

Florida Retirement System Actuarial Assumption Estimating Conference

Executive Summary for October 2015 Meetings

The Florida Retirement System Actuarial Assumption Conference met on October 6th and October 15th to adopt updated 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 increase from last year's \$21.5 billion to \$23.0 billion. In 2014, the system was 86.6% funded on an actuarial basis; however, the funded status is expected to decrease to 86.2% in the 2015 updated valuation.

Asset performance has been generally favorable over the past five fiscal years. Returns far exceeded the 7.75% investment rate assumption in Fiscal Years 2010-11, 2012-13, and 2013-14. However, the investment return was much lower than expected in Fiscal Years 2011-12 and 2014-15. The tables below show actual investment returns for the past five fiscal years and as well as actual returns for 5-year, 10-year and 15-year timeframes.

Fiscal Year	Investment Return
2010-11	22.09%
2011-12	0.29%
2012-13	13.12%
2013-14	17.40%
2014-15	3.67%

	Investment Return
5-year	11.01%
10-year	6.86%
15-year	5.33%

The Conference reviewed quarterly national market data which showed a consistent downward trend in long-term interest rates in recent years. The state's actuary and the State Board of Administration's financial consultant both recommended a reduction in the investment return assumption. The Conference decided to keep the nominal investment rate and the inflation rate the same as the 2014 assumptions, which also resulted in an unchanged real rate of return. The table below displays the nominal returns, inflation rates, and real returns that are used in the 2013, 2014, and 2015 evaluations.

2013	2014	2015
7.75% Investment Return	7.65% Investment Return	7.65% Investment Return
3.00% Inflation	2.60% Inflation	2.60% Inflation
4.61% Real Return	4.92% Real Return	4.92% Real Return

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

The 2015 Legislature fully funded the UAL at the recommended contribution rate as provided in the 2014 valuation report. This action and continued full funding of the recommended UAL rate, as committed to by the Legislature, is expected to 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. For example, investment returns have been and will continue to be a relatively volatile factor included in the calculations, and if actual investment results are lower than assumed, there could be a significant impact on the UAL and future contribution rates.

The following table displays summary results from the 2014 Final Valuation and the 2015 Baseline Valuation.

	2014 Final	2015 Baseline
Actuarial Liability (AL)	\$160.1	\$166.3
Actuarial Value of Assets (AVA)	<u>\$138.6</u>	<u>\$143.3</u>
Unfunded Actuarial Liability (UAL)	\$21.5	\$23.0
Funded Status (FS)	86.6%	86.2%
Normal Cost Rate (NCR)	4.10%	4.15%
Unfunded Actuarial Liability Rate (UALR)	<u>4.89%</u>	<u>5.22%</u>
NCR + UALR	8.99%	9.37%

Note: dollars are in billions.

The preliminary report addresses information received through July 1, 2015. The final report will be based on these assumptions and released in December 2015.

Florida Retirement System

2015 FRS Actuarial Assumptions Conference

Including Preliminary July 1, 2015 Actuarial Valuation Results

Presented by:

Matt Larrabee, FSA

Principal & Consulting Actuary

Daniel Wade, FSA

Principal & Consulting Actuary

October 6, 2015



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Agenda

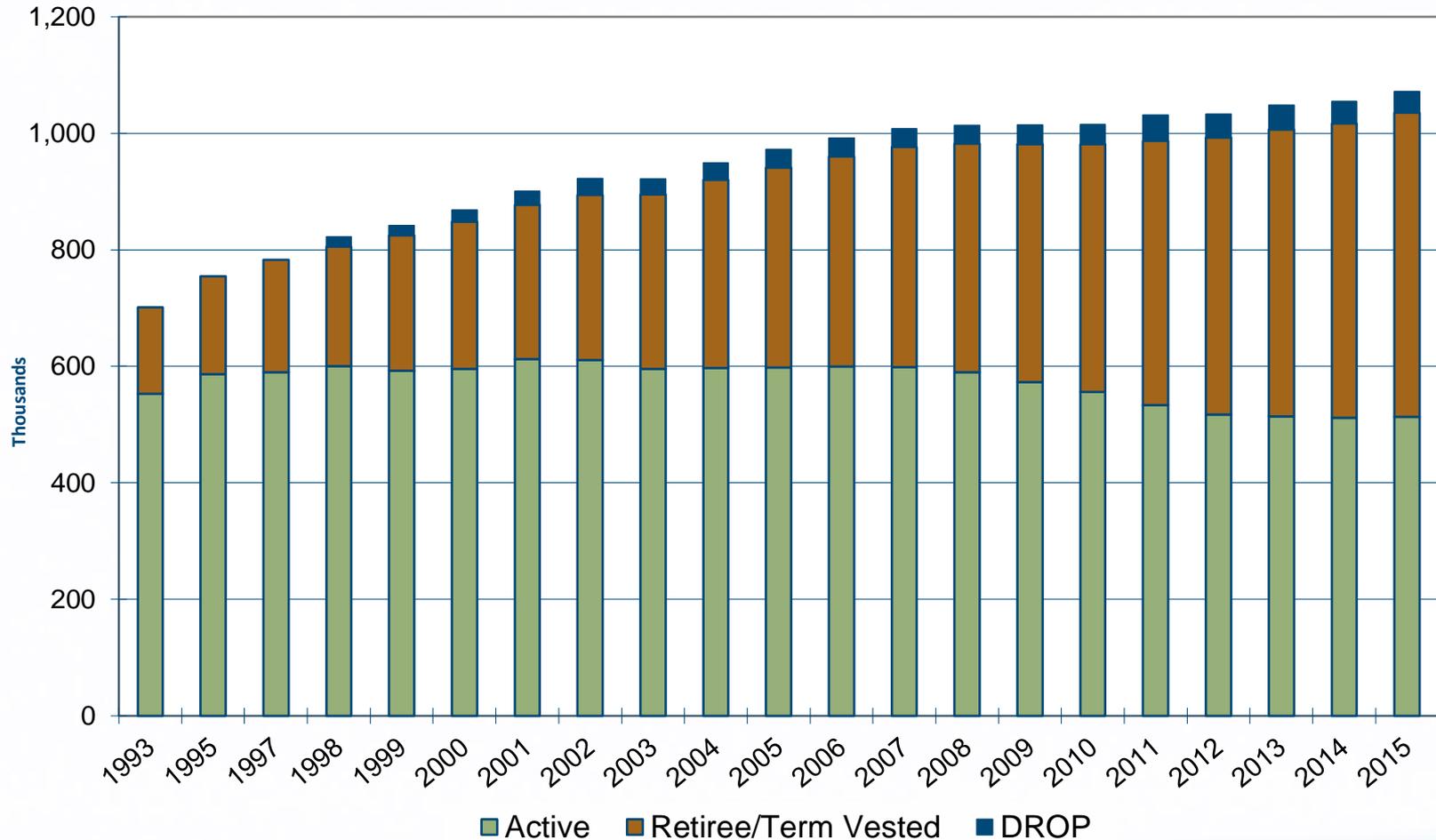
- Preliminary results of our July 1, 2015 actuarial valuation, based on assumptions and methods approved at the 2014 FRS Assumptions Conference to assist policymakers in:
 - Estimating contribution rates for July 2016 – June 2017
 - Assessing July 1, 2015 funded status for the FRS pension plan
- Discussion of alternative investment return assumptions

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Census Demographics and Assets

