 40.0% | 40.0% | 35.0% | 35.0% |
| 49 | 31.0% | 27.0% | 24.0% | 37.0% | 42.5% | 42.5% | 37.5% | 37.5% |
| 50 | 31.0% | 27.0% | 27.0% | 37.0% | 45.0% | 45.0% | 40.0% | 40.0% |
| 51 | 31.0% | 27.0% | 27.0% | 47.0% | 47.5% | 47.5% | 42.5% | 42.5% |
| 52 | 31.0% | 27.0% | 37.0% | 57.0% | 50.0% | 50.0% | 45.0% | 45.0% |
| 53 | 31.0% | 27.0% | 27.0% | 57.0% | 52.5% | 52.5% | 47.5% | 47.5% |
| 54 | 32.0% | 27.0% | 27.0% | 57.0% | 55.0% | 55.0% | 50.0% | 50.0% |
| 55 | 38.0% | 35.0% | 27.0% | 56.0% | 57.5% | 57.5% | 52.5% | 52.5% |
| 56 | 40.0% | 35.0% | 26.0% | 56.0% | 60.0% | 60.0% | 55.0% | 55.0% |
| 57 | 55.0% | 60.0% | 26.0% | 56.0% | 62.5% | 62.5% | 57.5% | 57.5% |
| 58 | 55.0% | 60.0% | 26.0% | 56.0% | 65.0% | 65.0% | 65.0% | 65.0% |
| 59 | 62.0% | 60.0% | 26.0% | 56.0% | 67.5% | 67.5% | 67.5% | 67.5% |
| 60 | 62.0% | 60.0% | 37.0% | 35.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| 61 | 64.0% | 63.0% | 30.0% | 15.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 62 | 64.0% | 63.0% | 20.0% | 20.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 63 | 64.0% | 63.0% | 25.0% | 25.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 64 | 64.0% | 63.0% | 30.0% | 30.0% | 72.5% | 72.5% | 72.5% | 72.5% |
| 65 | 60.5% | 52.0% | 35.0% | 35.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| 66 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 67 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 68 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 69 | 15.0% | 15.0% | 40.0% | 40.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 70-79 | 15.0% | 15.0% | 100.0% | 100.0% | 25.0% | 25.0% | 20.0% | 20.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Deferred Retirement subsequent to first retirement eligibility

| Age | Regular | | Special Risk and Special Risk Admin | | All Other | |
|-------|---------|--------|-------------------------------------|--------|-----------|--------|
| | Female | Male | Female | Male | Female | Male |
| 45 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 46 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 47 | 0.0% | 0.0% | 3.0% | 3.0% | 0.0% | 0.0% |
| 48 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 49 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 50 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 51 | 2.0% | 2.0% | 4.0% | 4.0% | 5.0% | 5.0% |
| 52 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 53 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 54 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 55 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 56 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 57 | 2.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 58 | 3.5% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 59 | 5.0% | 2.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 60 | 5.0% | 5.0% | 7.0% | 7.0% | 5.0% | 5.0% |
| 61 | 5.0% | 5.0% | 9.0% | 9.0% | 5.0% | 5.0% |
| 62 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 63 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 64 | 5.0% | 5.0% | 20.0% | 20.0% | 5.0% | 5.0% |
| 65 | 12.0% | 11.0% | 20.0% | 20.0% | 15.0% | 15.0% |
| 66 | 8.0% | 8.0% | 25.0% | 25.0% | 11.0% | 11.0% |
| 67 | 8.0% | 8.0% | 25.0% | 25.0% | 11.0% | 11.0% |
| 68 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 69 | 15.0% | 13.0% | 25.0% | 25.0% | 15.0% | 15.0% |
| 70-79 | 15.0% | 13.0% | 100.0% | 100.0% | 15.0% | 15.0% |
| 80 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Line-of-Duty Disability Annual Rates

| Age | SR Male | SR Female | Other Male | Other Female |
|-------|---------|-----------|------------|--------------|
| 20 | 0.010% | 0.000% | 0.000% | 0.000% |
| 21 | 0.010% | 0.000% | 0.000% | 0.000% |
| 22 | 0.010% | 0.000% | 0.000% | 0.000% |
| 23 | 0.010% | 0.000% | 0.000% | 0.000% |
| 24 | 0.010% | 0.000% | 0.000% | 0.000% |
| 25 | 0.010% | 0.004% | 0.001% | 0.001% |
| 26 | 0.010% | 0.004% | 0.001% | 0.001% |
| 27 | 0.010% | 0.004% | 0.001% | 0.001% |
| 28 | 0.010% | 0.004% | 0.001% | 0.001% |
| 29 | 0.010% | 0.004% | 0.001% | 0.001% |
| 30 | 0.010% | 0.004% | 0.001% | 0.001% |
| 31 | 0.010% | 0.004% | 0.001% | 0.001% |
| 32 | 0.010% | 0.004% | 0.001% | 0.001% |
| 33 | 0.010% | 0.004% | 0.001% | 0.001% |
| 34 | 0.010% | 0.004% | 0.001% | 0.001% |
| 35 | 0.010% | 0.004% | 0.001% | 0.001% |
| 36 | 0.010% | 0.004% | 0.001% | 0.001% |
| 37 | 0.010% | 0.040% | 0.001% | 0.001% |
| 38 | 0.020% | 0.040% | 0.001% | 0.001% |
| 39 | 0.020% | 0.040% | 0.001% | 0.001% |
| 40 | 0.020% | 0.040% | 0.001% | 0.001% |
| 41 | 0.020% | 0.060% | 0.004% | 0.001% |
| 42 | 0.020% | 0.060% | 0.004% | 0.001% |
| 43 | 0.020% | 0.060% | 0.004% | 0.001% |
| 44 | 0.040% | 0.040% | 0.004% | 0.001% |
| 45 | 0.060% | 0.040% | 0.004% | 0.001% |
| 46 | 0.080% | 0.040% | 0.004% | 0.001% |
| 47 | 0.100% | 0.040% | 0.004% | 0.001% |
| 48 | 0.120% | 0.040% | 0.004% | 0.001% |
| 49 | 0.140% | 0.040% | 0.004% | 0.001% |
| 50 | 0.140% | 0.050% | 0.006% | 0.006% |
| 51 | 0.100% | 0.060% | 0.006% | 0.006% |
| 52 | 0.100% | 0.070% | 0.006% | 0.006% |
| 53 | 0.100% | 0.080% | 0.006% | 0.006% |
| 54 | 0.100% | 0.080% | 0.006% | 0.006% |
| 55 | 0.100% | 0.080% | 0.006% | 0.006% |
| 56 | 0.100% | 0.080% | 0.006% | 0.006% |
| 57 | 0.100% | 0.080% | 0.006% | 0.006% |
| 58 | 0.100% | 0.150% | 0.006% | 0.006% |
| 59 | 0.100% | 0.150% | 0.010% | 0.015% |
| 60 | 0.140% | 0.150% | 0.010% | 0.013% |
| 61 | 0.180% | 0.150% | 0.010% | 0.010% |
| 62 | 0.220% | 0.150% | 0.010% | 0.010% |
| 63 | 0.260% | 0.150% | 0.010% | 0.010% |
| 64 | 0.300% | 0.150% | 0.010% | 0.010% |
| 65 | 0.260% | 0.150% | 0.010% | 0.010% |
| 66 | 0.240% | 0.100% | 0.010% | 0.010% |
| 67 | 0.200% | 0.100% | 0.010% | 0.010% |
| 68 | 0.100% | 0.100% | 0.010% | 0.010% |
| 69 | 0.100% | 0.100% | 0.010% | 0.010% |
| 70-79 | 0.100% | 0.100% | 0.010% | 0.010% |
| 80 | 0.100% | 0.100% | 0.001% | 0.001% |

Non-Duty Disability Annual Rates

| Age | SR Male | SR Female | Other Male | Other Female |
|-------|---------|-----------|------------|--------------|
| 20 | 0.020% | 0.000% | 0.000% | 0.000% |
| 21 | 0.020% | 0.000% | 0.010% | 0.010% |
| 22 | 0.020% | 0.000% | 0.010% | 0.010% |
| 23 | 0.020% | 0.000% | 0.010% | 0.010% |
| 24 | 0.020% | 0.000% | 0.010% | 0.010% |
| 25 | 0.020% | 0.020% | 0.010% | 0.010% |
| 26 | 0.020% | 0.020% | 0.010% | 0.010% |
| 27 | 0.020% | 0.020% | 0.010% | 0.010% |
| 28 | 0.030% | 0.020% | 0.010% | 0.010% |
| 29 | 0.030% | 0.020% | 0.010% | 0.010% |
| 30 | 0.030% | 0.020% | 0.010% | 0.010% |
| 31 | 0.030% | 0.020% | 0.010% | 0.010% |
| 32 | 0.030% | 0.020% | 0.010% | 0.010% |
| 33 | 0.030% | 0.030% | 0.010% | 0.010% |
| 34 | 0.030% | 0.030% | 0.020% | 0.010% |
| 35 | 0.030% | 0.030% | 0.020% | 0.010% |
| 36 | 0.030% | 0.030% | 0.020% | 0.020% |
| 37 | 0.030% | 0.030% | 0.020% | 0.020% |
| 38 | 0.030% | 0.030% | 0.020% | 0.020% |
| 39 | 0.030% | 0.030% | 0.020% | 0.020% |
| 40 | 0.030% | 0.030% | 0.020% | 0.020% |
| 41 | 0.030% | 0.030% | 0.040% | 0.040% |
| 42 | 0.030% | 0.060% | 0.040% | 0.040% |
| 43 | 0.030% | 0.060% | 0.040% | 0.040% |
| 44 | 0.030% | 0.060% | 0.080% | 0.040% |
| 45 | 0.030% | 0.060% | 0.080% | 0.060% |
| 46 | 0.030% | 0.060% | 0.080% | 0.060% |
| 47 | 0.080% | 0.060% | 0.080% | 0.100% |
| 48 | 0.080% | 0.110% | 0.080% | 0.100% |
| 49 | 0.080% | 0.110% | 0.120% | 0.100% |
| 50 | 0.080% | 0.110% | 0.160% | 0.100% |
| 51 | 0.080% | 0.110% | 0.200% | 0.140% |
| 52 | 0.080% | 0.110% | 0.200% | 0.140% |
| 53 | 0.050% | 0.110% | 0.200% | 0.140% |
| 54 | 0.050% | 0.110% | 0.200% | 0.140% |
| 55 | 0.050% | 0.110% | 0.250% | 0.160% |
| 56 | 0.050% | 0.110% | 0.250% | 0.180% |
| 57 | 0.050% | 0.110% | 0.250% | 0.200% |
| 58 | 0.050% | 0.110% | 0.300% | 0.220% |
| 59 | 0.050% | 0.110% | 0.300% | 0.240% |
| 60 | 0.050% | 0.110% | 0.300% | 0.260% |
| 61 | 0.050% | 0.110% | 0.200% | 0.200% |
| 62 | 0.050% | 0.110% | 0.150% | 0.140% |
| 63 | 0.050% | 0.110% | 0.100% | 0.080% |
| 64 | 0.050% | 0.110% | 0.100% | 0.080% |
| 65 | 0.050% | 0.110% | 0.100% | 0.080% |
| 66 | 0.050% | 0.110% | 0.040% | 0.080% |
| 67 | 0.050% | 0.110% | 0.040% | 0.040% |
| 68 | 0.050% | 0.110% | 0.040% | 0.040% |
| 69 | 0.050% | 0.110% | 0.040% | 0.040% |
| 70-79 | 0.050% | 0.110% | 0.040% | 0.040% |
| 80 | 0.050% | 0.110% | 0.040% | 0.040% |

Withdrawal – Other Terminations of Employment Annual Rates

| Combined Years of Service | Regular – Male | | | | | | | | | | |
|------------------------------|----------------|-------|-------|-------|-------|--------------|-------|-------|-------|-------|-------|
| | Attained Age | | | | | Attained Age | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 32.8% | 27.2% | 25.8% | 25.8% | 24.4% | 24.4% | 23.4% | 27.4% | 27.4% | 27.4% | 27.4% |
| 1 | 25.4% | 18.5% | 15.4% | 14.3% | 12.6% | 12.5% | 12.2% | 12.2% | 12.2% | 12.2% | 12.2% |
| 2 | 22.7% | 17.2% | 14.0% | 12.8% | 12.0% | 11.6% | 10.7% | 10.7% | 10.7% | 10.7% | 10.7% |
| 3 | 18.4% | 14.6% | 13.2% | 12.6% | 10.7% | 10.3% | 9.4% | 9.3% | 9.3% | 9.3% | 9.3% |
| 4 | 15.8% | 12.7% | 11.8% | 10.9% | 9.0% | 8.8% | 7.9% | 7.8% | 7.8% | 7.8% | 7.8% |
| 5 | 11.7% | 9.7% | 8.8% | 8.5% | 7.4% | 6.8% | 6.0% | 6.8% | 6.8% | 6.8% | 6.8% |
| 6 | 11.1% | 8.5% | 7.8% | 7.5% | 6.7% | 6.5% | 5.5% | 5.4% | 5.4% | 5.4% | 5.4% |
| 7 | 11.1% | 8.4% | 7.1% | 6.8% | 6.2% | 6.0% | 5.3% | 5.2% | 5.1% | 5.1% | 5.1% |
| 8 | 11.0% | 7.7% | 6.4% | 6.2% | 5.8% | 5.1% | 4.6% | 4.4% | 4.3% | 4.3% | 4.3% |
| 9 | 10.0% | 6.3% | 5.5% | 5.3% | 5.3% | 5.1% | 4.6% | 4.3% | 4.2% | 4.2% | 4.2% |
| 10+ | 9.8% | 6.2% | 4.7% | 4.2% | 3.0% | 2.7% | 3.0% | 4.5% | 5.3% | 5.3% | 3.7% |

| Combined Years of Service | Regular – Female | | | | | | | | | | |
|------------------------------|------------------|-------|-------|-------|-------|--------------|-------|-------|-------|-------|-------|
| | Attained Age | | | | | Attained Age | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 30.3% | 26.6% | 25.4% | 25.4% | 24.4% | 24.4% | 23.2% | 23.2% | 23.2% | 23.2% | 23.2% |
| 1 | 25.8% | 19.8% | 16.9% | 15.9% | 14.0% | 13.9% | 13.4% | 13.4% | 13.4% | 13.4% | 13.4% |
| 2 | 22.1% | 17.1% | 14.5% | 13.5% | 12.1% | 11.9% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% |
| 3 | 17.4% | 13.0% | 11.6% | 11.2% | 10.0% | 9.8% | 8.8% | 8.7% | 8.7% | 8.7% | 8.7% |
| 4 | 15.4% | 12.9% | 11.3% | 10.9% | 9.1% | 8.8% | 8.4% | 8.3% | 8.3% | 8.3% | 8.3% |
| 5 | 13.5% | 10.7% | 9.4% | 9.0% | 7.0% | 6.7% | 6.2% | 6.1% | 6.1% | 6.1% | 6.1% |
| 6 | 11.4% | 9.7% | 8.7% | 8.0% | 6.5% | 6.5% | 5.9% | 5.8% | 5.8% | 5.8% | 5.8% |
| 7 | 11.3% | 9.2% | 8.1% | 7.8% | 6.3% | 6.1% | 5.5% | 5.4% | 5.4% | 5.4% | 5.4% |
| 8 | 10.5% | 7.8% | 7.1% | 6.8% | 6.1% | 5.8% | 5.5% | 5.4% | 5.4% | 5.4% | 5.4% |
| 9 | 10.2% | 7.1% | 6.5% | 6.2% | 5.0% | 4.7% | 4.6% | 4.5% | 4.5% | 4.5% | 4.5% |
| 10+ | 11.6% | 5.3% | 5.4% | 4.6% | 3.3% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |