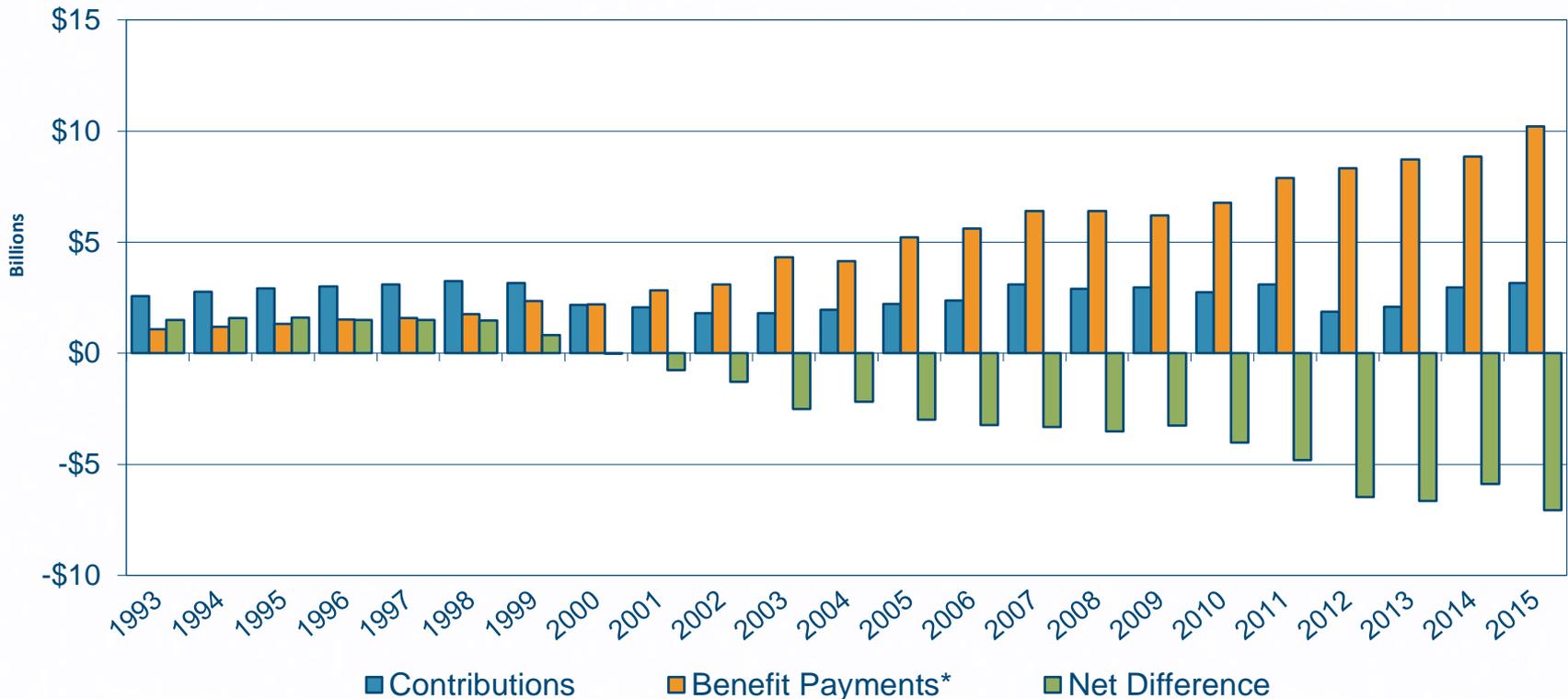
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Pension Plan Membership



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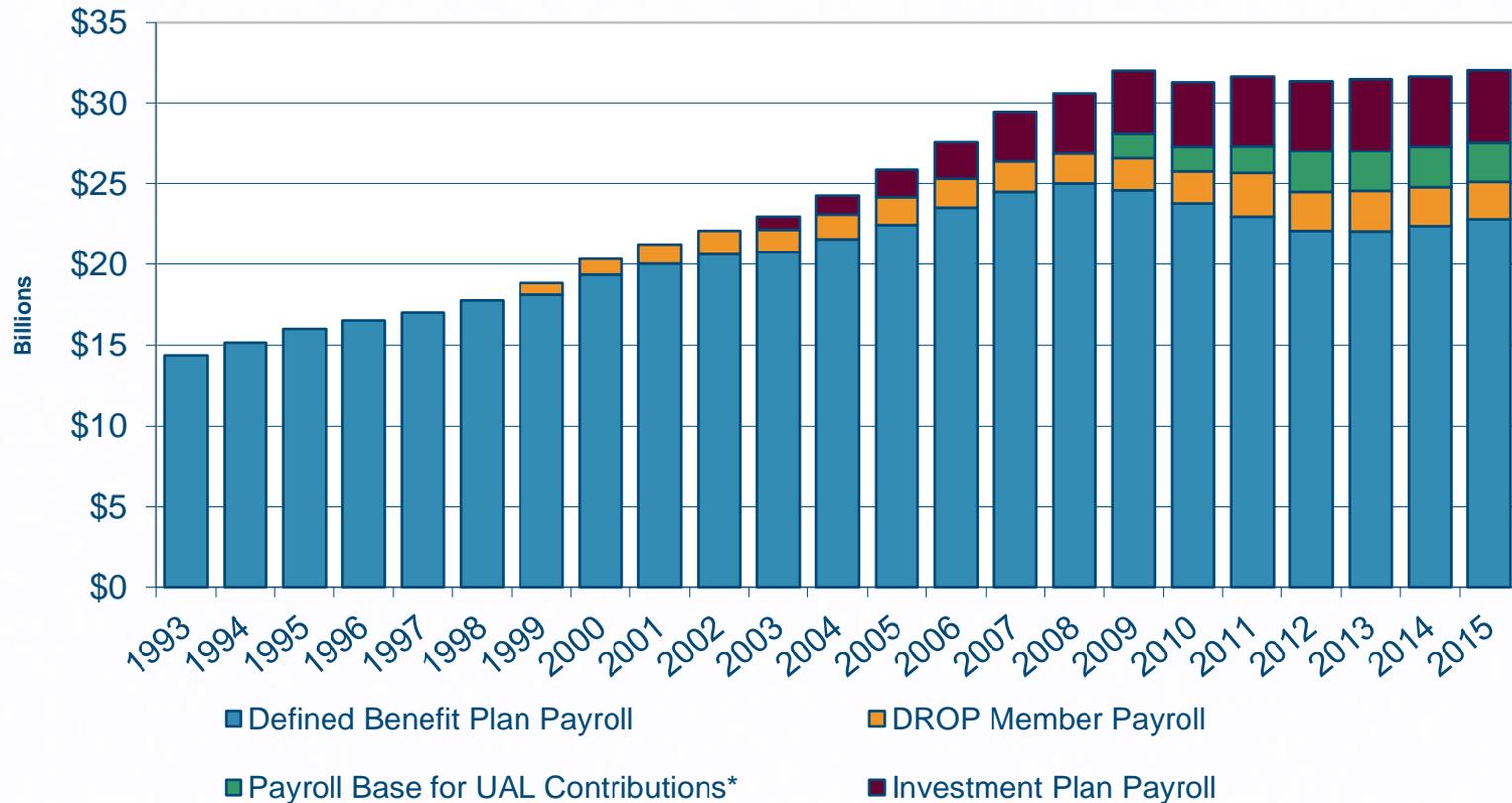
Contributions and Benefit Payments



* Includes transfers to Investment Plan

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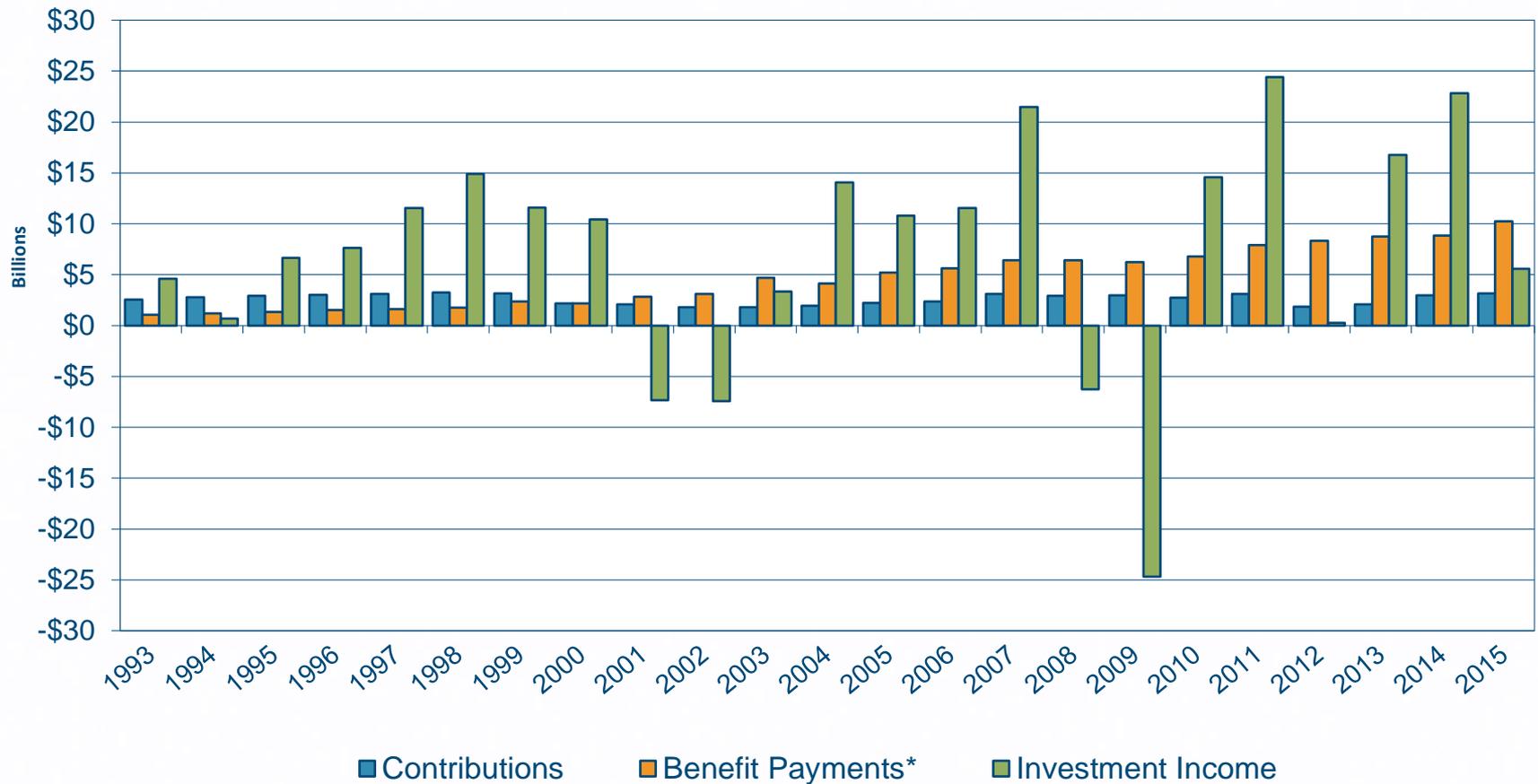
Payroll: FRS + Non-FRS UAL Contributory



**Includes payroll for participants in certain non-FRS defined contribution plans upon which UAL rate contributions to the FRS pension plan are made.*

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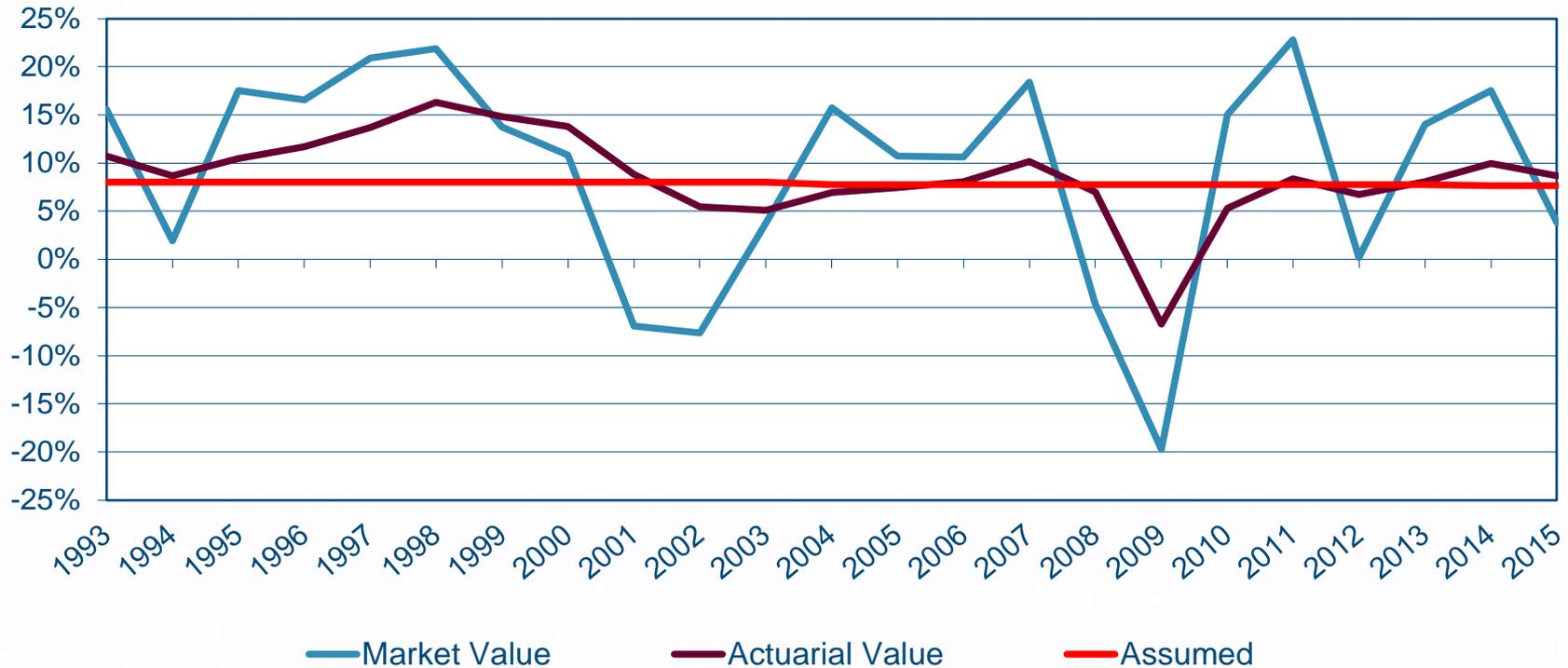
Pension Plan Cash Flows



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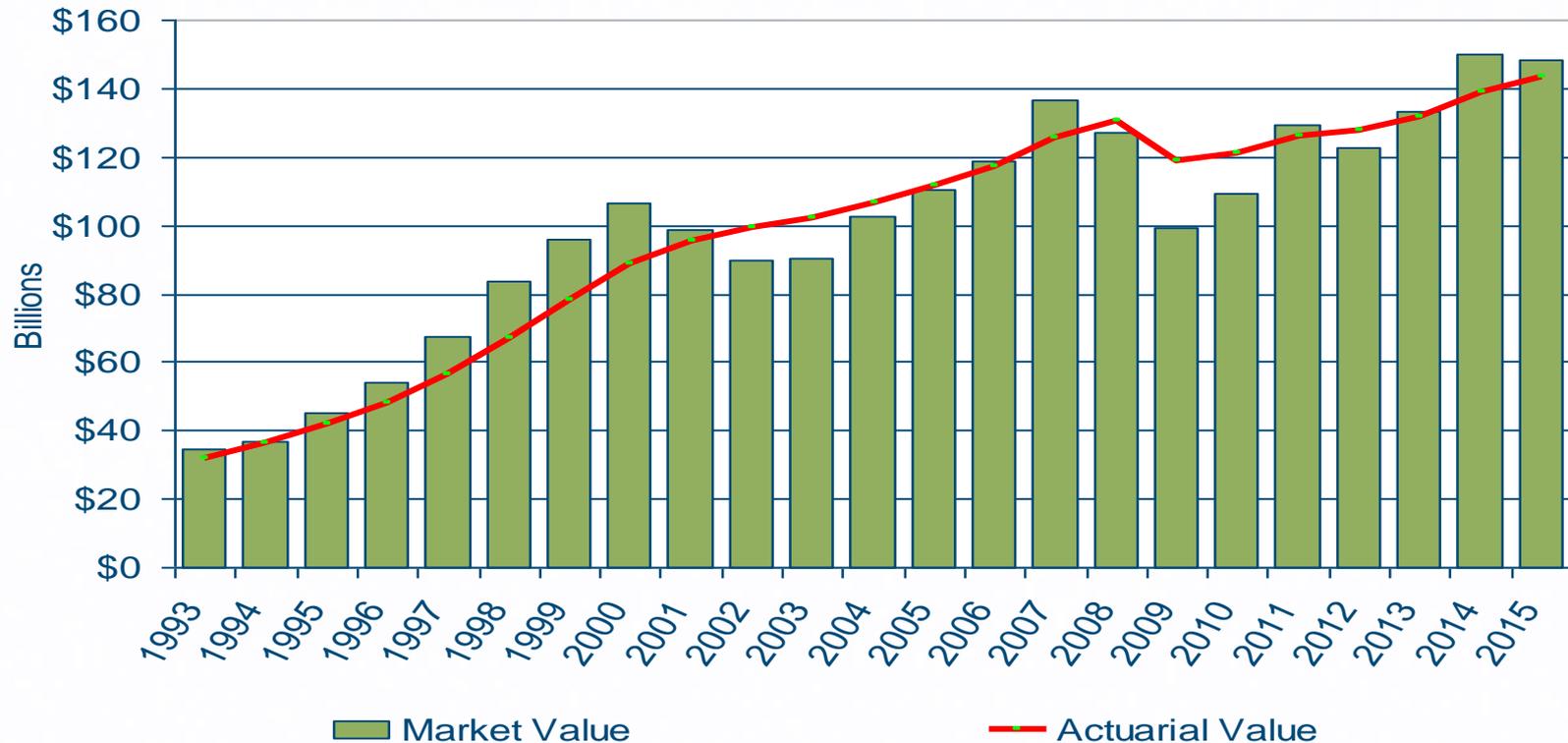
Historic Asset Returns



2014-15 returns were +3.8% on a market value basis and +8.7% on a smoothed actuarial value basis, reflecting average market returns over the past five years

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Market & Actuarial Value of Assets



Market Value of Assets exceeds Actuarial Value of Assets by \$5.2 billion at July 2015, providing a cushion for 2016 funded status and 2017-18 actuarially calculated rates in the event of potential 2015-16 investment underperformance.