Withdrawal (continued)

| Elected Officers' Class: Local – Male | | | | | | | | | | |
|---------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% |
| 1 | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% |
| 2 | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% | 1.9% |
| 3 | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| 4 | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% |
| 5 | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% | 2.3% |
| 6 | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% | 2.7% |
| 7 | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% | 2.4% |
| 8 | 13.8% | 13.8% | 13.8% | 13.8% | 13.8% | 13.8% | 13.6% | 13.4% | 13.3% | 11.5% |
| 9 | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.8% | 4.6% | 4.4% | 4.3% | 2.5% |
| 10+ | 5.7% | 5.7% | 5.7% | 5.7% | 5.7% | 5.7% | 5.6% | 5.3% | 5.2% | 3.5% |

| Elected Officers' Class: Local – Female | | | | | | | | | | |
|---|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% |
| 2 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 3 | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% |
| 4 | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% |
| 5 | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% |
| 6 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 7 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 8 | 12.0% | 12.0% | 12.0% | 12.0% | 12.0% | 12.0% | 11.9% | 11.7% | 11.6% | 10.2% |
| 9 | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.2% | 3.1% | 2.8% | 2.7% | 1.0% |
| 10+ | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.1% | 3.9% | 3.8% | 2.4% |



Withdrawal (continued)

| Elected Officers' Class: Leg-Atty-Cab – Male | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% | 4.2% |
| 1 | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| 2 | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% | 11.7% |
| 3 | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% |
| 4 | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% |
| 5 | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| 6 | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% | 10.6% |
| 7 | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% | 1.6% |
| 8 | 20.2% | 20.2% | 20.2% | 20.2% | 20.2% | 20.8% | 20.0% | 18.7% | 18.4% | 16.7% |
| 9 | 6.6% | 6.6% | 6.6% | 6.6% | 6.6% | 7.2% | 6.4% | 5.2% | 4.9% | 3.1% |
| 10+ | 6.7% | 6.7% | 6.7% | 6.7% | 6.7% | 7.1% | 6.6% | 5.7% | 5.5% | 4.2% |

| Elected Officers' Class: Leg-Atty-Cab – Female | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| 0 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 1 | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% | 9.1% |
| 2 | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% | 15.9% |
| 3 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 4 | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% |
| 5 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 6 | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |
| 7 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 8 | 17.8% | 17.8% | 17.8% | 17.8% | 17.8% | 18.4% | 17.6% | 16.3% | 16.0% | 14.3% |
| 9 | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 4.1% | 3.3% | 2.1% | 1.8% | 0.0% |
| 10+ | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% | 11.4% | 10.6% | 9.4% | 9.1% | 7.3% |



Withdrawal (continued)

| Elected Officers' Class: Judicial – Male | | | | | | | | | | | |
|--|--------------|------|------|------|------|------|------|------|------|------|------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 1 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 2 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 3 | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 4 | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| 5 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 6 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 7 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 8 | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 9 | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.2% | 1.1% | 0.8% | 0.7% | 0.5% | 0.5% |
| 10+ | 2.0% | 2.0% | 2.0% | 1.9% | 1.9% | 1.9% | 1.7% | 1.3% | 1.1% | 0.7% | 0.7% |

| Elected Officers' Class: Judicial – Female | | | | | | | | | | | |
|--|--------------|------|------|------|------|------|------|------|------|------|------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 1 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 2 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 3 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 4 | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% |
| 5 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 6 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 7 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 8 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 9 | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% | 1.4% | 1.1% | 1.0% | 0.8% | 0.8% |
| 10+ | 2.9% | 2.9% | 2.9% | 2.7% | 2.7% | 2.7% | 2.4% | 2.0% | 1.8% | 1.4% | 1.4% |



Withdrawal (continued)

| Senior Management – Male | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 8.5% | 8.5% | 8.5% | 8.5% | 8.4% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% |
| 1 | 21.0% | 17.5% | 15.5% | 14.6% | 14.2% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% |
| 2 | 21.0% | 17.5% | 15.5% | 14.6% | 14.2% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% | 14.1% |
| 3 | 19.5% | 18.5% | 17.7% | 17.1% | 16.7% | 16.4% | 16.2% | 16.0% | 16.0% | 16.0% | 16.0% |
| 4 | 15.5% | 14.9% | 14.5% | 13.6% | 12.9% | 12.6% | 12.4% | 12.3% | 12.2% | 12.2% | 12.2% |
| 5 | 10.9% | 10.5% | 10.0% | 9.7% | 9.3% | 8.6% | 8.2% | 8.1% | 8.0% | 8.0% | 8.0% |
| 6 | 10.6% | 10.3% | 9.8% | 9.3% | 9.0% | 8.7% | 8.4% | 8.3% | 8.1% | 8.1% | 8.1% |
| 7 | 10.5% | 10.2% | 9.7% | 9.2% | 8.8% | 8.5% | 8.3% | 8.1% | 8.0% | 8.0% | 8.0% |
| 8 | 9.6% | 9.5% | 9.1% | 8.8% | 8.5% | 8.3% | 8.1% | 8.0% | 7.9% | 7.8% | 7.8% |
| 9 | 6.6% | 6.6% | 6.3% | 6.1% | 5.9% | 5.7% | 5.6% | 5.4% | 5.3% | 5.3% | 5.3% |
| 10+ | 4.8% | 4.8% | 4.1% | 3.6% | 3.2% | 2.9% | 3.0% | 3.1% | 3.5% | 2.6% | 2.6% |

| Senior Management – Female | | | | | | | | | | | |
|----------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 8.5% | 8.5% | 8.5% | 8.5% | 8.4% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% | 8.5% |
| 1 | 15.5% | 13.0% | 11.8% | 11.1% | 10.9% | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% |
| 2 | 18.3% | 16.0% | 14.7% | 13.8% | 13.4% | 13.2% | 13.2% | 13.2% | 13.2% | 13.2% | 13.2% |
| 3 | 17.1% | 16.2% | 15.5% | 15.0% | 14.6% | 14.3% | 14.1% | 14.0% | 14.0% | 14.0% | 14.0% |
| 4 | 12.1% | 11.3% | 10.5% | 9.9% | 9.4% | 9.0% | 8.7% | 8.6% | 8.5% | 8.5% | 8.5% |
| 5 | 12.1% | 11.3% | 10.5% | 9.9% | 9.4% | 9.0% | 8.7% | 8.6% | 8.5% | 8.5% | 8.5% |
| 6 | 10.9% | 10.6% | 10.1% | 9.7% | 9.4% | 9.1% | 8.8% | 8.7% | 8.5% | 8.5% | 8.5% |
| 7 | 10.3% | 10.1% | 9.6% | 9.2% | 8.8% | 8.6% | 8.4% | 8.2% | 8.1% | 8.1% | 8.1% |
| 8 | 7.7% | 7.6% | 7.1% | 6.8% | 6.5% | 6.2% | 6.0% | 5.9% | 5.8% | 5.7% | 5.7% |
| 9 | 7.4% | 7.4% | 6.9% | 6.5% | 6.1% | 5.8% | 5.5% | 5.3% | 5.1% | 5.1% | 5.1% |
| 10+ | 4.8% | 4.8% | 3.9% | 3.2% | 2.7% | 2.4% | 2.1% | 1.9% | 1.9% | 1.9% | 1.9% |



Withdrawal (continued)

| Special Risk – Male | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 21.4% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% | 20.6% |
| 1 | 10.3% | 9.8% | 9.5% | 8.8% | 8.0% | 7.3% | 6.5% | 5.8% | 5.3% | 5.3% | 5.3% |
| 2 | 8.6% | 8.1% | 7.7% | 7.4% | 6.8% | 6.0% | 5.3% | 4.7% | 4.7% | 4.7% | 4.7% |
| 3 | 8.4% | 7.9% | 7.5% | 7.2% | 6.7% | 6.0% | 5.3% | 4.7% | 4.7% | 4.7% | 4.7% |
| 4 | 7.5% | 7.0% | 6.7% | 6.5% | 6.0% | 5.5% | 5.0% | 4.6% | 4.6% | 4.6% | 4.6% |
| 5 | 5.3% | 5.3% | 5.3% | 5.3% | 4.8% | 4.3% | 3.8% | 3.3% | 3.3% | 3.3% | 3.3% |
| 6 | 5.2% | 5.2% | 5.2% | 5.1% | 4.6% | 4.1% | 3.6% | 3.2% | 3.2% | 3.2% | 3.2% |
| 7 | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| 8 | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% | 2.9% |
| 9 | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% |
| 10+ | 2.3% | 2.3% | 2.1% | 2.0% | 1.9% | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% |

| Special Risk – Female | | | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% | 21.3% |
| 1 | 15.5% | 14.2% | 13.2% | 12.2% | 11.2% | 10.2% | 9.2% | 8.4% | 8.4% | 8.4% | 8.4% |
| 2 | 12.3% | 11.6% | 10.6% | 9.6% | 8.6% | 7.6% | 6.6% | 5.8% | 5.8% | 5.8% | 5.8% |
| 3 | 10.3% | 9.8% | 9.3% | 8.8% | 8.3% | 7.6% | 6.6% | 5.6% | 5.6% | 5.6% | 5.6% |
| 4 | 9.7% | 9.2% | 8.7% | 8.4% | 7.6% | 7.0% | 6.4% | 5.4% | 5.4% | 5.4% | 5.4% |
| 5 | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% | 5.3% | 5.3% | 5.3% | 5.3% |
| 6 | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.9% | 5.1% | 5.1% | 5.1% | 5.1% |
| 7 | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| 8 | 4.2% | 4.2% | 4.2% | 4.2% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% | 4.1% |
| 9 | 4.2% | 4.2% | 4.2% | 4.1% | 4.1% | 4.1% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| 10+ | 1.9% | 1.9% | 1.7% | 1.5% | 2.5% | 2.5% | 1.6% | 4.0% | 4.0% | 4.0% | 4.0% |



Withdrawal (continued)

| Special Risk Administrative – Male | | | | | | | | | | | |
|------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 14.6% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% | 13.9% |
| 1 | 11.3% | 10.8% | 10.3% | 9.9% | 9.7% | 9.5% | 9.4% | 9.4% | 9.4% | 9.4% | 9.4% |
| 2 | 10.4% | 9.7% | 9.3% | 8.9% | 8.7% | 8.5% | 8.4% | 8.4% | 8.4% | 8.4% | 8.4% |
| 3 | 9.7% | 9.1% | 8.7% | 8.3% | 7.9% | 7.8% | 7.7% | 7.6% | 7.6% | 7.6% | 7.6% |
| 4 | 8.8% | 8.3% | 8.0% | 7.8% | 7.6% | 7.4% | 7.4% | 7.4% | 7.4% | 7.4% | 7.4% |
| 5 | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |
| 6 | 4.4% | 4.4% | 4.4% | 4.2% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% | 3.9% |
| 7 | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% | 3.8% |
| 8 | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% | 3.4% |
| 9 | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% | 3.3% |
| 10+ | 3.9% | 3.9% | 3.6% | 3.4% | 3.2% | 3.3% | 3.6% | 7.5% | 7.5% | 7.5% | 7.5% |

| Special Risk Administrative – Female | | | | | | | | | | | |
|--------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Combined Years of Service | Attained Age | | | | | | | | | | |
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | |
| 0 | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% | 22.5% |
| 1 | 19.4% | 18.0% | 17.1% | 16.5% | 16.1% | 15.9% | 15.7% | 15.7% | 15.7% | 15.7% | 15.7% |
| 2 | 17.5% | 16.9% | 16.5% | 16.2% | 15.9% | 15.8% | 15.7% | 15.7% | 15.7% | 15.7% | 15.7% |
| 3 | 20.3% | 19.8% | 19.3% | 19.0% | 18.7% | 18.6% | 18.4% | 18.4% | 18.4% | 18.4% | 18.4% |
| 4 | 20.8% | 20.2% | 19.8% | 19.4% | 19.0% | 18.8% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% |
| 5 | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% | 18.8% |
| 6 | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% | 18.7% |
| 7 | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% |
| 8 | 17.8% | 17.8% | 17.7% | 17.7% | 17.7% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% |
| 9 | 17.8% | 17.8% | 17.8% | 17.8% | 17.7% | 17.7% | 17.6% | 17.6% | 17.6% | 17.6% | 17.6% |
| 10+ | 18.4% | 18.4% | 18.1% | 17.8% | 17.6% | 17.7% | 18.0% | 21.0% | 21.0% | 21.0% | 21.0% |



Individual Member Salary Increase Assumptions

- (Based on 2.60% inflation assumption)

| Combined Years of Service | -- Elected Officers' Class -- | | | | | | | | | | | | | |
|---------------------------|-------------------------------|-------|--------------|-------|--------------------|-------|--------|-------|--------------|-------|----------|-------|-------------------|-------|
| | Regular | | Special Risk | | Special Risk Admin | | Local | | Leg-Atty-Cab | | Judicial | | Senior Management | |
| | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male |
| 0 | 7.80% | 7.60% | 7.60% | 7.80% | 4.60% | 7.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | | |
| 1 | 5.50% | 5.70% | 5.90% | 6.50% | 4.60% | 7.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 6.60% | 7.10% |
| 2 | 5.00% | 5.30% | 5.60% | 6.10% | 4.60% | 7.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 6.20% | 6.40% |
| 3 | 5.00% | 5.10% | 5.60% | 6.00% | 4.60% | 7.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 6.20% | 6.10% |
| 4 | 4.90% | 5.00% | 5.60% | 6.00% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 5.30% | 5.40% |
| 5 | 4.80% | 4.90% | 5.60% | 6.00% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 5.30% | 5.00% |
| 6 | 4.80% | 4.80% | 5.60% | 5.90% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 5.30% | 5.00% |
| 7 | 4.70% | 4.80% | 5.50% | 5.70% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 8 | 4.60% | 4.70% | 5.50% | 5.70% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 9 | 4.60% | 4.70% | 5.50% | 5.70% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 10 | 4.60% | 4.50% | 5.50% | 5.60% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 11 | 4.50% | 4.50% | 5.30% | 5.60% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 12 | 4.40% | 4.50% | 5.30% | 5.40% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 13 | 4.40% | 4.50% | 5.20% | 5.40% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.70% |
| 14 | 4.40% | 4.50% | 5.20% | 5.30% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.30% |
| 15 | 4.40% | 4.40% | 5.20% | 5.30% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.30% |
| 16 | 4.40% | 4.40% | 5.00% | 5.30% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.80% | 4.30% |
| 17 | 4.40% | 4.40% | 5.00% | 5.30% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 18 | 4.30% | 4.30% | 5.00% | 5.30% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 19 | 4.30% | 4.30% | 5.00% | 5.20% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 20 | 4.30% | 4.30% | 5.00% | 5.20% | 4.60% | 6.00% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 21 | 4.20% | 4.30% | 5.00% | 5.10% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 22 | 4.20% | 4.30% | 5.00% | 5.00% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 23 | 4.10% | 4.20% | 5.00% | 5.00% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 24 | 4.10% | 4.10% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.30% |
| 25 | 4.00% | 4.00% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.00% |
| 26 | 3.90% | 4.00% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.00% |
| 27 | 3.80% | 4.00% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.00% |
| 28 | 3.70% | 3.90% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 4.30% | 4.00% |
| 29 | 4.00% | 4.40% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 5.20% | 4.70% |
| 30+ | 4.00% | 4.40% | 5.10% | 5.40% | 4.60% | 5.30% | 4.10% | 4.10% | 5.20% | 4.70% | 4.10% | 4.10% | 5.20% | 4.70% |



Unused Annual Leave Available at Retirement

| Membership Class | Hours |
|-------------------------|-------|
| Regular | 230 |
| Special Risk | 290 |
| Senior Management | 290 |
| Others Not Listed Above | 230 |

Military Service and Out-of-State Service Credits

Active members are assumed to have purchased the following additional years of service credit.

| Type of Service Credit | Special Risk Class | | All other classes | |
|--|--------------------|-------|-------------------|--------|
| | Men | Women | Men | Women |
| Military Service Credit ¹ | 0.2818 | 0 | 0.1853 | 0 |
| Out-of-State Service Credit ² | 0 | 0 | 0.0910 | 0.0910 |

¹ Pre-1987 hires only; service is eligible for the COLA.

² Pre-July 1, 2011 enrollees; service is eligible for the COLA.

No extra service credit was assumed for TRS and IFAS participants.

Changes to the Actuarial Assumptions

All assumptions were reviewed as part of the 2014 Experience Study and changes were adopted by the 2014 Actuarial Assumptions Conference.

Appendix B: Summary of Plan Provisions

All actuarial calculations are based upon our understanding of Florida Statutes regarding the retirement provisions of the retirement systems. These provisions are briefly summarized below for reference purposes, along with corresponding references to the Statutes. This summary encompasses the major provisions; it does not attempt to cover all of the detailed provisions.

Part I: Florida Retirement System (FRS)

The benefit and contribution provisions of the FRS are set forth in Chapter 121 of the Florida Statutes. Provisions relating to other State-administered retirement systems are set forth in other sections of the Florida Statutes, under Chapters 112, 122, and 238.

Effective Date

The effective date of the FRS was December 1, 1970. The FRS was created with closure and consolidation of the Teachers' Retirement System, the State and County Officers and Employees' Retirement System, and the Highway Patrol Pension Fund. In 1972, the Judicial Retirement System was also consolidated with the FRS. The FRS was created to provide a defined benefit retirement, disability, and survivor program for participating public employees. Social Security coverage is also required for all members.

Beginning in 2002, the FRS became one system with two primary programs, the existing Defined Benefit Program and a defined contribution plan alternative to the defined benefit plan known as the Investment Plan (IP). The earliest that any member could participate in the IP was July 1, 2002.

As of July 1, 2007, the Institute for Food and Agricultural Sciences Supplemental Retirement Program was consolidated under the FRS as a closed group.

(Section 121.011(2))

Membership

Membership is a condition of employment for all new state, county, or other participating agency employees filling regularly established positions and employed on or after December 1, 1970, or who elected to transfer from an existing system. Employees may be full-time or part-time and can be elected, appointed, or employed in state government, county government, a state university, or a community college. A city or special district may join the FRS at its option.

Effective July 1, 1978, a member in an existing retirement system who is re-employed after termination of employment may remain in that system, provided his or her member contributions have not been withdrawn.

Members of the FRS Defined Benefit Program when the IP was created were provided an educational period about their plan choice options prior to a 90-day election period to elect between the Defined Benefit Program and the Investment Plan (IP). Members newly hired after the IP became effective are provided five months after their month of hire to file an election between the two primary programs. Members who do not make an election default into the Defined Benefit Program.

After the initial active or default election to participate in the Defined Benefit Program or the IP, the employee has one opportunity, at the employee's discretion before termination or retirement, to choose to move from the Defined Benefit Program to the IP or from the IP to the Defined Benefit Program.

(Sections 121.051, 121.4501)

Classification

There are five separate classes of members: Regular Class, Special Risk Class, Special Risk Administrative Support Class, Elected Officers' Class, and Senior Management Service Class. In addition, the Deferred Retirement Option Program is available to defined benefit program members who meet the requirements for normal retirement under the Defined Benefit Program of the FRS.

Regular Class – members who are not classified as members of the Special Risk Class, Special Risk Administrative Support Class, Elected Officers' Class, or Senior Management Service Class.

Special Risk Class – members employed as law enforcement officers, emergency medical technicians, paramedics, firefighters, firefighter trainers, fire prevention inspectors, correctional officers, correctional probation officers, certain professional health care positions within the Department of Children and Family Services and the Department of Corrections, youth custody officers, or certain forensic positions within a law enforcement agency, or a medical examiner's office who meet the criteria set forth in the Florida Retirement System law and rules.

Special Risk Administrative Support Class – former Special Risk members employed as law enforcement officers, firefighters, correctional officers, or emergency medical technicians who have been moved or been re-assigned to non-Special Risk administrative support positions within a Florida Retirement System Special Risk employing agency.

Elected Officers' Class – members include the governor, lieutenant governor, cabinet officers, legislators, Supreme Court justices, district court of appeals judges, circuit judges, county court judges, state attorneys, public defenders, and elected county officers. Also included are city and special district officers if the employer chose to place their elected officials in this class. All such elected officers may withdraw from the Florida Retirement System, or elect membership in the Senior Management Service Class or, if state officers, in the Senior Management Service Optional Annuity Program.

Senior Management Service Class – members who hold positions in the Senior Management Service of the State of Florida; community college presidents; appointed school board superintendents; county and city managers; selected managerial staff of the Legislature; the Auditor General and managerial staff; the Executive Director of the Ethics Commission; the State University System Executive Service and university presidents; selected managerial staff of the State Board of Administration; judges of compensation claims; selected managerial staff with the Judicial Branch; Chief Deputy Court Administrator; capital collateral regional counsels and assistant capital collateral regional counsels; assistant state attorneys; assistant public defenders; assistant statewide prosecutors or assistant attorneys general; and non-elective managerial positions designated for SMSC membership by local government agencies. Members in this class have either chosen not to participate or are not eligible to participate in the elective Senior Management Service Optional Annuity Program for state senior managers or to withdraw from the FRS if employed by non-state employers. This class became effective February 1, 1987, and members of an existing retirement system and members of the Special Risk or Special Risk Administrative Support Classes who were employed prior to February 1, 1987 could elect to remain in such system or class.

Deferred Retirement Option Program – allows members of the Defined Benefit Program of the FRS in any of the above five classes to elect to retire and have their FRS benefits accumulate in the FRS Trust Fund, earning interest, while the member continues to work for an FRS employer. DROP membership is for a specific and limited period.

(Sections 121.021(12), 121.0515, 121.052, 121.055, 121.091 (13))

Contributions

From January 1, 1975, for the state and for school boards, and from October 1, 1975, for other agencies, through June 30, 2011, the total cost of the System was paid by the participating employers.

Beginning July 1, 2011, all Defined Benefit and IP members, except those participating in DROP, are required to pay member contributions equal to 3% of compensation. TRS members already pay required employee contributions. Member contributions do not accrue interest except for TRS members.

(Section 121.071 (2))

The employer contribution rates enacted for the July 1, 2014 – June 30, 2015 plan year are as follows:

| | Regular | Special Risk | Special Risk Administrative | Elected Officers Class Judicial | Elected Officers Class Leg-Atty-Cab | Elected Officers Class Local | Senior Management | DROP |
|---|-------------|--------------|-----------------------------|---------------------------------|-------------------------------------|------------------------------|-------------------|-------------|
| Defined Benefit Plan | | | | | | | | |
| - Normal Cost Rate | 3.53% | 10.76% | 3.68% | 10.02% | 6.14% | 8.21% | 4.76% | 4.30% |
| - UAL Rate | <u>3.01</u> | <u>8.95</u> | <u>51.44</u> | <u>23.69</u> | <u>50.85</u> | <u>46.01</u> | <u>20.03</u> | <u>6.72</u> |
| - Total DB Rate | 6.54 | 19.71 | 55.12 | 33.71 | 56.99 | 54.22 | 24.79 | 11.02 |
| Investment Plan | | | | | | | | |
| - Employer Rate | 3.55% | 12.33% | 5.40% | 10.96% | 6.79% | 8.75% | 4.93% | n/a |
| - UAL Rate | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>0.00</u> | <u>n/a</u> |
| - Total IP Rate | 3.55 | 12.33 | 5.40 | 10.96 | 6.79 | 8.75 | 4.93 | n/a |
| Blended Uniform Contribution Rates | | | | | | | | |
| - Normal Cost Rate | 3.53% | 11.01% | 4.18% | 10.10% | 6.30% | 8.36% | 4.80% | 4.30% |
| - UAL Rate | <u>2.54</u> | <u>7.51</u> | <u>36.59</u> | <u>21.77</u> | <u>38.66</u> | <u>33.58</u> | <u>15.04</u> | <u>6.72</u> |
| - Total Rate | 6.07 | 18.52 | 40.77 | 31.87 | 44.96 | 41.94 | 19.84 | 11.02 |

The above rates exclude the 0.03% administrative charge for Investment Plan administration and education (except DROP), and the 1.26% for the financing of the health insurance subsidy described later in this part.

(Section 121.71)

Compensation

“Compensation” means the monthly salary paid a member by his or her employer for work performed arising from that employment.

(a) Compensation shall include:

1. Overtime payments paid from a salary fund.
2. Accumulated annual leave payments.
3. Payments in addition to the employee’s base rate of pay if all the following apply:
 - a. The payments are paid according to a formal written policy that applies to all eligible employees equally;
 - b. The policy provides that payments shall commence no later than the 11th year of employment;
 - c. The payments are paid for as long as the employee continues his or her employment; and
 - d. The payments are paid at least annually.

4. Amounts withheld for tax sheltered annuities or deferred compensation programs, or any other type of salary reduction plan authorized under the Internal Revenue Code.
 5. Payments made in lieu of a permanent increase in the base rate of pay, whether made annually or in 12 or 26 equal payments within a 12-month period, when the member's base pay is at the maximum of his or her pay range. When a portion of a member's annual increase raises his or her pay range and the excess is paid as a lump sum payment, such lump sum payment shall be compensation for retirement purposes.
- (b) Compensation for a member participating in the pension plan or the investment plan of the Florida Retirement System may not include:
1. Fees paid professional persons for special or particular services or salary payments made from a faculty practice plan authorized by the Board of Governors of the State University System for eligible clinical faculty at a college in a state university that has a faculty practice plan; or
 2. Any bonuses or other payments prohibited from inclusion in the member's average final compensation.
- (c) For all purposes under this chapter, the member's compensation or gross compensation contributed as employee-elective salary reductions or deferrals to any salary reduction, deferred compensation, or tax-sheltered annuity program authorized under the Internal Revenue Code shall be deemed to be the compensation or gross compensation which the member would receive if he or she were not participating in such program and shall be treated as compensation for retirement purposes under this chapter. Any public funds otherwise paid by an employer into an employee's salary reduction, deferred compensation, or tax-sheltered annuity program on or after July 1, 1990 (the date as of which all employers were notified in writing by the division to cease making contributions to the System Trust Fund based on such amounts), shall be considered a fringe benefit and shall not be treated as compensation for retirement purposes under this chapter. However, if an employer was notified in writing by the division to cease making such contributions as of a different date, that employer shall be subject to the requirements of said written notice.
- (d) For any person who first becomes a member on or after July 1, 1996, compensation for any plan year shall not include any amounts in excess of the s. 401(a)(17), Internal Revenue Code limitation (as amended by the Omnibus Budget Reconciliation Act of 1993), which limitation of \$150,000 effective July 1, 1996, shall be adjusted as required by federal law for qualified government plans and shall be further adjusted for changes in the cost of living in the manner provided by s. 401(a)(17)(B), Internal Revenue Code. For any person who first became a member prior to July 1, 1996, compensation for all plan years beginning on or after July 1, 1990, shall not include any amounts in excess of the compensation limitation (originally \$200,000) established by s. 401(a)(17), Internal Revenue Code prior to the Omnibus Budget Reconciliation Act of 1993, which limitation shall be adjusted for changes in the cost of living since 1989, in the manner provided by s. 401(a)(17) of the Internal Revenue Code of 1991. This limitation, which has been part of the Florida Retirement System since plan years beginning on or after July 1, 1990, shall be adjusted as required by federal law for qualified government plans.

"Annual compensation" means the total compensation paid a member during a year. A "year" is 12 continuous months.

(Section 121.021(22) and (23))

FRS Defined Benefit Program

Normal Retirement Benefit

Eligibility – Members initially enrolled before July 1, 2011 (Tier I)

- Regular Class
 1. 30 years of creditable service at any age.
 2. Age 62 and 6 or more years of creditable service.
(Section 121.021(29)(a)(1))
- Special Risk Class
 1. 25 years of special risk service at any age; or
 2. Age 55 and 6 or more years of special risk service; or
 3. Age 52 and 25 years of creditable service, including special risk service and up to a maximum of four years of active duty wartime military service credit.
 4. 30 years of any creditable service, at any age, or age 62 and 6 or more years of creditable service (same requirement as the Regular Class).
(Section 121.021(29)(b)(1))
- Special Risk Administrative Support Class
(with six or more years of Special Risk Class service, the same requirements as apply to the Special Risk Class, otherwise same as apply to the Regular Class)
(Section 121.021(29)(b)(1))
- Elected Officers' Class
(same requirements as apply to Regular Class)
(Section 121.021(29)(a)(1))
- Senior Management Service Class
(same requirements as apply to Regular Class)
(Section 121.021(29)(a)(1))

Eligibility – Members initially enrolled on and after July 1, 2011 (Tier II)

- Regular Class
 1. 33 years of creditable service at any age.
 2. Age 65 and 8 or more years of creditable service.
(Section 121.021(29)(a)(2))
- Special Risk Class
 1. 30 years of special risk service at any age; or
 2. Age 60 and 8 or more years of special risk service; or
 3. 33 years of any creditable service, at any age, or age 65 and 8 or more years of creditable service (same requirement as the Regular Class).
(Section 121.021(29)(b)(2))
- Special Risk Administrative Support Class
(with eight or more years of Special Risk Class service, the same requirements as apply to the Special Risk Class, otherwise same as apply to the Regular Class)

(Section 121.021(29)(b)(2))

- Elected Officers' Class

(same requirements as apply to Regular Class)

(Section 121.021(29)(a)(2))

- Senior Management Service Class

(same requirements as apply to Regular Class)

(Section 121.021(29)(a)(2))

Normal Form

Straight life benefit (Option 1), payable on the last state working day of each month, with a guarantee that benefits paid will at least equal member contributions.