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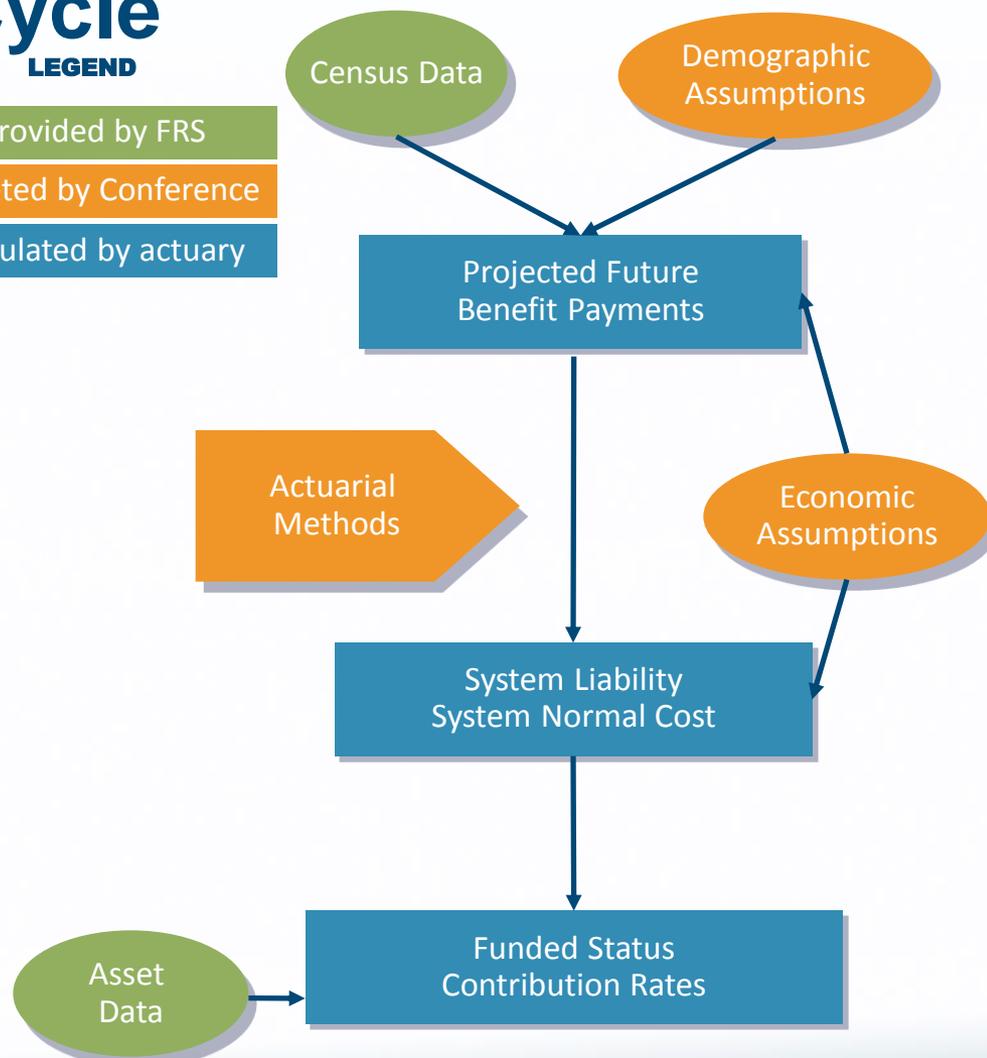
Valuation Process and Projected Benefit Payments

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Actuarial Valuation Cycle

LEGEND

- Today: Discuss preliminary 2015 valuation results, select final assumptions and methods for 2015 actuarial valuation
- By December 1: Complete 2015 actuarial valuation report, including actuarially calculated contribution rates
- Demographic and certain economic assumptions determine projected future benefit payments
- Methods and other economic assumptions affect calculations of funded status and contribution rates



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Overview of an Actuarial Valuation

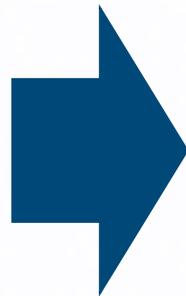
- A pension plan valuation is conducted annually to:
 - Calculate funded status
 - Develop actuarially calculated contribution rates
 - Assist FRS and employers with GASB financial reporting

Data

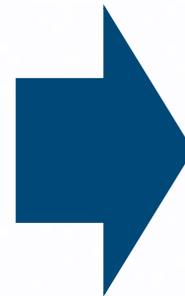
Assumptions

Methods

Provisions



**Projected
Benefit
Payments**



**Funded
Status**

**Actuarially
Calculated
Contribution
Rates**

Status

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Projected Benefit Payments

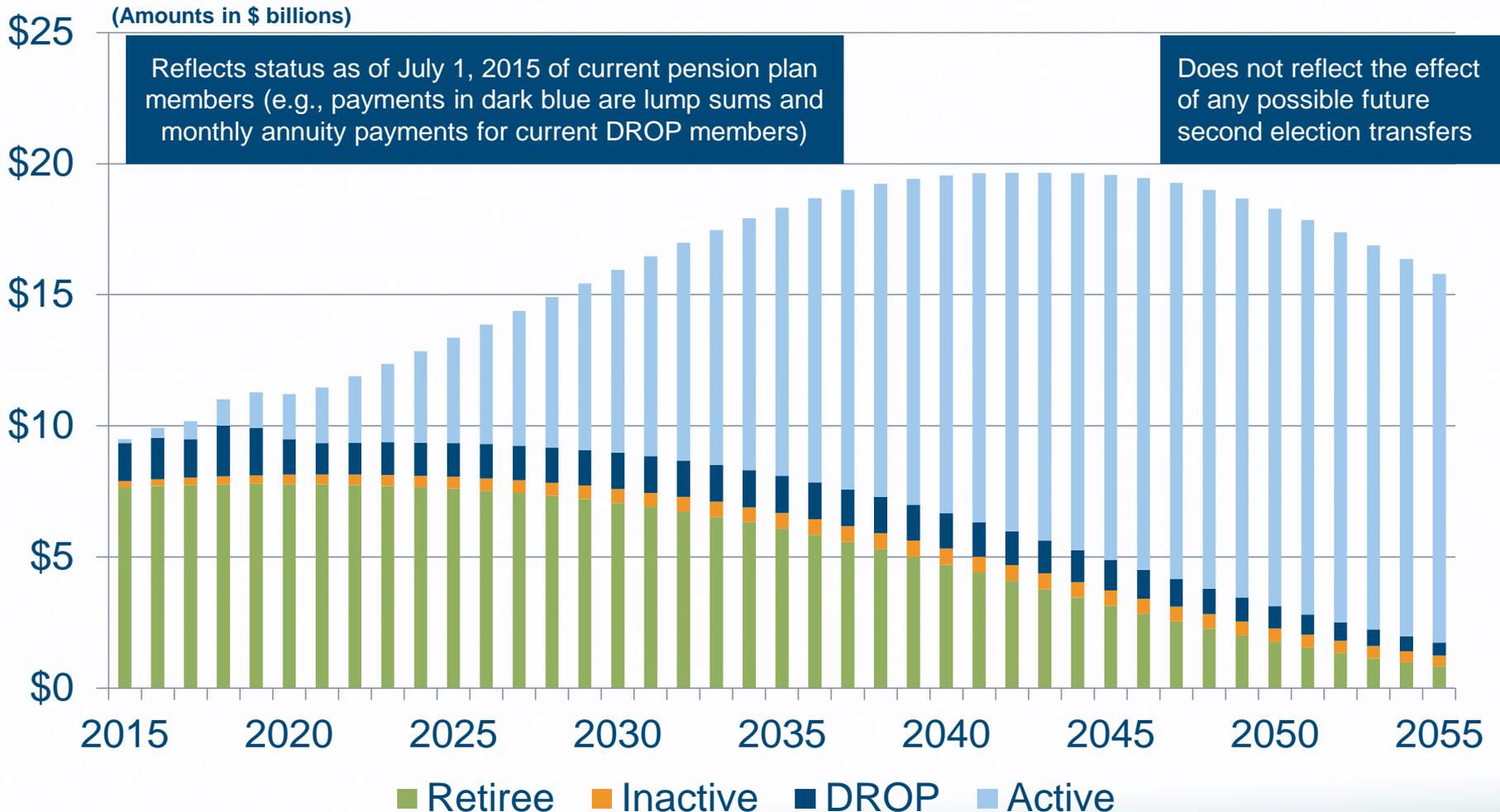
- Projected benefit payments are developed using:
 - Census data provided by Division of Retirement
 - Demographic assumptions
 - Mortality
 - Timing of retirement / entry into DROP
 - Likelihood of termination of employment prior to unreduced benefit
 - Incidence of disability
 - Annual salary increase assumption for individual members

Census data is provided annually

Assumptions listed above are typically set every five years as part of the actuarial experience study

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Projected Benefit Payments – 2015 Valuation



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Preliminary Baseline 2015 Valuation Results

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Preliminary Baseline 2015 Valuation Results

- The projected year-by-year benefit payments are converted into a present value using the investment return assumption
 - The present value is allocated between past (Actuarial Liability) and projected future service (Normal Cost) via the cost allocation method
- This establishes Baseline 2015 valuation results using
 - Methods and assumptions from the 2014 valuation as endorsed by the 2014 FRS Actuarial Assumptions Conference, based on the 2014 Experience Study
 - Demographic member census data as of July 2015
 - Actual 2014-15 investment returns

2015 Baseline shows funded status and contribution rates on current data, prior to any potential updates to assumptions or methods

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Results Template - Actuarial Terms of Art