(Section 121.091(1))

Optional Forms

10-year certain and life benefit (Option 2), 100% joint and survivor benefit (Option 3), or 66-2/3% joint and survivor benefit (Option 4). If the joint annuitant is the member's non-disabled child, payment ceases upon attainment of the joint annuitant's 25th birthday under the 100% and 66- 2/3% joint and survivor benefit.

(Section 121.091(6))

Dual Retirement

In the event a member accumulates retirement benefits to commence at different normal retirement ages by virtue of having performed duties for an employer which would entitle him or her to benefits as both a Special Risk Class member and a member of another class, the amount of the benefits payable shall be computed separately with respect to each such age, and the sum of such computed amounts shall be paid. Note that this does not apply to a Special Risk Administrative Support Class member with at least 6 years of Special Risk Class Membership (8 years for members enrolled on or after July 1, 2011) when the Special Risk and Special Risk Administrative Support Classes are the only memberships held because such a member is treated as a Special Risk Class member.

(Section 121.091(2))

Regular Benefit Amount

The monthly FRS allowance is the product of:

1. Average monthly compensation
 - a. For members initially enrolled before July 1, 2011, the average of the highest five plan years of creditable service;
 - b. For members initially enrolled on or after July 1, 2011, the average of the highest eight plan years of creditable service;
2. Creditable service during the applicable period; and
3. The appropriate benefit percentage for periods of service.

All benefits are limited to 100% of average monthly compensation.

(Sections 121.021(17), (24) and (25), 121.091(1))

The appropriate benefit percentages are as follows:

- For Members initially enrolled before July 1, 2011, for Creditable Service as a Regular Class member Subsequent to November 30, 1970:

| Retirement at: | Percentage |
|---|------------|
| Age 62 with 6 years of creditable service, or 30 years of creditable service | 1.60% |
| Age 63 with 6 years of creditable service, or 31 years of creditable service | 1.63 |
| Age 64 with 6 years of creditable service, or 32 years of creditable service | 1.65 |
| Age 65 with 6 years of creditable service, or 33 years of creditable service | 1.68 |

- For Members initially enrolled on or after July 1, 2011, for Creditable Service as a Regular Class member Subsequent to November 30, 1970:

| Retirement at: | Percentage |
|---|------------|
| Age 65 with 8 years of creditable service, or 33 years of creditable service | 1.60% |
| Age 66 with 8 years of creditable service, or 34 years of creditable service | 1.63 |
| Age 67 with 8 years of creditable service, or 35 years of creditable service | 1.65 |
| Age 68 with 8 years of creditable service, or 36 years of creditable service | 1.68 |

(Section 121.091(1))

Service as a Special Risk Class member:

| Retirement on or After July 1, 2001 with Service Performed During: | Percentage |
|---|------------|
| December 1, 1970 to September 30, 1974 | 2.00% |
| October 1, 1974 and thereafter | 3.00 |

(Section 121.091(1))

- For Members initially enrolled before July 1, 2011, for Creditable Service as a Special Risk Administrative Support Class member Subsequent to November 30, 1970:

| Retirement at: | Percentage |
|---|------------|
| Age 55 with 6 years of creditable service, or age 52 with 25 years of creditable service, which may include up to four years of active duty wartime military service, or 25 years of creditable service | 1.60% |
| Age 56 with 6 years of creditable service, or age 53 with 26 years of creditable service, which may include up to four years of active duty wartime military service, or 26 years of creditable service | 1.63 |
| Age 57 with 6 years of creditable service, or age 54 with 27 years of creditable service, which may include up to four years of active duty wartime military service, or 27 years of creditable service | 1.65 |
| Age 58 with 6 years of creditable service, or age 55 with 28 years of creditable service, which may include up to four years of active duty wartime military service, or 28 years of creditable service | 1.68 |

- For Members initially enrolled on or after July 1, 2011, for Creditable Service as a Special Risk Administrative Support Class member Subsequent to November 30, 1970:

| Retirement at: | Percentage |
|---|------------|
| Age 60 with 8 years of creditable service, or age 57 with 30 years of creditable service, which may include up to four years of active duty wartime military service, or 30 years of creditable service | 1.60% |
| Age 61 with 8 years of creditable service, or age 58 with 31 years of creditable service, which may include up to four years of active duty wartime military service, or 31 years of creditable service | 1.63 |
| Age 62 with 8 years of creditable service, or age 59 with 32 years of creditable service, which may include up to four years of active duty wartime military service, or 32 years of creditable service | 1.65 |
| Age 63 with 8 years of creditable service, or age 60 with 33 years of creditable service, which may include up to four years of active duty wartime military service, or 33 years of creditable service | 1.68 |

(Section 121.091(1))

- For Service as an Elected Officers' Class member:
3% for each year of creditable service in such class, except 3-1/3% for service in the judicial class. Military service credit is at the rate for Regular Class members.
(Sections 121.052(5)(a) and (d), 121.091(1))
- For Service as a Senior Management Service Class member:
2% for each year of creditable service in such class, after January 31, 1987.
(Section 121.055(4)(d))

Early Retirement

Eligibility

For members initially enrolled before July 1, 2011, six years of creditable service for all classes of membership.

For members initially enrolled on or after July 1, 2011, eight years of creditable service for all classes of membership.

(Section 121.021(30))

Benefit Amount

The normal retirement benefit accrued to the date of early retirement, reduced by 5/12% for each month that the early retirement date precedes the normal retirement date based upon age. The normal retirement date is as follows:

1. Special Risk Class members:
 - a. Initially enrolled before July 1, 2011: Age 55
 - b. Initially enrolled on or after July 1, 2011: Age 60
2. Members in all other Classes
 - a. Initially enrolled before July 1, 2011: Age 62
 - b. Initially enrolled on or after July 1, 2011: Age 65

(Sections 121.021(30), 121.091(3))

Non-Duty Disability Retirement

Eligibility

Members are eligible if totally and permanently disabled after completing at least 8 years of creditable service (or after 6 years if disability retirement is ordered for a judge by the Supreme Court).

Benefit Amount

Same as for normal retirement, but based on average monthly compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

25% of average monthly compensation.

If the Supreme Court orders disability retirement for a judge, the minimum is two-thirds of compensation at disability. This benefit for a defined benefit plan member is not paid from the FRS Trust Fund. This

benefit for an Investment Plan member is paid from the FRS Trust Fund after the member's IP account balance is transferred to the FRS Trust Fund.

(Section 121.091(4))

Line-of-Duty Disability

Eligibility

Members are eligible if totally and permanently disabled during the actual performance of duty. There is no service credit requirement.

Benefit Amount

Same as for normal retirement, but based on average monthly compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

42% of average monthly compensation, except for the Special Risk and the Special Risk Administrative Support classes whose members are entitled to 65% of average monthly compensation.

If the Supreme Court orders disability retirement for a judge, the minimum is two-thirds of compensation at disability. This benefit for a defined benefit plan member is not paid from the FRS Trust Fund.

(Section 121.091(4))

Post-Retirement Death Benefits

Based on the optional form elected.

Non-Duty Pre-Retirement Death Benefits

Eligibility

Employment is terminated by death after vested for all classes of membership.

Benefit Amount

The normal or early retirement benefit amount for which the member would have been eligible had the member retired on his or her date of death and elected the 100% joint and survivor form of payment in favor of his or her beneficiary who is the surviving spouse or other eligible dependent. The monthly benefit is normally payable to the member's beneficiary for the beneficiary's lifetime. If the beneficiary is the member's non-disabled child, payment ceases upon attainment of the beneficiary's 25th birthday.

If the member is more than 10 years away from normal retirement age, the reduction is 5% for each year the member would be younger than the normal retirement age at retirement. There are exceptions if within 10 years of normal retirement:

1. For members initially enrolled before July 1, 2011 who were within 10 years of normal retirement eligibility, the reduction for early retirement is applied from the earlier of age 62 (age 55 for Special Risk Class and Special Risk Administrative Support Class members) or the date on which the member would have completed 30 years of creditable service, had he or she continued employment.
2. For members initially enrolled on or after July 1, 2011 who were within 10 years of normal retirement eligibility, the reduction for early retirement is applied from the earlier of age 65 (age 60 for Special

Risk Class and Special Risk Administrative Support Class members) or the date on which the member would have completed 33 years of creditable service, had he or she continued employment. The value of this benefit may not be less than the member's accumulated contributions, if any.

(Sections 121.091(3) and (7))

Line-of-Duty Pre-Retirement Death Benefits

Eligibility

Member died during the actual performance of duty. There is no service credit requirement.

Benefit Amount

The surviving spouse will receive one-half of the member's monthly compensation at death. If the spouse dies, or if there is no surviving spouse, the monthly benefits continue until the youngest child is 18.

A surviving spouse may elect to receive a non-duty death benefit in lieu of the duty death benefit.

(Section 121.091(7))

Vesting

Eligibility

For members initially enrolled before July 1, 2011, six years of creditable service for all classes of membership. For members initially enrolled on or after July 1, 2011, eight years of creditable service for all membership classes.

Benefit Amount

The normal or early retirement benefit amount based on average monthly compensation and creditable service to the date of termination.

(Sections 121.021(45), 121.091(5))

DROP – Deferred Retirement Option Program

Eligibility

Vested FRS members are eligible for DROP participation upon attaining eligibility for normal retirement. Deferral of DROP participation for all but K-12 Instructional Personnel is allowed if the eligible participant is enrolled before July 1, 2011 and has completed 30 years of service (or 25 years for Special Risk Class members) and has not reached age 57 (or age 52 for Special Risk Class members). In this case the participant can defer participation in DROP until he reaches age 57 (or age 52 for Special Risk Class members). Deferral of DROP participation for all but K-12 Instructional Personnel is allowed if the eligible participant enrolled on or after July 1, 2011, has completed 33 years of service (or 30 years for Special Risk Class members) and has not reached age 60 (or age 55 for Special Risk Class members). In this case the participant can defer participation in DROP until he reaches age 60 (or age 55 for Special Risk Class members). Instructional Personnel in grades K-12 may defer DROP participation to any age. Participants who reached normal retirement before July 1, 1998 were eligible to participate in DROP for up to 60 months (36 months for Special Risk Class members) beginning July 1, 1998.

Effective July 1, 1998, eligible members can retire without terminating their employment during DROP participation. Monthly retirement benefits will be invested in the FRS Trust Fund, earning tax-deferred

interest while the member continues to work for a maximum of 60 months. The interest credit for those entering the DROP prior to July 1, 2011 is 6.5% annually. For those entering the DROP after that date, it is 1.3% annually. Upon completion of the maximum five-year period, DROP participation ends and participants must terminate employment with all FRS employers. At that time, the participant will receive payment of the accumulated DROP benefits, and begin receiving his FRS monthly retirement benefit (in the same amount as determined at retirement, plus annual cost-of-living increases).

Effective July 1, 2003, participants employed in eligible instructional positions with a district school board, the Florida School for the Deaf and Blind, or a developmental research school can extend their participation beyond their initial 60-month period, for up to an additional 36 months. The employer must approve the request for DROP extension as well as the period of extension granted to an eligible DROP participant, if any, within the 36-month limit.

Disabled While in DROP

Participants that became disabled while participating in DROP will continue to accumulate the same monthly benefit in the FRS Trust Fund until termination. Since the normal retirement benefit commenced upon DROP participation, a disability benefit will not be issued.

Death While in DROP

The designated beneficiary of a participant who dies while participating in DROP will receive all accumulated DROP benefits, and a continuing monthly benefit, if the participant had elected Option 2, 3, or 4. Survivors of DROP participants are not eligible for FRS line-of-duty death benefits.

(Section 121.091 (13))

Return of Employee Contributions

A member who terminates employment but is not eligible to retire, receive a vested retirement allowance, or receive a disability pension will be entitled to a refund of any employee contributions. The beneficiary of a member who passes away before satisfying the requirement for a pre-retirement death benefit will be entitled to a refund of any employee contributions made by the member. No interest is credited on employee contribution accounts.

A vested terminated participant may elect to receive a return of employee contributions in lieu of a retirement benefit.

(Sections 121.071(2)(b), 121.091(7)(a), Sections 121.091(5)(a) and (c))

Cost-of-Living Adjustment

Senate Bill 2100 (2011) eliminated post-retirement benefit increases on benefits earned on and after July 1, 2011. Benefits earned before July 1, 2011 (except for the health insurance subsidy) will receive post-retirement benefit increases of 3% per year. Tier II members (those initially enrolled on and after July 1, 2011) will receive no post-retirement benefit increases. Tier I members (those initially enrolled before July 1, 2011) will receive post-retirement benefit increases equal to 3% per year multiplied by a fraction, the numerator of which is service through June 30, 2011 and the denominator of which is total service at retirement. Cost-of-Living Adjustments take effect annually on July 1. A pro-rated rate may apply in the initial year of applicability.

(Section 121.101)

Additional Benefit Amount

In addition, members may receive an additional retirement allowance under the pre-1971 existing systems. The benefit is a percentage of average compensation times the creditable service in that system up to November 30, 1970. The system percentages are:

State and County Officers and Employees' Retirement System:

2.00% for creditable service rendered under Division A prior to Social Security coverage; and 1.50% for creditable service rendered under Division B subsequent to Social Security coverage.

Teachers Retirement System:

Plan E: 2.00%

(Sections 121.091(1)(c), 122.28, 238.07(7)(a))

Minimum Benefit

Eligibility

The month following attainment of age 65 by a pensioner or, in the case of a beneficiary receiving the survivor's portion of a member's benefit, the 65th anniversary of the deceased member's birth. The member must have earned at least 10 years of creditable service and retired under normal retirement.

Benefit Amount

An eligible benefit recipient will receive a benefit adjustment to bring the benefit to the calculated minimum benefit. Effective July 1, 2014, the minimum monthly benefit is \$28.68 multiplied by years of creditable service prior to application of the reduction factor for electing an optional form of payment. For retirements on or after July 1, 1987, creditable service for the minimum benefit calculation does not include any service earned on or after that date.

(Section 112.362)

Investment Plan (IP)

The Investment Plan (IP) is a defined contribution plan offered to eligible members as an alternative to the FRS Defined Benefit Program. The plan is authorized under sec. 401(a) of the Internal Revenue Code.

Benefits

Under the IP, benefits accrue in individual member accounts funded by employer and employee contributions made on or after July 1, 2011, and earnings thereon. Benefits are provided through employee-directed investments offered by approved investment providers. Vested benefits are payable upon termination or death as a lump-sum distribution, direct rollover distribution, or periodic distribution. In addition to normal benefits and death benefits, the plan also provides disability coverage as described below.

(Sections 121.4501, 121.591)

Contributions

The employer contributions deposited in each participant's IP account are based upon allocation rates established by law for each membership class. This statutorily prescribed percentage of the participant's gross compensation for the reporting month is deducted from the total amount paid by the employer on behalf of all members in the same class of membership based on the uniform contribution rate established by law.

Current IP allocation rates are set forth in the following charts. The allocation rates shown in the first chart below do not include the 0.03% charge for IP administration and education, the separate employer contribution assessed to fund the IP disability program, or the contribution of 1.26% for the financing of the health insurance subsidy described later in this part.

(Sections 121.71, 121.72)

Effective July 1, 2012, the employer allocations to the IP accounts are based on contribution rates as follows:

| Classification | 2014-2015 Plan Year Rates |
|-------------------------------------|---------------------------|
| Regular | 3.30% |
| Special Risk | 11.00 |
| Special Risk Administrative Support | 4.95 |
| Elected Officers' | |
| - Judicial | 10.23 |
| - Leg/Atty/Cab | 6.38 |
| - Local | 8.34 |
| Senior Management Service | 4.67 |

The employer contribution rates to fund the disability benefit under the IP are as follows:

| Classification | 2014-2015 Plan Year Rates |
|-------------------------------------|---------------------------|
| Regular | 0.25% |
| Special Risk | 1.33 |
| Special Risk Administrative Support | 0.45 |
| Elected Officers' | |
| - Judicial | 0.73 |
| - Leg/Atty/Cab | 0.41 |
| - Local | 0.41 |
| Senior Management Service | 0.26 |

(Section 121.73)

Non-Duty Disability Retirement

Eligibility

Investment Plan participants who have completed at least eight years of creditable service (or six years of creditable service if disability retirement is ordered for a judge by the Supreme Court) are eligible for regular disability benefits if they become totally and permanently disabled due to injury or illness suffered while actively employed in an FRS-covered position. Upon approval for disability retirement, the IP participant may choose either to retain his/her IP account balance or to surrender his/her account balance to the Defined Benefit Program and receive guaranteed lifetime monthly disability benefits, assuming the member remains disabled.

Benefit Amount

If the disabled IP participant chooses to retain his/her account balance, he/she may elect to receive the normal benefit payable under the IP. If he/she elects to surrender the account balance and receive lifetime monthly disability benefits, the amount of each monthly payment is calculated in the same manner as provided for regular disability retirement under the Defined Benefit Program and is subject to the same threshold benefit amounts.

(Sections 121.091(4), 121.591(1) and (2))

Line-of-Duty Disability

Eligibility

IP participants are eligible for in-line-of-duty disability benefits if they become totally and permanently disabled due to injury or illness suffered during the actual performance of duty while actively employed in an FRS-covered position. There is no service credit requirement for in-line-of-duty disability benefits. Upon approval for disability retirement, the IP member may choose either to retain his/her IP account balance or to surrender his/her account balance to the Defined Benefit Program and receive guaranteed lifetime monthly disability benefits, assuming the member remains disabled.

Benefit Amount

If the disabled IP participant elects to retain his/her account balance, he/she may elect to receive the normal benefit payable under the IP. If he/she elects to surrender the account balance and receive lifetime monthly disability benefits, the amount of each monthly payment is calculated in the same manner as provided for line-of-duty disability retirement under the Defined Benefit Program, and is subject to the same threshold benefit amounts.

(Sections 121.091(4), 121.591(1) and (2))

Teachers' Retirement System (TRS)

The benefit and contribution provisions of the Statutes for this closed system are set forth in Chapter 238 of the Florida Statutes. Certain provisions are from other sections of the Florida Statutes.

Effective Date

The effective date of the Retirement System was July 1, 1939.

(Section 238.02)

Membership

All employees who were teachers in public schools, employees of professional non-profit teachers associations, county superintendents, Department of Education employees and the staff of the Teachers' Retirement System, and who were employed prior to December 1, 1970, are members of the Teachers' Retirement System. TRS retirees are included with the Regular Membership Class in the valuation.

State and County Officers and Employees' Retirement System (SCOERS)

The benefit and contribution provisions of the Statutes are set forth in Chapter 122 of the Florida Statutes. Certain provisions are drawn from other sections of the Florida Statutes. This is a closed system that no longer includes any members in the high hazard or legislative categories. Effective with the July 1, 2013 valuation, there are no longer any actively employed members of this system. SCOERS retirees are included with the Regular Membership Class in the valuation.

Effective Date

The effective date of the Retirement System was July 1, 1955.

(Section 122.01(2))

Membership

All full-time employees of the state and its counties not covered by another system who were employed prior to December 1, 1970.

Institute of Food and Agricultural Sciences Supplemental Retirement Program (IFAS)

The benefit and contribution provisions of the Statutes are set forth in Chapter 121 of the Florida Statutes. Certain provisions are drawn from other sections of the Florida Statutes. This is a closed system. IFAS retirees are included with the Regular Membership Class in the valuation.

Effective Date

The effective date of the Supplemental Retirement Program was July 1, 1985.

(Section 121.40)

Membership

Employees hired on or before July 1, 1983 who:

- a. hold both state and federal appointments while employed at the Institute,
- b. are not entitled to any benefit from a state-supported retirement system or Social Security based on service as an employee of the Institute, and
- c. are participants in the Federal Civil Service Retirement System.

Appendix C: Membership Data

This valuation is based upon the membership of the System as of July 1, 2014.

The membership of the System includes employees of the State of Florida and participating political subdivisions. The membership is divided into several categories by membership class and subclass.

Tables C-1 through C-5 present distributions of annuitants (including beneficiaries of deceased members), and potential annuitants (terminated vested members). Shown in the tables are the numbers of persons receiving benefits and the total annual benefits.

Table C-6 summarizes the DROP membership and provides total annual benefits.

Table C-7 presents a summary by System of active membership, payroll, and accumulated employee contributions.

Tables C-8 through C-17 contain summaries of the active members in each category of membership. Values shown in the tables are the numbers of members and their average annual salaries. Table C-17 is the grand total of active members included in this valuation.

Table C-1
Florida Retirement System
Annuitants at July 1, 2014
Regular and Early Retirement by Age

| Age | Number of Persons | Annual Benefits (in Thousands) |
|----------|-------------------|-----------------------------------|
| Under 50 | 3,411 | \$40,179 |
| 50 to 54 | 5,734 | 119,810 |
| 55 to 59 | 20,268 | 425,180 |
| 60 to 64 | 53,359 | 1,165,853 |
| 65 to 69 | 87,122 | 1,813,799 |
| 70 to 74 | 68,984 | 1,347,840 |
| 75 to 79 | 46,258 | 870,624 |
| 80 & Up | 61,237 | 1,143,584 |
| Total | 346,373 | \$6,926,869 |

Table C-2
Florida Retirement System
Annuitants at July 1, 2014
Disability Retirement by Age

| Age | Number of Persons | Annual Benefits (in Thousands) |
|----------|-------------------|-----------------------------------|
| Under 50 | 791 | \$12,175 |
| 50 to 54 | 1,409 | 21,390 |
| 55 to 59 | 2,487 | 36,017 |
| 60 to 64 | 3,199 | 46,134 |
| 65 to 69 | 2,744 | 39,895 |
| 70 to 74 | 1,741 | 24,628 |
| 75 to 79 | 813 | 10,646 |
| 80 & Up | 675 | 7,944 |
| Total | 13,859 | \$198,829 |

Table C-3
Florida Retirement System
Potential Annuitants at July 1, 2014
Vested Terminated Members by Age for the Regular,
Senior Management Service, and Elected Officers' Classes

| Age | Number of Persons | Annual Benefits (in Thousands) ¹ |
|----------|-------------------|--|
| Under 30 | 562 | \$1,426 |
| 30 to 34 | 3,591 | 14,320 |
| 35 to 39 | 7,537 | 35,610 |
| 40 to 44 | 12,559 | 66,340 |
| 45 to 49 | 15,523 | 94,296 |
| 50 to 54 | 21,912 | 135,539 |
| 55 to 59 | 18,097 | 123,895 |
| 60 & Up | 20,868 | 109,544 |
| Total | 100,649 | \$580,970 |

¹ Deferred to Age 62

Table C-4
Florida Retirement System
Potential Annuitants at July 1, 2014
Vested Terminated Members by Age for the
Special Risk & Special Risk Administrative Support Classes

| Age | Number of Persons | Annual Benefits (in Thousands) ² |
|----------|-------------------|--|
| Under 30 | 65 | \$475 |
| 30 to 34 | 345 | 3,172 |
| 35 to 39 | 748 | 7,697 |
| 40 to 44 | 1,461 | 17,070 |
| 45 to 49 | 1,487 | 19,384 |
| 50 to 54 | 1,152 | 16,457 |
| 55 to 59 | 399 | 5,366 |
| 60 & Up | 444 | 4,901 |
| Total | 6,101 | \$74,522 |

² Deferred to Age 55

**Table C-5
Florida Retirement System
Annuitants and Potential Annuitants at July 1, 2014
All Types of Retirement by System**

| System | Annuitants | Potential Annuitants | Total |
|---------------------------------------|--------------------|----------------------|--------------------|
| Number of Persons | | | |
| Regular | 323,154 | 99,193 | 422,347 |
| Senior Management Service | 3,518 | 1,098 | 4,616 |
| Special Risk | 31,101 | 6,085 | 37,186 |
| Special Risk Administrative | 170 | 16 | 186 |
| EOC: Judicial | 771 | 43 | 814 |
| EOC: Legislative/Attorneys/Cabinet | 209 | 89 | 298 |
| EOC: Local | 1,309 | 226 | 1,535 |
| Total | 360,232 | 106,750 | 466,982 |
| Annual Benefits (in Thousands) | | | |
| Regular | \$5,687,793 | \$555,335 | \$6,243,128 |
| Senior Management Service | 163,731 | 20,243 | 183,974 |
| Special Risk | 1,157,901 | 74,408 | 1,232,309 |
| Special Risk Administrative | 6,168 | 114 | 6,282 |
| EOC: Judicial | 64,124 | 1,979 | 66,103 |
| EOC: Legislative/Attorneys/Cabinet | 6,575 | 1,065 | 7,640 |
| EOC: Local | 39,406 | 2,347 | 41,753 |
| Total | \$7,125,698 | \$655,491 | \$7,781,189 |

**Table C-6
Florida Retirement System
Annuitants at July 1, 2014
DROP Members**

| Age | Number of Persons | Annual Benefits (in Thousands) |
|--------------|-------------------|--------------------------------|
| Under 50 | 534 | \$34,571 |
| 50 to 54 | 3,292 | 163,157 |
| 55 to 59 | 9,185 | 331,748 |
| 60 to 64 | 15,771 | 393,904 |
| 65 to 69 | 8,926 | 174,966 |
| 70 to 74 | 298 | 5,141 |
| 75 to 79 | 40 | 430 |
| 80 & Up | 9 | 101 |
| Total | 38,055 | \$1,104,018 |

Table C-7
Florida Retirement System
Summary of Active Members at July 1, 2014

| System | Number of Persons | Annual Salary (in Thousands) ¹ | Accumulated Employee Contributions (in Thousands) |
|--|-------------------|--|--|
| Regular | 447,162 | \$18,037,274 | \$1,468,734 |
| Senior Management Service | 5,490 | 473,008 | 42,010 |
| Special Risk | 57,366 | 3,225,469 | 271,469 |
| Special Risk Administrative | 65 | 3,140 | 271 |
| EOC: Judicial | 705 | 100,514 | 8,715 |
| EOC: Legislative/Attorneys/Cabinet | 113 | 6,519 | 610 |
| EOC: Local | 811 | 41,893 | 3,679 |
| Teachers' Retirement System (TRS) | 18 | 1,773 | 6,135 |
| Institute of Food and Agricultural Sciences (IFAS) | 21 | 2,043 | 0 |
| Total | 511,751 | \$21,891,633 | \$1,801,623 |

¹ The salary shown in Tables C-7 through C-17 represents the salaries of the FRS DB plan members on July 1, 2014. The payroll on which normal costs are determined (\$22,400,477,000) equals the salaries for these DB plan members (excluding TRS and IFAS), adjusted to the middle of the plan year. The payroll on which UAL costs are charged additionally includes the payroll of certain other groups, and is described in Section 4 of the report.

**Table C-8
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Regular Class**

| Age | Years of Service | | | | | | | | | | | All Years | |
|--------------------|------------------|--------------|--------------|--------------|--------------|------------|------------|------------|------------|-----------|----------|-----------|---------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | 798 | 1 | | | | | | | | | | | 799 |
| 20 to 24 | 11,843 | 216 | 1 | | 1 | | | | | | | | 12,061 |
| 25 to 29 | 24,759 | 6,273 | 188 | | | | | | | | | | 31,220 |
| 30 to 34 | 16,540 | 18,353 | 6,024 | 151 | | | | | | | | | 41,068 |
| 35 to 39 | 11,905 | 13,771 | 15,083 | 4,321 | 104 | | | | | | | | 45,184 |
| 40 to 44 | 11,627 | 12,750 | 14,165 | 13,157 | 4,131 | 199 | | | | | | | 56,029 |
| 45 to 49 | 10,488 | 12,453 | 13,143 | 11,961 | 11,210 | 4,839 | 153 | | | | | | 64,247 |
| 50 to 54 | 9,217 | 12,137 | 13,642 | 12,586 | 11,213 | 12,598 | 2,844 | 45 | | | | | 74,282 |
| 55 to 59 | 6,456 | 10,026 | 12,259 | 11,897 | 10,873 | 11,819 | 3,842 | 451 | 11 | | | | 67,634 |
| 60 to 64 | 3,089 | 6,762 | 7,616 | 6,840 | 6,623 | 6,651 | 1,444 | 468 | 115 | 3 | | | 39,611 |
| 65 & Up | <u>1,622</u> | <u>3,624</u> | <u>3,927</u> | <u>2,446</u> | <u>1,439</u> | <u>957</u> | <u>437</u> | <u>296</u> | <u>214</u> | <u>57</u> | <u>8</u> | | <u>15,027</u> |
| Total Count | 108,344 | 96,366 | 86,048 | 63,359 | 45,594 | 37,063 | 8,720 | 1,260 | 340 | 60 | 8 | | 447,162 |

| Age | Years of Service | | | | | | | | | | | All Years | |
|---------------------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------|---------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | 8,369 | 16,071 | | | | | | | | | | | 8,379 |
| 20 to 24 | 20,589 | 20,052 | 54,319 | | 18,118 | | | | | | | | 20,582 |
| 25 to 29 | 30,681 | 33,871 | 34,488 | | | | | | | | | | 31,345 |
| 30 to 34 | 30,848 | 39,002 | 41,063 | 41,731 | | | | | | | | | 36,030 |
| 35 to 39 | 29,602 | 38,466 | 44,919 | 46,787 | 48,186 | | | | | | | | 39,103 |
| 40 to 44 | 29,011 | 36,604 | 43,301 | 49,847 | 52,964 | 51,695 | | | | | | | 41,091 |
| 45 to 49 | 28,521 | 35,046 | 40,968 | 46,541 | 55,275 | 54,623 | 54,650 | | | | | | 42,383 |
| 50 to 54 | 28,313 | 34,762 | 39,128 | 43,488 | 51,853 | 58,634 | 58,853 | 57,801 | | | | | 43,807 |
| 55 to 59 | 28,282 | 34,742 | 39,381 | 42,413 | 49,889 | 56,127 | 62,375 | 59,457 | 49,902 | | | | 44,225 |
| 60 to 64 | 26,279 | 34,996 | 39,840 | 43,144 | 49,405 | 55,196 | 61,334 | 62,875 | 63,873 | 42,713 | | | 43,830 |
| 65 & Up | <u>18,777</u> | <u>28,184</u> | <u>34,784</u> | <u>38,138</u> | <u>45,609</u> | <u>51,143</u> | <u>64,649</u> | <u>75,601</u> | <u>80,767</u> | <u>87,731</u> | <u>93,113</u> | | <u>36,648</u> |
| Avg. Annual Salary | 28,284 | 36,055 | 41,137 | 45,160 | 51,765 | 56,463 | 61,032 | 64,460 | 74,054 | 85,480 | 93,113 | | 40,337 |