To summarize results, we use a template with a number of key actuarial terms

AL: Actuarial Liability

AVA: Actuarial Value of Assets

UAL: Unfunded Actuarial Liability

FS: Funded Status

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

UALR: Unfunded Actuarial Liability (UAL) Rate

NCR+UALR: A proxy, albeit an imperfect one, for the employer pension plan contribution rate prior to blending with Investment Plan rates to create proposed statutory rates

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Composite Pension Plan-Specific	2014 Final (2014 data; 2014 assumptions)	Baseline 2015 (2015 data; 2014 assumptions)
AL	\$ 160.1	\$ 166.3
AVA	<u>\$ 138.6</u>	<u>\$ 143.3</u>
UAL	\$ 21.5	\$ 23.0
FS	86.6%	86.2%
NCR	4.10%	4.15%
UALR	<u>4.89%</u>	<u>5.22%</u>
NCR + UALR	8.99%	9.37%

(Amounts in \$ billions)

Results shown are liabilities and rates calculated for funding purposes; results for GASB financial reporting differ

Results shown use the 3.25% system payroll growth and 2.60% inflation assumptions used in the 2014 valuation

Composite pension plan-specific rates are shown, prior to blending with Investment Plan rates to create composite proposed statutory rates

Market Value of Assets (MVA) exceeds AVA by \$5.2 billion at July 2015, providing a cushion for 2016 funded status and 2017-18 contribution rates in the event of possible 2015-16 investment underperformance

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Year-to-Year Change in Normal Cost Rate

- The pension plan-only normal cost rate on the prior slide increased from 4.10% to 4.15% of payroll between valuations
- This increase of the weighted average normal cost rate was driven by a change in the portion of non-DROP active payroll for the two largest membership classes (Regular, Special Risk)
 - Special Risk percentage of total pension plan payroll increased by 0.3%
 - Regular percentage of total pension plan payroll decreased by 0.3%
- The above effect of a proportional increase in a more costly membership class, combined with a very slight increase in life expectancy due to the generational structure of the mortality assumption, drove the observed rate increase

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Year-to-Year Change in UAL Rates

- The composite pension plan-only UAL rate increased from 4.89% to 5.22% of payroll between valuations
- UAL rate is a long-term amortization calculation designed to remain steady if the following two conditions are met in a year
 - Contributions are made in accordance with actuarially calculated rates
 - Experience follows assumptions, including:
 - Returns on Actuarial Value of Assets
 - System payroll growth
 - Individual member salary increases
 - Individual member timing of retirement
 - Mortality for members and beneficiaries in benefit payment status

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Year-to-Year Change in UAL Rates

- Variations from key assumptions during the 2014-15 plan year causing the year-to-year 33 basis point (0.33% of payroll) increase in the pension-only UAL Rate were:
 - Actual demographic experience different than assumption, including:
 - Timing of retirement / entry into DROP
 - Mortality rates for current retirees and survivor beneficiaries
 - Actual system “UAL payroll” growth of 2.0%, compared to the 3.25% annual increase assumption
 - For any given UAL amortization payment, the lower the payroll the higher the UAL rate

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Blended Proposed Statutory Rates

Pension plan-only contribution rates are blended with Investment Plan contribution rates to create blended proposed statutory rates

	Fiscal Year 2015-16 <u>Legislated Rates</u>			Fiscal Year 2016-17 <u>Preliminary Rates</u>		
	NC	UAL	Total	NC	UAL	Total
PP composite employer rate	4.10%	4.89%	8.99%	4.15%	5.22%	9.37%
IP composite employer rate	<u>4.80%</u>	<u>0.00%</u>	<u>4.80%</u>	<u>4.76%</u>	<u>0.00%</u>	<u>4.76%</u>
Blended employer rate	4.22%	4.17%	8.39%	4.26%	4.43%	8.69%
Employee contribution rate			<u>3.00%</u>			<u>3.00%</u>
Composite blended employer + employee rate			11.39%			11.69%

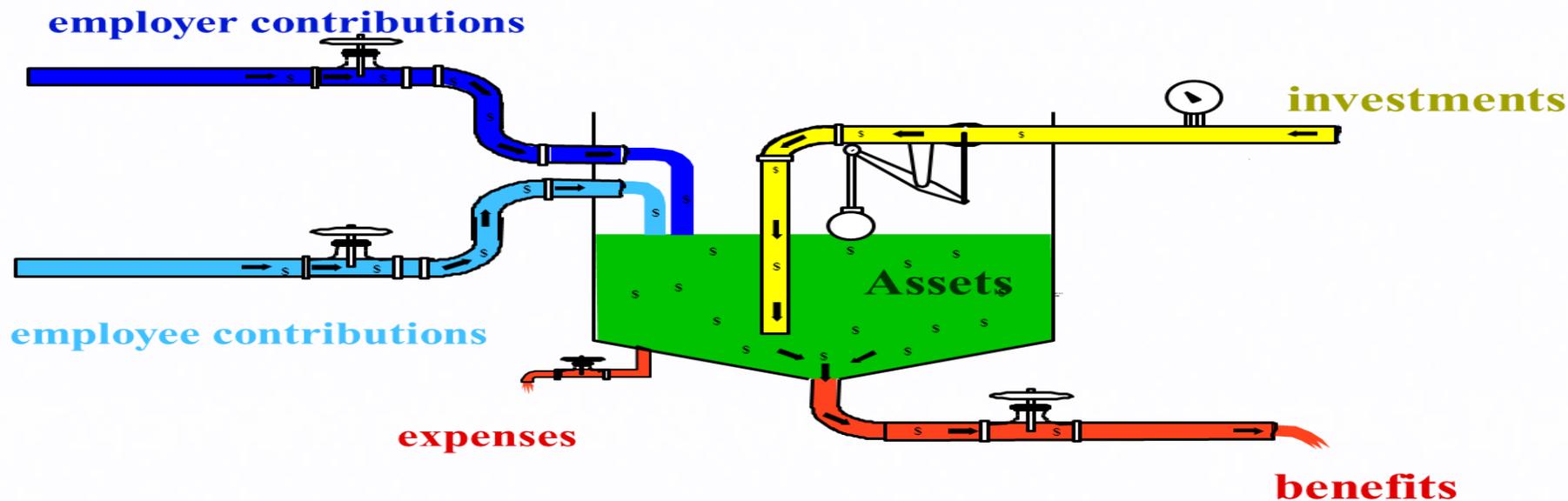
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Discussion of Alternative Investment Return Assumptions

Note: Today's Milliman speakers are not credentialed investment advisors

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Guidance in Setting Methods & Assumptions



- Methods & assumptions do not determine ultimate long-term System cost, only the budget timing of cost incurrence

Ultimately, the *Fundamental Cost Equation* always holds:

$$\text{Contributions} + \text{Investments} = \text{Benefits} + \text{Expenses}$$

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Commonly Used Guiding Objectives

- Protection of funded status
- Contribution rate stability
- Contribution rate predictability
- Intergenerational equity
- Transparency and understandability
- Actuarial soundness



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Setting the Investment Return Assumption

Given that actual future investment returns are not knowable in advance, how should the return assumption be set?

- Prudently select a best estimate
- Review return models from credentialed investment professionals
- Recognize that hoping for a result does not make it happen; the assumption selected does not affect actual investment returns
- Avoid myopia --- the objective is to make a prudent 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 a return model's probability range and consider a margin for variance

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Overview - Current Assumption and Models

- At the 2014 FRS Assumptions Conference, median average annual long-term future investment returns were presented using two investment return models:
 - HEK/SBA investment return model: 7.66% median return
 - Milliman investment return model: 6.9% median return
- After discussion of those models, the investment return assumption was lowered from 7.75% to 7.65%
- Since last year's conference, the updated HEK/SBA investment return model now indicates a median average annual long-term future investment return of 6.81%
 - The Milliman model has a median return that mirrors last year's Milliman model results and is similar to this year's HEK/SBA model

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HEK/SBA Investment Return Model

- The HEK/SBA model is developed on a real return (i.e., return in excess of inflation) basis
 - On that basis, and reflecting a 2.2% inflation assumption, nominal net returns in the model are 6.81% over 30 years
 - Outlook updates to both future inflation and domestic equity risk premium drove the 0.85% decrease in the model's median return
- Modeled likelihood of meeting or exceeding three illustrative nominal average annual return levels is shown below:

Nominal Return	15-Year Time Horizon	30-Year Time Horizon
7.65%	39%	35%
7.50%	41%	38%
6.80%	50%	50%

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Milliman Investment Return Model

- Based on the current target asset allocation, model results are geometric annual average net returns based on:

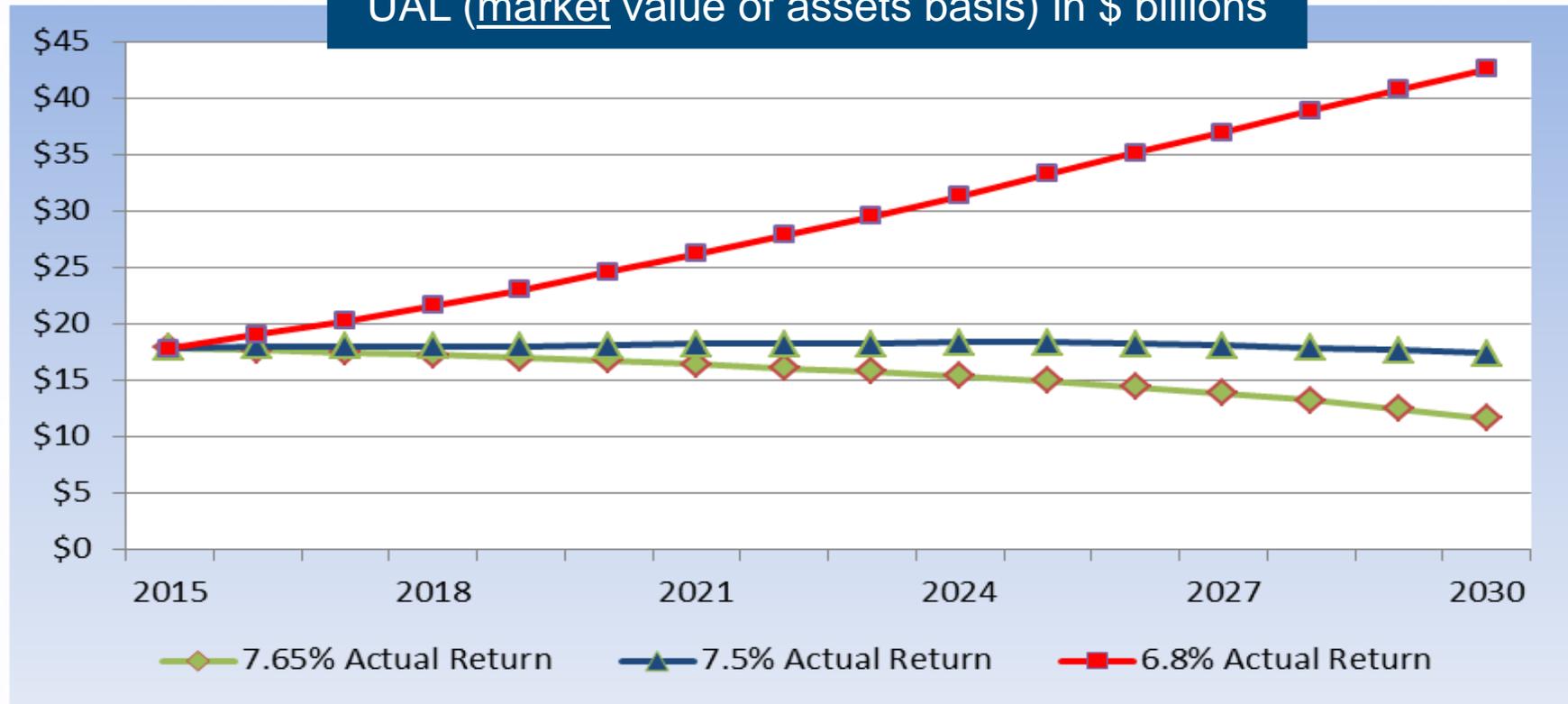
Percentile	30-Year Average
65 th	7.8%
60 th	7.5%
55 th	7.2%
50th	6.9%
45 th	6.7%
40 th	6.4%
35 th	6.1%

- A series of average annual real returns by asset class, plus asset class correlations
- The 2014 Conference's 2.6% inflation assumption
 - Milliman's current default assumption for the return model is 2.3%
- 0.25% deduction for plan expenses

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Effects of Not Lowering the Assumed Return

UAL (market value of assets basis) in \$ billions



- The assumption selected does not affect actual investment returns
- With no change to assumed return, this chart illustrates UAL changes for three possible scenarios for actual future investment return

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Effects of Lowering the Assumed Return

- A lower assumption produces higher calculated Actuarial Liability and Normal Cost, which in turn leads to 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 likelihood of 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:
 - Increase if investments underperform assumption
 - Decrease if investments outperform assumption

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<i>All figures shown based on 2.60% inflation, 3.25% system payroll growth assumptions</i>	Ultimate EAN	Ultimate EAN	Ultimate EAN	Ultimate EAN	Cost Method
	30 Years	30 Years	30 Years	30 Years	Amortization Period
	7.65% Inv. Return	7.65% Inv. Return	7.50% Inv. Return	6.80% Inv. Return	Investment Return
Composite Pension Plan-Specific	Final 2014	Baseline 2015 7.65%	2015 7.50%	2015 6.80%	<i>Composite rates shown are pension plan-specific, prior to blending with Investment Plan rates to create composite proposed statutory rates</i>
AL	\$ 160.1	\$ 166.3	\$169.4	\$184.9	
AVA	<u>\$ 138.6</u>	<u>\$ 143.3</u>	<u>\$143.3</u>	<u>\$143.3</u>	
UAL	\$ 21.5	\$ 23.0	\$26.1	\$41.6	
FS	86.6%	86.2%	84.6%	77.5%	
NCR	4.10%	4.15%	4.42%	5.82%	
UALR	<u>4.89%</u>	<u>5.22%</u>	<u>5.90%</u>	<u>9.37%</u>	
NCR + UALR	8.99%	9.37%	10.32%	15.19%	

(Amounts in \$ billions)

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Wrap-Up

- Preliminary 2015 Baseline valuation results using 2014 valuation assumptions indicate:
 - Funded status on a smoothed Actuarial Value of Assets basis decreased by 0.4%.
 - Composite pension plan-specific actuarially calculated contribution rates 0.38% of payroll higher
 - Composite proposed blended statutory rates 0.30% of payroll higher
- Current investment return models from both HEK/SBA and Milliman indicate median future returns well below 7.65%

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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 “2014-12 FRS Pension Plan IPS Effective 1-1-15.pdf” as provided to us by email on Sep. 18, 2015.

	Policy Allocation	Annual Arithmetic Mean	Annualized Geometric Mean	Annual Standard Deviation
Cash	1%	3.2%	3.1%	1.7%
Fixed Income	18%	4.8%	4.7%	4.7%
Global Equity	53%	8.5%	7.2%	17.7%
Real Estate	10%	6.8%	6.2%	12.0%
Private Equity	6%	11.9%	8.2%	30.0%
Strategic Investments	12%	6.7%	6.1%	11.4%
US Inflation* (CPI-U)			2.6%	1.9%
Fund Total (reflecting asset class correlations)	100%	7.6%	6.9%	12.1%

***US Inflation assumption adopted by the 2014 Actuarial Assumptions Conference.**

Returns reflect 0.25% reduction for System expenses.

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Contribution Rate Calculations

- Pension plan-specific contribution rates have two components:
 - Normal cost rate
 - Cost assigned to current year benefits by the allocation method
 - UAL rate
 - Rate calculated to eliminate UAL in a systematic manner over a specified time period if future experience follows assumptions
- To calculate the UAL rate, an additional assumption and an additional method are needed
 - For amortizations as a level percentage of projected payroll, the system's **general wage increase** assumption affects the rate
 - In addition, the length of the **amortization period** affects the rate

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Asset Measurement Method

- Contribution rates established annually based on the reported unfunded actuarial liability (UAL)
 - UAL compares Actuarial Liability against a system asset measure
- The asset measure used by FRS is specified by statute, and employs an “asset smoothing” technique
 - The mandated method annually recognizes 20% of investment return deviations from assumption
- The statutory calculation approach includes a “corridor” to ensure smoothed assets vary no more than 20% from fair market value

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Asset Smoothing

- Five-year smoothing method recognizes heavy losses gradually following times of unfavorable asset performance
- The smoothing is symmetrical, so that any large investment gains are also not “felt” all at once, but instead serve as a cushion against potential future unfavorable asset performance
- The objective of asset smoothing is to keep long-term contribution levels appropriately linked to actual investment performance, and to have year-to-year contribution rate changes be less volatile and more predictable

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Disclaimer

At your request, we have provided these draft results prior to completion of the July 1, 2015 Actuarial Valuation Report. Because these are draft results, Milliman does not make any representation or warranty regarding the contents of the presentation. Milliman advises any reader not to take any action in reliance on anything contained in this presentation. All results from this presentation are subject to revision or correction prior to the release of the final July 1, 2015 Actuarial Valuation Report, and such changes or corrections may be material.

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Certification

This presentation summarizes key preliminary results of an actuarial valuation of the Florida Retirement System (“FRS” or “the System”) as of July 1, 2015, which develops actuarially calculated contribution rates for the Plan Year ending June 30, 2017. The results are preliminary in nature and may not be relied upon to, for example, prepare the System’s Consolidated Annual Financial Report (CAFR). The reliance document will be the formal July 1, 2015 Actuarial Valuation Report.

In preparing this presentation, we relied, without audit, on information (some oral and some in writing) supplied by Division of Retirement (“Division”) staff. 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 valuation 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.

Preliminary results have been determined on the basis of actuarial assumptions and methods as adopted by the 2014 FRS Actuarial Assumptions Conference. At the time of their review and adoption, those assumptions were individually reasonable (taking into account the experience of the System and reasonable expectations); and, in combination, offered a reasonable estimate of anticipated future experience affecting the System.