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Table C-9
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Special Risk Class

| Age | Count | | | | | | | | | | | All Years |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | 12 | 2 | | | | | | | | | | 14 |
| 20 to 24 | 2,720 | 49 | 1 | | | | | | | | | 2,770 |
| 25 to 29 | 4,597 | 2,829 | 40 | | | | | | | | | 7,466 |
| 30 to 34 | 2,386 | 4,511 | 1,987 | 29 | | | | | | | | 8,913 |
| 35 to 39 | 1,245 | 2,755 | 3,315 | 1,251 | 23 | | | | | | | 8,589 |
| 40 to 44 | 840 | 2,026 | 2,835 | 3,154 | 1,489 | 57 | | | | | | 10,401 |
| 45 to 49 | 598 | 1,293 | 1,703 | 2,131 | 2,656 | 1,023 | 15 | | | | | 9,419 |
| 50 to 54 | 386 | 862 | 1,035 | 1,111 | 1,597 | 1,037 | 86 | | | | | 6,114 |
| 55 to 59 | 186 | 500 | 532 | 362 | 358 | 278 | 100 | 12 | | | | 2,328 |
| 60 to 64 | 48 | 226 | 274 | 193 | 172 | 130 | 27 | 14 | 2 | | | 1,086 |
| 65 & Up | 9 | 57 | 67 | 61 | 36 | 19 | 10 | 6 | 1 | | | 266 |
| Total Count | 13,027 | 15,110 | 11,789 | 8,292 | 6,331 | 2,544 | 238 | 32 | 3 | | | 57,366 |

| Age | Average Salary (\$) | | | | | | | | | | | All Years |
|---------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|---------|---------------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | 25,914 | 34,388 | | | | | | | | | | 27,124 |
| 20 to 24 | 33,952 | 39,021 | 48,235 | | | | | | | | | 34,047 |
| 25 to 29 | 38,566 | 46,093 | 48,232 | | | | | | | | | 41,470 |
| 30 to 34 | 39,411 | 52,452 | 58,833 | 59,853 | | | | | | | | 50,408 |
| 35 to 39 | 39,142 | 53,435 | 62,945 | 64,803 | 70,302 | | | | | | | 56,735 |
| 40 to 44 | 39,646 | 52,307 | 63,364 | 68,602 | 73,167 | 76,120 | | | | | | 62,356 |
| 45 to 49 | 42,381 | 51,345 | 61,750 | 67,150 | 75,994 | 78,320 | 79,788 | | | | | 66,159 |
| 50 to 54 | 49,554 | 53,272 | 58,969 | 63,936 | 72,598 | 74,909 | 78,772 | | | | | 65,016 |
| 55 to 59 | 43,934 | 51,700 | 58,729 | 58,118 | 65,307 | 68,581 | 73,062 | 94,121 | | | | 58,928 |
| 60 to 64 | 42,932 | 50,445 | 54,552 | 54,398 | 66,431 | 66,412 | 77,565 | 76,848 | 120,105 | | | 57,438 |
| 65 & Up | <u>38,949</u> | <u>50,396</u> | <u>54,411</u> | <u>62,412</u> | <u>64,959</u> | <u>75,220</u> | <u>76,038</u> | <u>88,488</u> | <u>61,796</u> | | | <u>59,385</u> |
| Avg. Annual Salary | 38,464 | 51,265 | 61,346 | 66,166 | 73,525 | 75,185 | 76,185 | 85,508 | 100,668 | | | 56,226 |



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Table C-10
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Special Risk Administrative Support Class

| Age | Years of Service | | | | | | | | | | | All Years |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 2 | 1 | | | | | | | | | | 3 |
| 30 to 34 | | 2 | 4 | | | | | | | | | 6 |
| 35 to 39 | | | 1 | 5 | | | | | | | | 6 |
| 40 to 44 | | | 3 | 14 | 3 | | | | | | | 20 |
| 45 to 49 | | 1 | 1 | | 5 | 4 | | | | | | 11 |
| 50 to 54 | | | 2 | 2 | 7 | 3 | | | | | | 14 |
| 55 to 59 | | | 1 | | 1 | | | | | | | 2 |
| 60 to 64 | | | 1 | 1 | 1 | | | | | | | 3 |
| 65 & Up | | | | | | | | | | | | |
| Total Count | 2 | 4 | 13 | 22 | 17 | 7 | | | | | | 65 |

| Age | Years of Service | | | | | | | | | | | All Years |
|---------------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 34,629 | 22,704 | | | | | | | | | | 30,654 |
| 30 to 34 | | 32,233 | 38,331 | | | | | | | | | 36,298 |
| 35 to 39 | | | 39,466 | 47,913 | | | | | | | | 46,505 |
| 40 to 44 | | | 38,894 | 53,645 | 83,313 | | | | | | | 55,883 |
| 45 to 49 | | 37,239 | 50,223 | | 44,924 | 45,525 | | | | | | 44,926 |
| 50 to 54 | | | 39,208 | 41,444 | 48,782 | 71,311 | | | | | | 51,193 |
| 55 to 59 | | | 38,602 | | 43,277 | | | | | | | 40,940 |
| 60 to 64 | | | 55,210 | 43,649 | 42,310 | | | | | | | 47,056 |
| 65 & Up | | | | | | | | | | | | |
| Avg. Annual Salary | 34,629 | 31,102 | 40,917 | 50,779 | 53,036 | 56,576 | | | | | | 48,313 |



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Table C-11
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Elected Officers' Class: Judicial Subclass

| Age | Years of Service | | | | | | | | | | | All Years |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | |
| 35 to 39 | 4 | 5 | 4 | | | | | | | | | 13 |
| 40 to 44 | 10 | 14 | 19 | 16 | | | | | | | | 59 |
| 45 to 49 | 13 | 22 | 26 | 24 | 18 | | | | | | | 103 |
| 50 to 54 | 12 | 31 | 27 | 25 | 24 | 24 | | | | | | 143 |
| 55 to 59 | 17 | 26 | 27 | 47 | 33 | 35 | 22 | | | | | 207 |
| 60 to 64 | 2 | 21 | 22 | 17 | 31 | 25 | 7 | | | | | 125 |
| 65 & Up | 1 | 25 | 18 | 4 | 5 | 2 | | | | | | 55 |
| Total Count | 59 | 144 | 143 | 133 | 111 | 86 | 29 | | | | | 705 |

| Age | Years of Service | | | | | | | | | | | All Years |
|---------------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------|----------|----------|----------|---------|----------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | |
| 35 to 39 | 136,030 | 142,606 | 141,815 | | | | | | | | | 140,339 |
| 40 to 44 | 129,356 | 143,774 | 140,173 | 139,741 | | | | | | | | 139,077 |
| 45 to 49 | 120,268 | 142,606 | 143,219 | 143,943 | 142,739 | | | | | | | 140,276 |
| 50 to 54 | 130,161 | 143,793 | 144,636 | 142,045 | 143,712 | 142,808 | | | | | | 142,324 |
| 55 to 59 | 144,898 | 144,299 | 146,814 | 143,017 | 142,721 | 141,287 | 142,275 | | | | | 143,409 |
| 60 to 64 | 145,830 | 142,831 | 145,464 | 146,778 | 144,796 | 143,373 | 142,478 | | | | | 144,455 |
| 65 & Up | <u>137,770</u> | <u>145,185</u> | <u>144,490</u> | <u>145,846</u> | <u>142,641</u> | <u>137,995</u> | | | | | | <u>144,378</u> |
| Avg. Annual Salary | 133,149 | 143,761 | 144,227 | 143,173 | 143,514 | 142,241 | 142,324 | | | | | 142,573 |



Table C-12
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Elected Officers' Class: Legislators/Attorney/Cabinet Subclass

| Age | Years of Service | | | | | | | | | | | All Years |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 1 | | | | | | | | | | | 1 |
| 30 to 34 | 5 | 2 | | | | | | | | | | 7 |
| 35 to 39 | 3 | 3 | 4 | 1 | | | | | | | | 11 |
| 40 to 44 | 4 | 5 | 4 | 2 | | | | | | | | 15 |
| 45 to 49 | 2 | 3 | 8 | 3 | 2 | | | | | | | 18 |
| 50 to 54 | 2 | 2 | 5 | 2 | 2 | 1 | | | | | | 12 |
| 55 to 59 | 5 | 4 | 5 | 5 | 2 | 2 | 1 | | | | | 24 |
| 60 to 64 | 2 | 2 | 2 | 1 | 1 | 2 | | | | | | 10 |
| 65 & Up | 1 | 3 | 5 | 4 | 1 | | | | | 1 | | 15 |
| Total Count | 25 | 24 | 33 | 16 | 8 | 4 | 2 | | | 1 | | 113 |

| Age | Years of Service | | | | | | | | | | | All Years |
|---------------------------|------------------|---------------|---------------|---------------|---------------|----------|----------|----------|----------|----------------|---------|---------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 29,697 | | | | | | | | | | | 29,697 |
| 30 to 34 | 29,697 | 29,697 | | | | | | | | | | 29,697 |
| 35 to 39 | 29,697 | 29,697 | 29,697 | 29,697 | | | | | | | | 29,697 |
| 40 to 44 | 29,298 | 74,150 | 60,745 | 91,794 | | | | | | | | 60,967 |
| 45 to 49 | 29,697 | 29,697 | 45,221 | 29,697 | 141,489 | | | | | | | 49,018 |
| 50 to 54 | 29,697 | 29,697 | 29,697 | 29,697 | 153,890 | | 153,890 | | | | | 60,745 |
| 55 to 59 | 54,536 | 29,697 | 74,391 | 79,374 | 153,890 | 153,890 | 153,890 | | | | | 80,406 |
| 60 to 64 | 29,697 | 29,697 | 29,697 | 153,890 | 153,890 | 153,890 | | | | | | 79,374 |
| 65 & Up | <u>29,697</u> | <u>29,697</u> | <u>29,697</u> | <u>60,745</u> | <u>41,181</u> | | | | | <u>153,890</u> | | <u>47,022</u> |
| Avg. Annual Salary | 34,601 | 38,958 | 43,996 | 68,507 | 136,701 | 153,890 | 153,890 | | | 153,890 | | 57,689 |



Table C-13
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Elected Officers' Class: Local Subclass

| Age | Count | | | | | | | | | | | All Years |
|--------------------|------------------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|---------|------------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 1 | 1 | | | | | | | | | | 2 |
| 30 to 34 | 8 | 5 | 1 | | | | | | | | | 14 |
| 35 to 39 | 10 | 11 | 4 | 2 | | | | | | | | 27 |
| 40 to 44 | 26 | 11 | 6 | 7 | 5 | 1 | | | | | | 56 |
| 45 to 49 | 21 | 19 | 14 | 13 | 9 | 10 | 1 | | | | | 87 |
| 50 to 54 | 24 | 22 | 22 | 16 | 11 | 21 | 8 | | | | | 124 |
| 55 to 59 | 23 | 26 | 37 | 22 | 24 | 18 | 10 | 2 | | | | 162 |
| 60 to 64 | 20 | 39 | 26 | 24 | 31 | 7 | 9 | 2 | | | | 158 |
| 65 & Up | <u>25</u> | <u>53</u> | <u>34</u> | <u>31</u> | <u>17</u> | <u>17</u> | <u>2</u> | <u>2</u> | | | | <u>181</u> |
| Total Count | 158 | 187 | 144 | 115 | 97 | 74 | 30 | 6 | | | | 811 |

| Age | Average Salary (\$) | | | | | | | | | | | All Years |
|---------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|----------|---------|---------------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | 3,000 | 34,200 | | | | | | | | | | 18,600 |
| 30 to 34 | 43,794 | 29,549 | 96,089 | | | | | | | | | 42,442 |
| 35 to 39 | 26,822 | 46,852 | 49,407 | 26,318 | | | | | | | | 38,291 |
| 40 to 44 | 43,563 | 52,972 | 61,263 | 61,994 | 89,626 | 95,341 | | | | | | 54,649 |
| 45 to 49 | 38,464 | 44,663 | 58,056 | 54,124 | 64,555 | 111,776 | 100,331 | | | | | 57,147 |
| 50 to 54 | 32,419 | 54,966 | 46,912 | 63,359 | 70,377 | 87,378 | 103,168 | | | | | 60,222 |
| 55 to 59 | 35,913 | 44,217 | 48,535 | 45,438 | 65,653 | 94,706 | 101,961 | 87,398 | | | | 57,073 |
| 60 to 64 | 31,775 | 53,257 | 50,600 | 58,991 | 55,816 | 74,502 | 64,382 | 85,763 | | | | 53,460 |
| 65 & Up | <u>14,388</u> | <u>36,608</u> | <u>39,810</u> | <u>46,523</u> | <u>44,519</u> | <u>63,900</u> | <u>33,072</u> | <u>15,136</u> | | | | <u>38,869</u> |
| Avg. Annual Salary | 32,666 | 45,480 | 48,410 | 52,709 | 60,475 | 85,953 | 86,362 | 62,765 | | | | 51,656 |