Future actuarial measurements may differ significantly from the current measurements presented in this presentation due to such factors as the following: 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 or additional cost or contribution requirements based on the plan's funded status); 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. The FRS Actuarial Assumptions Conference has the final decision regarding the appropriateness of the assumptions.

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.

Certification

Computations presented in this report are for purposes of determining the actuarially calculated contribution rates for funding the System. Computations prepared for other purposes may differ. The calculations in the presentation have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in the appendix of our formal actuarial valuation report as of July 1, 2014. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this presentation. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the Florida Department of Management Services ("DMS"). 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. 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 exception(s):

(a) The System 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 System 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 presenting actuaries are independent of the plan sponsors. 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 presentation 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.

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.

Actuarial Basis

Data

We have based our calculations on demographic member census data as of July 1, 2015 as supplied by the Division of Retirement (“Division”). That data will be summarized in our formal actuarial valuation report for funding purposes as of July 1, 2015, which will be published in the 4th quarter of this year. Assets as of July 1, 2015, were based on values provided by the Division.

Methods / Policies

Actuarial Cost Method: Ultimate Entry Age Normal, using the interpretation of that method endorsed by the 2014 FRS Actuarial Assumptions Conference.

UAL Amortization: Newly arising UAL each plan year is amortized as a level percentage of projected payroll over a closed 30-year period.

Actuarial Value of Assets: A smoothed asset value specified by Florida statute that annually recognizes 20% of deviations in investment performance from the long-term assumption systematically over time. The statutory calculation approach includes a “corridor” to ensure smoothed assets vary no more than 20% from fair market value.

Assumptions

Assumptions for 2015 Baseline valuation calculations use assumptions adopted by the 2014 FRS Actuarial Assumptions Conference, and as detailed in the 2014 Experience Study and in the July 1, 2014 Actuarial Valuation Report for funding purposes.

Provisions

Provisions valued are as summarized in the July 1, 2014 Actuarial Valuation Report for funding purposes.

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Florida Retirement System Pension Plan

Actuarial Valuation as of July 1, 2015

Prepared by:

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Principal and Consulting Actuary

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December 1, 2015

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

Re: **Actuarial Valuation as of July 1, 2015**

Dear Mr. Drake:

We have conducted an annual actuarial valuation of the Florida Retirement System (FRS) Pension Plan as of July 1, 2015, for assessing plan funded status and determining actuarially calculated contribution rates for the July 2016 - June 2017 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. Preliminary 2015 valuation results using the actuarial assumptions and methods used in the previous valuation as of July 1, 2014 were presented by the actuary to the 2015 FRS Actuarial Assumptions Conference held in October 2015. The assumptions are based on Milliman's most recent review of the System's experience, which was for the period from 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. The assumptions used in this valuation are unchanged from those used in the prior valuation as of July 1, 2014 and in the preliminary 2015 valuation results which were presented to the 2015 FRS Actuarial Assumptions Conference.

We believe the assumptions and methods used in this report for purposes of developing actuarially calculated contribution rates are reasonable. The accounting calculations for the Pension Plan's financial reporting and June 30, 2015 CAFR in compliance with the GASB Statement No. 67 use some methods that differ from those used in this report. The GASB financial reporting 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



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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.

Actuarial computations presented in this report are for purposes of assessing funded status and determining the actuarially calculated contribution rates for the Pension Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Pension Plan's funding requirements and goals. 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:

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- (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,



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Principal and Consulting Actuary



Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary



Kathryn Hunter, ASA, MAAA
Consulting Actuary

ML/DW/KH/nlo

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1. Executive Summary

This report presents the results of our July 1, 2015 actuarial valuation of the defined benefit Florida Retirement System (FRS) Pension Plan. This valuation is used to determine actuarially calculated Pension Plan-specific employer contribution rates for the July 1, 2016 – June 30, 2017 plan year. The Pension-Plan specific rates developed in this valuation report are then combined with contribution rates from the defined contribution FRS Investment Plan to create blended proposed statutory employer contribution rates. The actual contribution rates paid by employers during the 2016-2017 plan year will be determined by Florida Statute. The statutory contribution rates in effect for the current 2015-2016 plan year are identical to the blended proposed statutory rates developed in conjunction with the July 1, 2014 actuarial valuation.

On the smoothed Actuarial Value of Assets basis used to determine actuarially calculated contribution rates, Pension Plan funded status decreased slightly from 86.6% to 86.5%. On a Market Value of Assets basis, Pension Plan funded status decreased from 93.7% to 89.7% due to actual plan year investment return of +3.76% compared to an assumed return of 7.65%.¹

Pension Plan actuarially calculated employer contribution rates, prior to blending with Investment Plan rates to create blended proposed statutory contribution rates, increased from 8.99% of pay to 9.23% of pay on a composite basis. The most significant rate increase sources were a) actual growth of payroll to amortize the Unfunded Actuarial Liability (UAL) was only 2.3%, compared to the assumed payroll growth of 3.25%, b) an increased percentage of Pension Plan payroll in the Special Risk Membership Class, which has higher cost benefits than Regular Membership Class, and c) actual plan year demographic experience differing from assumption, including the effects of actual retirement/DROP entry at rates higher than assumed.

Due to strong overall investment performance over the past several years, the Market Value of Assets exceeds the smoothed Actuarial Value of Assets used for funded status and contribution rate calculations by \$5.3 billion as of July 1, 2015. That \$5.3 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 actual investment experience during that period fails to meet the 7.65% assumption used in this valuation, the not yet recognized gain will serve as a cushion to help mitigate the magnitude of increases in actuarially calculated employer contribution rates.

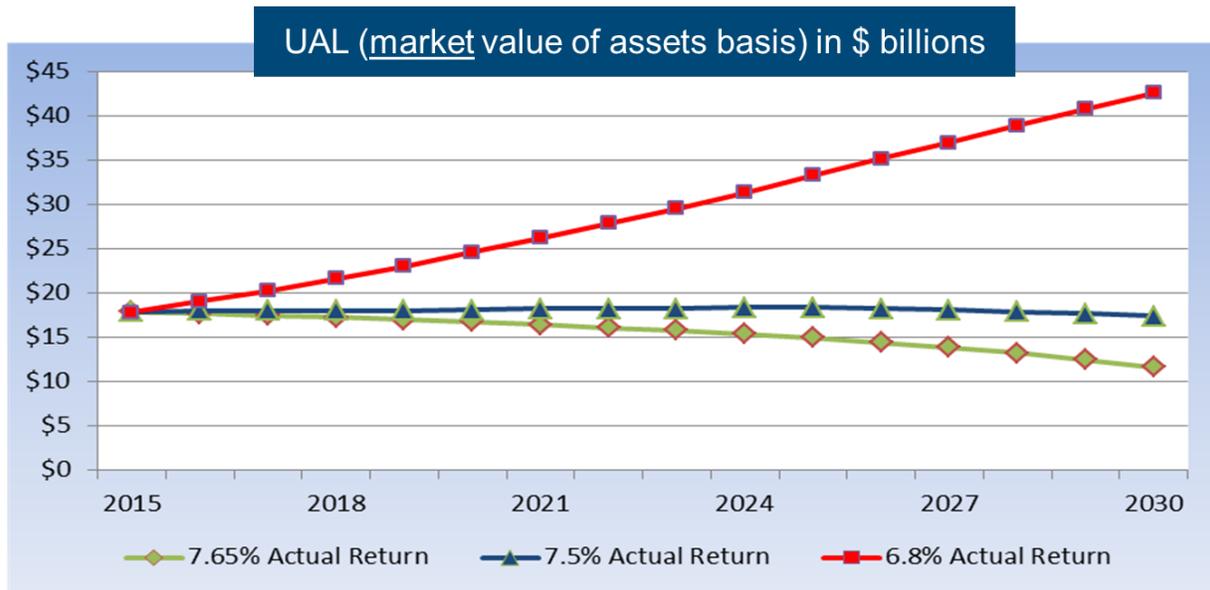
For this valuation a long-term average annual future investment return assumption of 7.65% was used. That assumption was initially adopted for use by the 2014 FRS Actuarial Assumptions Conference. While this assumption is identical to that used in the previous valuation, it is materially above the 50th percentile average returns in the proprietary capital market outlook models of both Milliman and the State Board of Administration's investment consultant (Aon Hewitt Investment Consulting). The Milliman and Aon Hewitt models each have 50th percentile average annual long-term future returns in the 6.8%-6.9% range, and both models indicate an approximately 35% likelihood of actual long-term future returns meeting or exceeding 7.65%.

All else being equal, the lower the selected investment return assumption, the higher the likelihood the Pension Plan will meet or exceed its assumed investment return in future years. A lower assumption would result in higher short-term actuarially calculated contribution rates for employers, but would also serve to lessen the magnitude of actuarially calculated contribution rate increases in the event that actual future investment performance fails to meet the assumption.

¹ The financial reporting information under GASB 67 requirements is issued under separate cover.