Table C-14
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Senior Management Service Class

| Age | Count | | | | | | | | | | | All Years |
|--------------------|------------------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|---------|------------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | 1 | | | | | | | | | | | 1 |
| 25 to 29 | 454 | 8 | | | | | | | | | | 462 |
| 30 to 34 | 318 | 173 | 9 | | | | | | | | | 500 |
| 35 to 39 | 82 | 158 | 159 | 49 | 2 | | | | | | | 450 |
| 40 to 44 | 66 | 101 | 172 | 191 | 71 | 7 | | | | | | 608 |
| 45 to 49 | 45 | 74 | 108 | 176 | 275 | 126 | 6 | | | | | 810 |
| 50 to 54 | 52 | 85 | 97 | 161 | 242 | 333 | 67 | | | | | 1,037 |
| 55 to 59 | 44 | 75 | 98 | 134 | 199 | 272 | 93 | 3 | | | | 918 |
| 60 to 64 | 19 | 61 | 82 | 80 | 98 | 132 | 29 | 19 | 1 | | | 521 |
| 65 & Up | <u>2</u> | <u>39</u> | <u>36</u> | <u>35</u> | <u>33</u> | <u>18</u> | <u>9</u> | <u>7</u> | <u>3</u> | | 1 | <u>183</u> |
| Total Count | 1,083 | 774 | 761 | 826 | 920 | 888 | 204 | 29 | 4 | | 1 | 5,490 |

| Age | Average Salary (\$) | | | | | | | | | | | All Years |
|---------------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|----------------|----------------|
| | Years of Service | | | | | | | | | | | |
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | 31,515 | | | | | | | | | | | 31,515 |
| 25 to 29 | 42,767 | 51,255 | | | | | | | | | | 42,914 |
| 30 to 34 | 47,119 | 55,825 | 68,329 | | | | | | | | | 50,513 |
| 35 to 39 | 59,925 | 60,998 | 71,594 | 74,790 | 110,713 | | | | | | | 66,269 |
| 40 to 44 | 68,932 | 76,613 | 78,950 | 86,390 | 84,722 | 66,788 | | | | | | 80,346 |
| 45 to 49 | 82,872 | 84,686 | 88,240 | 88,311 | 97,115 | 96,392 | 78,999 | | | | | 91,845 |
| 50 to 54 | 86,800 | 93,806 | 87,591 | 96,717 | 100,901 | 100,868 | 102,710 | | | | | 97,824 |
| 55 to 59 | 107,316 | 102,444 | 96,415 | 97,970 | 103,040 | 106,332 | 110,877 | 121,746 | | | | 103,579 |
| 60 to 64 | 99,099 | 101,784 | 102,075 | 91,917 | 114,097 | 111,485 | 133,563 | 134,946 | 98,894 | | | 107,963 |
| 65 & Up | <u>98,541</u> | <u>108,233</u> | <u>116,537</u> | <u>110,118</u> | <u>120,119</u> | <u>131,729</u> | <u>155,394</u> | <u>171,552</u> | <u>101,796</u> | | <u>341,435</u> | <u>120,486</u> |
| Avg. Annual Salary | 54,423 | 77,257 | 86,226 | 91,543 | 101,100 | 103,842 | 112,446 | 142,417 | 101,071 | | 341,435 | 86,158 |



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**Table C-15
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
TRS – Teachers’ Retirement System**

| Age | Years of Service | | | | | | | | | | | All Years | |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | | |
| 35 to 39 | | | | | | | | | | | | | |
| 40 to 44 | | | | | | | | | | | | | |
| 45 to 49 | | | | | | | | | | | | | |
| 50 to 54 | | | | | | | | | | | | | |
| 55 to 59 | | | | | | | | | | | | | |
| 60 to 64 | | | | | | | | | | | | | |
| 65 & Up | | | | | | | | | | <u>8</u> | <u>8</u> | <u>2</u> | <u>18</u> |
| Total Count | | | | | | | | | | 8 | 8 | 2 | 18 |

| Age | Years of Service | | | | | | | | | | | All Years | |
|---------------------------|------------------|---------|----------|----------|----------|----------|----------|----------|---------------|----------------|----------------|---------------|--|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | | |
| 35 to 39 | | | | | | | | | | | | | |
| 40 to 44 | | | | | | | | | | | | | |
| 45 to 49 | | | | | | | | | | | | | |
| 50 to 54 | | | | | | | | | | | | | |
| 55 to 59 | | | | | | | | | | | | | |
| 60 to 64 | | | | | | | | | | | | | |
| 65 & Up | | | | | | | | | <u>90,921</u> | <u>101,455</u> | <u>117,095</u> | <u>98,511</u> | |
| Avg. Annual Salary | | | | | | | | | 90,921 | 101,455 | 117,095 | 98,511 | |



Table C-16
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
IFAS – Institute of Food and Agricultural Sciences

| Age | Years of Service | | | | | | | | | | | All Years |
|--------------------|------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | |
| 35 to 39 | | | | | | | | | | | | |
| 40 to 44 | | | | | | | | | | | | |
| 45 to 49 | | | | | | | | | | | | |
| 50 to 54 | | | | | | | | | | | | |
| 55 to 59 | | | | | | | 1 | 1 | | | | 2 |
| 60 to 64 | | | | | | | 8 | 5 | | | | 13 |
| 65 & Up | | | | | | | 5 | 1 | | | | 6 |
| Total Count | | | | | | | 14 | 7 | | | | 21 |

| Age | Years of Service | | | | | | | | | | | All Years |
|---------------------------|------------------|---------|----------|----------|----------|----------|----------------|---------------|----------|----------|---------|----------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | |
| Under 20 | | | | | | | | | | | | |
| 20 to 24 | | | | | | | | | | | | |
| 25 to 29 | | | | | | | | | | | | |
| 30 to 34 | | | | | | | | | | | | |
| 35 to 39 | | | | | | | | | | | | |
| 40 to 44 | | | | | | | | | | | | |
| 45 to 49 | | | | | | | | | | | | |
| 50 to 54 | | | | | | | | | | | | |
| 55 to 59 | | | | | | | 63,035 | 90,524 | | | | 76,780 |
| 60 to 64 | | | | | | | 110,123 | 79,675 | | | | 98,412 |
| 65 & Up | | | | | | | <u>109,368</u> | <u>62,989</u> | | | | <u>101,638</u> |
| Avg. Annual Salary | | | | | | | 106,490 | 78,841 | | | | 97,274 |



Table C-17
Florida Retirement System
Member Counts and Average Salaries at July 1, 2014
Grand Totals of All Active Participants

| Age | Count | | | | | | | | | | | All Years | |
|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|-----------|-----------|-----------|---------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | 810 | 3 | | | | | | | | | | | 813 |
| 20 to 24 | 14,564 | 265 | 2 | | 1 | | | | | | | | 14,832 |
| 25 to 29 | 29,814 | 9,112 | 228 | | | | | | | | | | 39,154 |
| 30 to 34 | 19,257 | 23,046 | 8,025 | 180 | | | | | | | | | 50,508 |
| 35 to 39 | 13,249 | 16,703 | 18,570 | 5,629 | 129 | | | | | | | | 54,280 |
| 40 to 44 | 12,573 | 14,907 | 17,204 | 16,541 | 5,699 | 264 | | | | | | | 67,188 |
| 45 to 49 | 11,167 | 13,865 | 15,003 | 14,308 | 14,175 | 6,002 | 175 | | | | | | 74,695 |
| 50 to 54 | 9,693 | 13,139 | 14,830 | 13,901 | 13,096 | 14,016 | 3,006 | 45 | | | | | 81,726 |
| 55 to 59 | 6,731 | 10,657 | 12,959 | 12,467 | 11,490 | 12,425 | 4,069 | 468 | 11 | | | | 71,277 |
| 60 to 64 | 3,180 | 7,111 | 8,023 | 7,156 | 6,957 | 6,955 | 1,521 | 503 | 118 | 3 | | | 41,527 |
| 65 & Up | <u>1,660</u> | <u>3,801</u> | <u>4,087</u> | <u>2,581</u> | <u>1,531</u> | <u>1,018</u> | <u>459</u> | <u>311</u> | <u>226</u> | <u>66</u> | <u>11</u> | | <u>15,751</u> |
| Total Count | 122,698 | 112,609 | 98,931 | 72,763 | 53,078 | 40,680 | 9,230 | 1,327 | 355 | 69 | 11 | | 511,751 |

| Age | Average Salary (\$) | | | | | | | | | | | All Years | |
|---------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|-----------|---------------|
| | Under 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 & Up | | |
| Under 20 | 8,629 | 28,282 | | | | | | | | | | | 8,701 |
| 20 to 24 | 23,085 | 23,560 | 51,277 | | 18,118 | | | | | | | | 23,097 |
| 25 to 29 | 32,080 | 37,679 | 36,899 | | | | | | | | | | 33,411 |
| 30 to 34 | 32,183 | 41,758 | 45,499 | 44,651 | | | | | | | | | 38,712 |
| 35 to 39 | 30,716 | 41,184 | 48,383 | 51,025 | 53,099 | | | | | | | | 42,141 |
| 40 to 44 | 30,041 | 39,134 | 47,080 | 53,945 | 58,686 | 57,534 | | | | | | | 44,844 |
| 45 to 49 | 29,608 | 37,014 | 43,864 | 50,291 | 60,094 | 59,628 | 57,901 | | | | | | 46,072 |
| 50 to 54 | 29,609 | 36,648 | 41,030 | 45,938 | 55,487 | 61,031 | 60,550 | 57,801 | | | | | 46,280 |
| 55 to 59 | 29,572 | 36,302 | 40,870 | 43,865 | 51,607 | 57,817 | 64,305 | 60,865 | 49,902 | | | | 45,799 |
| 60 to 64 | 27,078 | 36,477 | 41,302 | 44,308 | 51,205 | 56,902 | 63,451 | 66,077 | 65,122 | 42,713 | | | 45,355 |
| 65 & Up | <u>18,995</u> | <u>30,226</u> | <u>36,345</u> | <u>39,991</u> | <u>47,972</u> | <u>53,687</u> | <u>66,535</u> | <u>77,620</u> | <u>81,322</u> | <u>90,397</u> | <u>120,048</u> | | <u>38,513</u> |
| Avg. Annual Salary | 29,653 | 38,533 | 44,053 | 48,278 | 55,436 | 58,930 | 62,931 | 66,663 | 74,964 | 88,324 | 120,048 | | 42,778 |



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Appendix D: Projections

Table D-1 presents a projection of total costs of the employers covered by the FRS (exclusive of the Investment Plan) during the five-year period following the actuarial valuation date, July 1, 2014. The contributions shown beginning with plan year 2015-2016 are based on the assumption that the contribution levels calculated in this report are extended throughout the projection period. The contributions shown for plan year 2014-2015 are based on the legislated rates (before blending) on page B-3 of this report.

Table D-2 reflects, for each membership class and DROP, the outstanding UAL balance of all amortization bases combined as of July 1, 2014. The table develops the associated duration of the amortization of the combined amortization bases.

Beginning in the July 1, 1998 actuarial valuation with the emergence of the surplus, all UAL bases in existence as that time were considered to be fully amortized. While the Plan was in surplus, the UAL amortization payment or credit was made from the surplus for certain post-1998 benefit increases and the 1998 and 2003 experience studies prior to any use of the surplus for contribution rate reductions or any other FRS uses. Now that the plan is no longer in surplus, the UAL payment is made by employers as part of the contribution rate.

Table D-3 estimates the available surplus / (UAL payment) for the next three plan years based on Florida law. The estimates are projections of our July 1, 2014 valuation results, and assume experience occurs as stated in our July 1, 2014 valuation.

All three tables reflect that no surplus is available for rate reduction. The amortization methodology recognizes the time value of money.

Table D-1
Florida Retirement System
Projection of Retirement Costs (Excluding Member Contributions)
July 1, 2014
Based on Contribution Rates Before Blending

(All Amounts in Millions)

| | 2014 <u>-2015</u> | 2015 <u>-2016</u> | 2016 <u>-2017</u> | 2017 <u>-2018</u> | 2018 <u>-2019</u> |
|---|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| A. Employer Normal Cost ¹ | \$1,143 | \$1,046 | \$1,079 | \$1,115 | \$1,150 |
| B. UAL Payment / (Surplus Utilization) ² | <u>\$1,233</u> | <u>\$1,376</u> ² | <u>\$1,421</u> ² | <u>\$1,467</u> ² | <u>\$1,514</u> ² |
| C. Total | \$2,376 | \$2,422 | \$2,500 | \$2,582 | \$2,664 |

¹ Includes DROP contributions on behalf of DROP members.

² UAL Payment increase is based on assumed increasing payroll, but does not reflect the recognition and funding of deferred investment gains.

Table D-2
Florida Retirement System
Funding of UAL / (Surplus) by Duration of Amortization
July 1, 2014
 (\$ in thousands)

| | Years to Amortize Surplus | | | | | | | |
|--|---------------------------|-----------------|--------------------------------|-------------------------------|-----------------|-----------------|----------------------|-----------------|
| | Regular | Special Risk | Special Risk Administrative | -- Elected Officers' Class -- | | | Senior Management | DROP |
| | Judicial | Leg-Atty-Cab | Local | | | | | |
| Valuation Date Outstanding UAL Balance / (Surplus) | \$10,948,418 | \$5,575,964 | \$16,860 | \$398,898 | \$51,675 | \$304,320 | \$1,609,596 | \$2,603,570 |
| UAL Cost / (Savings) Rate (see Table 4-11) | 3.15% | 10.68% | 35.49% | 24.44% | 47.90% | 45.30% | 20.61% | 7.12% |
| Projected UAL Payroll PY 2015 - 2016 ¹ | \$21,614,100 | \$3,435,022 | \$3,329 | \$106,744 | \$7,012 | \$44,295 | \$517,489 | \$2,398,588 |
| Annual Payment / (Savings) for PY 2015 - 2016 | \$680,869 | \$366,886 | \$1,182 | \$26,090 | \$3,359 | \$20,066 | \$106,668 | \$170,863 |
| Amortization Period Calculated Assuming | | | | | | | | |
| Level Dollar | NA ² | NA ² | NA ² | NA ² | NA ² | NA ² | NA | NA ² |
| Level Percent of Payroll | 26 | 24 | 21 | 24 | 24 | 24 | 23 | 24 ² |

¹ The UAL payroll includes salaries for defined contribution program members who pay only the UAL contribution rate.

² Current annual payment / (savings) will never accumulate to the UAL if the earned interest rate is 7.65%.

Table D-3
Florida Retirement System
Projected Annual Payments of UAL Amortization Bases¹
July 1, 2014

Projected PY 2015-2016 and Forward Based on 07/01/2014 Valuation Results and 07/01/2014 Assets

(All Amounts in Millions)

| | <u>2015 - 16</u> | <u>2016 - 17</u> | <u>2017 - 18</u> |
|--|------------------|------------------|------------------|
| 1 Estimated Surplus Available Rate Stabilization Mechanism ² | \$0.0 | \$0.0 | \$0.0 |
| 2 (Increase)/Decrease in Available Surplus from prior year | \$0.0 | \$0.0 | \$0.0 |
| UAL Bases | | | |
| 3 12% Increase in Special Risk benefits (in pay status before 07/01/2000) ³ | \$27.9 | \$28.8 | \$29.8 |
| 4 Special Risk Minimum In-Line-of-Duty Disability Increased to 65% ⁴ | (\$0.2) | (\$0.2) | (\$0.2) |
| 5 1993 - 1998 Experience Study Assumption Changes ⁵ | (\$35.3) | (\$36.4) | (\$37.6) |
| 6 1998 - 2003 Experience Study Assumption Changes ⁵ | (\$263.4) | (\$271.9) | (\$280.8) |
| 7 2003 - 2008 Experience Study Assumption Changes | \$447.8 | \$462.3 | \$477.3 |
| 8 2009 Experience (Gain)/Loss | \$1,405.1 | \$1,450.8 | \$1,497.9 |
| 9 Unrecognized (Gains)/Losses while in Surplus | (\$411.0) | (\$424.4) | (\$438.2) |
| 10 2009 Plan Change (House Bill 479) | (\$85.0) | (\$87.7) | (\$90.6) |
| 11 2010 Experience (Gain)/Loss | \$74.2 | \$76.6 | \$79.1 |
| 12 2010 Plan Change (Senate Bill 2100) | (\$81.3) | (\$83.9) | (\$86.7) |
| 13 2011 Experience (Gain)/Loss | \$176.3 | \$182.0 | \$187.9 |
| 14 2012 Experience (Gain)/Loss | (\$6.9) | (\$7.1) | (\$7.4) |
| 15 2013 Experience (Gain)/Loss | \$170.3 | \$175.8 | \$181.6 |
| 16 2008 - 2013 Experience Study Assumption/Method Changes | \$119.5 | \$123.4 | \$127.4 |
| 17 2014 Experience (Gain)/Loss | (\$162.1) | (\$167.4) | (\$172.8) |
| Subtotal [(3) through (17)] | \$1,375.9 | \$1,420.7 | \$1,466.7 |
| 18 Across the Board Rate Reduction of 0% ⁶ | \$0.0 | \$0.0 | \$0.0 |
| Total [Subtotal + (18)] | \$1,375.9 | \$1,420.7 | \$1,466.7 |
| 19 UAL payment / (Surplus Available) [(1) + Total] = | \$1,375.9 | \$1,420.7 | \$1,466.7 |

¹ Numbers exclude contributions to the Investment Plan.

² Projected surplus based on 07/01/2014 valuation results. Using amortization method that reflects interest.

³ In the absence of a surplus there is an additional cost to the Special Risk Class of 0.81% attributable to the 12% increase in pre-2000 retired benefits.

⁴ In the absence of a surplus there is an additional cost to the Special Risk Administrative Class of 0.13% and an additional cost to the Special Risk Class of -0.01% attributable to the Increase in Minimum ILOD Disability Benefit.

⁵ In the absence of a surplus there is an additional charge or credit to each class. See Tables 4-2 through 4-10 for details.

⁶ No surplus available for rate reduction.

Appendix E: Comparisons/Reconciliation

This Appendix contains certain comparative information required by the state. The table below compares actual investment return, aggregate payroll growth, and individual salary increases with the actuarial assumptions.

The next table reconciles the flow of participants from the 2013 actuarial valuation to the 2014 actuarial valuation, while the last table cross-references the required sections of 112.64 with this report.

**Table E-1
One-Year Comparisons**

| 1. Annual Rate of Investment Return on Actuarial Value of Assets | | | |
|--|---------------|--------|---------|
| | Period Ending | Actual | Assumed |
| | June 30, 2012 | 6.74% | 7.75% |
| | June 30, 2013 | 8.02% | 7.75% |
| | June 30, 2014 | 9.95% | 7.75% |

| 2. Annual Rate of Payroll Growth | | | |
|----------------------------------|---------------|---------------------|----------------------|
| | Period Ending | Actual ¹ | Assumed ¹ |
| | June 30, 2012 | -1.18% | 4.00% ² |
| | June 30, 2013 | 0.03% | 4.00% ² |
| | June 30, 2014 | 0.78% | 4.00% ² |

| 3. Individual Rates of Salary Increases for Regular Members and Special Risk Members | | | |
|--|------------------------------|--------------|----------------------|
| Year Ended | Rate of Increase During Year | | |
| | Regular Members | Special Risk | Assumed ² |
| June 30 | | | |
| 2012 | 0.7% | 1.4% | 5.85% |
| 2013 | 3.2% | 3.7% | 5.85% |
| 2014 | 5.7% | 5.2% | 5.85% |

¹ The payroll base compared is used for UAL cost calculations and includes payroll for DROP members and certain defined contribution plan participants for whom only UAL contributions are due.

² Individual rates vary by age and service.

Table E-2
Florida Retirement System Defined Benefit Program
Data Reconciliation

| | Active Participants | Disabled Participants | Retired Participants and Beneficiaries | DROP | Total |
|--|------------------------|--------------------------|---|----------|----------------------|
| Number reported as of July 1, 2013 | 513,823 | 13,774 | 331,415 | 42,168 | 901,180 |
| New Entrants ¹ | 53,697 | 0 | 0 | 0 | 53,697 |
| Exits from Active Status ² or DROP | (48,653) | 425 | 17,578 | (12,171) | (42,821) |
| DROP Entry | (7,116) | 0 | 0 | 7,116 | 0 |
| Cessation of benefit payments | NA | (605) | (10,542) | 0 | (11,147) |
| Other reported status changes, including changes from Terminated Vested status | 0 | 265 | 7,922 | 942 | 9,129 |
| Number reported as of July 1, 2014 | 511,751 | 13,859 | 346,373 | 38,055 | 910,038 ³ |

¹ Includes rehires

² Includes retirement, vested termination, IP transfer, non-vested termination and death

³ The total count excludes 106,750 Terminated Vested participants

Table E-3
Florida Retirement System
Cross Reference to Section 112.64 Reporting Requirements

| Code Ref | 1 General Information: | Page/Section |
|-----------------|--|------------------------|
| 1.003 (3g) | Includes certification by the enrolled actuary (signed and dated)? | Cover Letter |
| 1.003 (11) | Do procedures follow commonly accepted procedures and determinations? | Cover Letter |
| 1.003 (4g) | Disclosure of events not taken into account by actuary? | Cover Letter |
| 1.003 (4g) | Disclosure of trends not assumed to continue (by actuary)? | Executive Summary |
| | 2 Assumptions: | Page/Section |
| 1.003 (3e) | Description and explanation of all actuarial assumptions? | Appendix A |
| 1.003 (3f) | Is there a comparison of actual to expected salary increases over the preceding 3-year period? | E-1 |
| 1.003 (3f) | Is there a comparison of actual to expected investment returns over the preceding 3-year period? | E-1 |
| 1.003 (6) | Do assumptions factor in actual experience? | Appendix A |
| 1.003 (6) | Is impact of inflation considered? | A-3 |
| 1.003 (6) | Any consistent experience gains or losses to suggest assumption changes? | No |
| 1.003 (7) | Listing of changed assumptions? | A-18 |
| | 3 Plan Provisions & Funding Method: | Section |
| 1.003 (4c) | Contain a summary of plan provisions? | Appendix B |
| 1.003 (4d) | Contain a detailed summary of funding method? | Appendix A |
| 1.003 (5) | Does funding method provide a contribution sufficient to meet the NC and amortize the UAL? | Section 4 |
| | 4 Assets & Method: | Exhibit |
| 1.003 (3a) | Is the MVA breakdown included (by cash, bonds, stocks, and other)? | 2-3 |
| 1.003 (3a) | Is the "statement value" breakdown included? | No |
| 1.003 (3a) | Is the derivation of AVA included? | 2-4 |
| 1.003 (8) | Are administrative expenses being paid on a current basis? | 2-1, 2-2 |
| | Asset reconciliation, including: | Exhibit |
| 1.003 (4j) | - contributions by source | 2-1, 2-2 |
| 1.003 (4j) | - interest and dividends | 2-1, 2-2 |
| 1.003 (4j) | - realized gains / (losses) | 2-1, 2-2 |
| 1.003 (4j) | - unrealized appreciation | 2-1, 2-2 |
| 1.003 (4j) | - pension payments | 2-1, 2-2 |
| 1.003 (4j) | - contribution refunds | 2-1, 2-2 |
| 1.003 (4j) | - expenses | 2-1, 2-2 |
| 1.003 (4j) | - other receipts (identified) | 2-1, 2-2 (transfer) |
| 1.003 (4j) | - other disbursements (identified) | 2-1, 2-2 (IP) |

| | Exhibit |
|---|------------------------------------|
| 5 UAL & Amortization Schedule: | |
| 1.003 (3b) Include a plan to amortize any UAL? | 4-2 & D-3 |
| Does amortization schedule of UAL exist (as of the valuation date) ... | Page |
| 1.003 (3c) - on an annual basis for the next 3-years? | Exhibit D-3 |
| 1.003 (3c) - for the final year? | No |
| 1.003 (3c) Is a statement as to how method was derived included? | A-2 |
| 1.003 (3d) Is a description of actions taken to reduce the UAL included? | Section 4, Executive Summary |
| Reconciliation of UAL (must include items below): | Exhibit |
| 1.003 (4h) - UAL for prior valuation (w/ start date) | Page 6 |
| 1.003 (4h) - Normal Cost, contributions, & accrued interest | Page 6 |
| 1.003 (4h) - Impact of changes (assumption, funding method, amendments, gain/loss) | 4-2—4-10 |
| 1.003 (4h) - UAL for current valuation | 4-2—4-10 |
| 6 Results: | Exhibit |
| 1.003 (4a) Valuation Date clearly indicated? | Page 1 |
| 1.003 (4e) Are results separated by employee group? | 3-2 and Sections 4 & 5 |
| 1.003 (4f) Is there disclosure of any benefit and expense provided by and/or paid from plan assets for which no liabilities or current costs have been established? | Cover Letter |
| 1.003 (4i) Projection of emerging liabilities/cash flow needs for next 10-15 years (optional) | No |
| 1.003 (4l) Summary of principal results (for current and prior valuation) including: | |
| - participant data (counts, total pay, total annual benefits by group) | Appendix C |
| - assets (market and actuarial) | 2-2, 2-4 |
| - PVB (split: active by decrement, tv, ret & ben, dis, and total) | 3-2 |
| - PV of future benefit payments | 3-2 |
| - AL and UAL, i.e., including amount, date, amortization period | 3-2, 4-2 |
| - PVVB (by group), non-vested PVAB, Total PVAB | 5-1, 5-2 |
| 1.003 (4l) Reconciliation of PVAB, including: | |
| - PVAB at beginning of year | 5-3 |
| - changes due to amendment and/or assumptions | 5-3 |
| - change due to decrease in discount period and benefits accrued | 5-3 |
| - Benefits paid | 5-3 |
| - Other changes | 5-3 |
| - Net increase (decrease) | 5-3 |
| - PVAB at end of year | 5-3 |
| 1.003 (4l) Pension Cost | |
| - Normal cost (shown for each benefit and amount for admin expense) | 4-1 |
| - Payment to amortize UAL | 4-2—4-10 |
| - Expected plan sponsor contribution (i.e. total of above pieces with interest, also as % of pay) | 4-11 |
| - Amount to be contributed by members (total and % of pay) | Pages B-3—B-4 |
| 1.003 (4l) Past Contributions | |
| - Required plan sponsor & member contribution | 4-12 and 5-4 |
| - Actual contributions made by: plan sponsor, members, other | 4-12 and 5-4 |
| 1.003 (4k) Active member accumulated contributions with interest | 5-2 |
| 1.003 (4l) Net actuarial gain / loss | 4-2—4-10 |
| 1.003 (4l) Other (PVFS & PVFC at attained age and at entry age, PVFC from other sources, PVF Expected BP) | 3-2 |

| 7 Data: | | Exhibit |
|-----------------------------|--|---|
| 1.003 (4i) | Are membership demographics and financial statistics included? | Appendix C |
| 1.003 (4i) | Age/service table for actives included? | C-7—C-17 |
| 1.003 (4i) | Data reconciliation? | E-2 |
| 8 Contribution Rate: | | Page |
| 1.003 (4a) | Applicable beginning and ending dates for recommended contribution indicated? | 4 |
| 1.003 (4b) | Are ER and EE contribution rates adequate to meet benefits? | 4 |
| 1.003 (4b) | Are contribution rate changes necessary to achieve or preserve funding? | Yes, Executive Summary and Exhibit 4-11 |
| 1.003 (7) | Is the impact of assumption or cost method changes indicated? | 7, Exhibit 3-1 |
| 1.003 (9) | Were costs to be paid at a later date adjusted for interest and/or salary? | Yes 3—4 |
| 1.003 (10) | Is the effective date of recommended changes no later than the next fiscal year? | Yes 3—4 |

Appendix F: Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the FRS.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Accumulated Benefit Obligation (ABO)

The actuarial present value of benefits attributed by the pension benefit formula to employee service rendered before a specified date and based on employee service and compensation prior to that date.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Actuarial Gain/Loss

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation Dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Liability (AL)

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Present Value of Pension Plan Benefits

Total projected benefits include all benefits estimated to be payable to plan members as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarial Value of Assets (AVA)

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Amortization

Paying an interest-bearing liability by gradual reduction through a series of installments, as opposed to one lump-sum payment.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Liability.

Level Percent of Pay: Produces a level series of payments when expressed as a percent of payroll. Cash payment increases in line with payroll growth assumption.

Level Dollar: Produces a decreasing pattern of payments when expressed as a percent of payroll. Cash payment remains level.

Annual Pension Cost (APC)

Under GASB, when the Net Pension Obligation is positive, the APC is equal to the Annual Required Contribution plus the Interest on the beginning Net Pension Obligation minus the amortization of the Net Pension Obligation. When the Net Pension Obligation is negative, the APC is equal to the Annual Required Contribution minus the Interest on the beginning Net Pension Obligation plus the amortization of the Net Pension Obligation.

Annual Required Contribution (ARC)

Under GASB, this amount is equal to the Normal Cost plus the Amortization Payment. GASB does not require contributions to be equal to the ARC; however it requires the calculation and reporting of the ARC.

Entry Age Normal Actuarial Cost Method (EAN)

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Liability.

Funded Ratio

Ratio of the assets of a pension plan to its liabilities.

Government Accounting Standards Board (GASB)

This Board sets standards of state and local accounting and financial reporting.

Interest Rate

The rate used to discount projected benefit payments to determine the present value in a valuation.

Market Value of Assets (MVA)

The price for which an asset could be sold at a particular date. May also be referred to as the Fair Value of Assets.

Normal Cost (NC)

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Net Pension Obligation (NPO)

Under GASB, the cumulative difference between Annual Pension Cost and the employer's contributions to the plan, including the pension liability or asset at transition, if any.

Present Value (PV)/ Actuarial Present Value (APV)

The value of an amount or series of amounts or cash flows payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions, including selected interest rate.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and anticipated future compensation and service credits.

Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets. When the Actuarial Value of Assets exceeds Actuarial Liabilities a surplus exists.

Valuation Date

The date as of which the liabilities are determined.