Actual future investment return experience for the Pension Plan is not affected by the assumption used in the actuarial valuation. Applying the 7.65% assumption used in this valuation, the following graph illustrates the UAL on a Market Value of Assets basis under three scenarios for steady actual future investment returns:

- 7.65%, which is the assumption selected for this valuation
- 7.50%, which is slight underperformance compared to the valuation assumption
- 6.80%, which is near the 50th percentile assumption in the Aon Hewitt Investment Consulting model



As illustrated in the graph, if actual returns match the 7.65% assumption the UAL is expected to decrease over time. This is consistent with the closed period amortization method used to calculate contribution rates in the valuation. If actual returns have modest underperformance compared to the 7.65% assumption, the UAL neither increases nor decreases materially over the illustrated projection period. On the other hand, if actual investment returns consistently underperform the assumption (0.85% underperformance is illustrated) the UAL will increase over time even if actuarially calculated contributions are made and all other experience follows the assumptions used in this valuation.

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

- Consistent with the previous valuation, the contribution rate calculation methodology 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 Pension Plan 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.

The tables immediately following compare July 1, 2014 actuarial valuation results with July 1, 2015 actuarial valuation results. The difference column shows the change between the July 1, 2014 valuation results and the July 1, 2015 valuation results.

A. Assets, Liabilities, and Funded Status

A comparison of the Actuarial Liability and Actuarial Value of Assets (AVA) follows. These figures are based upon the actuarial assumptions used to determine the actuarial costs of the FRS Pension Plan (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, 2015, the AVA is 96.5% of the MVA.

	Valuation Results (numbers in \$ billions)		
	July 1, 2014	July 1, 2015	Difference
1. Actuarial Liability	\$160.1	\$165.5	\$5.4
2. Actuarial Value of Assets	<u>\$138.6</u>	<u>\$143.2</u>	<u>\$4.6</u>
3. Unfunded Actuarial Liability (1 - 2)	\$21.5	\$22.3	\$0.8
4. Funded Percentage (2 / 1)	86.6%	86.5%	-0.1%

In Section 5 of this report we present an additional measure of funded status based on a different liability measure, 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 2015-2016 plan year, the actuarially calculated rates determined by the 2014 valuation and the legislated rates are equivalent. The 2016-2017 actual contribution rates will be set by the Florida Legislature, 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. As of July 1, 2015 the FRS Pension Plan has a UAL of \$22.3 billion on a smoothed Actuarial Value of Assets basis. 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, 2014 Valuation (2015-2016 Rates)		July 1, 2015 Valuation (2016-2017 Rates)		Difference	
	Regular	Special Risk	Regular	Special Risk	Regular	Special Risk
	Normal Cost	2.78%	11.17%	2.84%	11.17%	0.06%
UAL Cost ¹	<u>3.15%</u>	<u>10.68%</u>	<u>3.37%</u>	<u>10.54%</u>	<u>0.22%</u>	<u>-0.14%</u>
Total Cost for FRS Employers	5.93%	21.85%	6.21%	21.71%	0.28%	-0.14%

¹The 0.22% increase in UAL Cost for the Regular class represents a 0.02% increase in rates due to payroll growth less than assumed, and a 0.20% increase in rates due to other experience. The 0.14% decrease in UAL Cost for the Special Risk class represents a 0.11% decrease in rates due to payroll growth greater than assumed, and a 0.03% decrease in rates due to other experience.

C. Membership

The total membership (active, terminated vested, retired, and DROP) of the FRS Pension Plan increased by 14,599 members from 1,016,788 as of July 1, 2014, to 1,031,387 as of July 1, 2015, an increase of 1.4%. The total annualized projected payroll of non-DROP active Pension Plan members increased by 1.8%, from \$22.4 billion for the 2014-2015 plan year to \$22.8 billion for the 2015-2016 plan year, a \$0.4 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 Pension Plan membership change by status follows:

	Valuation Results: Counts		
	July 1, 2014	July 1, 2015	% Change
Active Members	511,751	512,909	0.2%
Terminated Vested Members	106,750	106,514	-0.2%
Retired Members	360,232	375,428	4.2%
DROP Members	<u>38,055</u>	<u>36,536</u>	-4.0%
Total Members	1,016,788	1,031,387	1.4%

D. Experience

Changes to assets and liabilities between July 1, 2014 and July 1, 2015 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	\$3.142	
▪ Payment of benefits and administrative expenses	(10.216)	
▪ Assumed plan year investment returns	10.333	
▪ Investment plan year gain/(loss) experience	<u>1.315</u>	
Total plan year Actuarial Value of Assets increase	\$4.574	Billion

The actual plan investment return on the AVA was 8.62% compared to the valuation's assumed return of 7.65%. On a market-value basis, the assets earned 3.76%.

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

	Rates of Return*		
	2012/2013	2013/2014	2014/2015
Market Value	13.63%	17.54%	3.76%
Actuarial Value	8.02%	9.95%	8.62%

* 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	\$3.343
▪ Change in plan provisions	0
▪ Changes in assumptions	0

Liability Plan Year (Gain) / Loss Experience

▪ Retired, disabled, & beneficiary mortality	0.062
▪ Members leaving active Pension Plan status	0.383
▪ New active members	0.406
▪ Other demographic sources not noted above ¹	<u>1.224</u>
▪ Liability plan year (gain) / loss experience	2.075

Total plan year Actuarial Liability increase \$5.418 Billion

¹ Reflects the combined effects of all other liability (gain)/loss sources for actuarial experience compared to assumptions used in the July 1, 2014 actuarial valuation. These include individual member salary increases different than assumption, the effects of inactive members returning to active status and actual experience compared to assumed on all other demographic assumptions used to calculate July 1, 2014 actuarial valuation results.

3. Unfunded Liability:

The net change in the UAL of the FRS Pension Plan was an increase of \$0.844 billion, from \$21.509 billion to \$22.353 billion. The net increase is attributable to the following:

Change due to:

▪ Expected increase, based on the net combined effect of plan contributions received, interest, and assumed investment and demographic experience	\$0.084	
▪ Investment plan year (gain)/loss experience	(1.315)	
▪ Liability plan year (gain)/loss experience	<u>2.075</u>	
Total plan year increase/(decrease) in UAL	\$0.844	Billion

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

2014-2015 Plan Year (Gain)/Loss Experience¹
 (All Amounts in Thousands)

	<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>Grand Total</u>
				<u>Judicial</u>	<u>Leg-Atty-Cab</u>			
Investment plan year (gain)/loss experience	(\$1,059,067)	(\$223,695)	(\$669)	(\$6,862)	(\$498)	(\$2,680)	(\$21,244)	(\$1,314,715)
<u>Liability plan year (gain) / loss experience by source</u>								
Retired, disabled & beneficiary mortality	\$52,425	(\$11,670)	\$593	\$13,365	\$767	(\$250)	\$6,879	\$62,109
Members leaving active Pension Plan status ²	253,023	139,662	(746)	(5,652)	1,049	2,234	(6,700)	382,870
New active Pension Plan members	279,149	106,729	1,074	4,581	114	2,332	11,874	405,853
Other demographic sources not noted above ³	898,990	269,734	(5,156)	(8,897)	(4,996)	(9,402)	84,028	1,224,301
Liability plan year (gain) / loss experience	\$1,483,587	\$504,455	(\$4,235)	\$3,397	(\$3,066)	(\$5,086)	\$96,081	\$2,075,133

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 combined effects of actual experience for DROP entry, retirement, second election transfers to the Investment Plan and all other cessations of active service during the plan year, when compared against assumptions used to calculate July 1, 2014 actuarial valuation results.

³ Reflects the combined effects of all other liability (gain)/loss sources for actuarial experience compared to assumptions used in the July 1, 2014 valuation. These include individual member salary increases different than assumption, the effects of inactive members returning to active status, and actual experience compared to assumed on all other demographic assumptions used to calculate July 1, 2014 actuarial valuation results.

4. Actuarially Calculated Contribution Rates:

On a level-rate-of-pay basis, the FRS Pension Plan 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>Senior Management</u>
				<u>Judicial</u>	<u>Leg-Atty-Cab</u>	<u>Local</u>	
A. 1. July 1, 2014 Employer Normal Cost	2.78%	11.17%	3.23%	11.43%	6.40%	8.37%	4.11%
2. UAL Cost	<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%
B. 1. July 1, 2015 Employer Normal Cost	2.84%	11.17%	3.19%	11.75%	6.58%	8.47%	4.18%
2. UAL Cost (See Table 4-11)	<u>3.37%</u>	<u>10.54%</u>	<u>32.30%</u>	<u>25.42%</u>	<u>44.61%</u>	<u>44.52%</u>	<u>21.00%</u>
3. Total July 1, 2015 Actuarially Calculated Employer Contribution Rate (1.+2.)	6.21%	21.71%	35.49%	37.17%	51.19%	52.99%	25.18%
C. Change in Total Actuarially Calculated Employer Contribution Rate (B.3.-A.3.)	0.28%	-0.14%	-3.23%	1.30%	-3.11%	-0.68%	0.46%

E. Graphs

Chart A: Assets / Liabilities

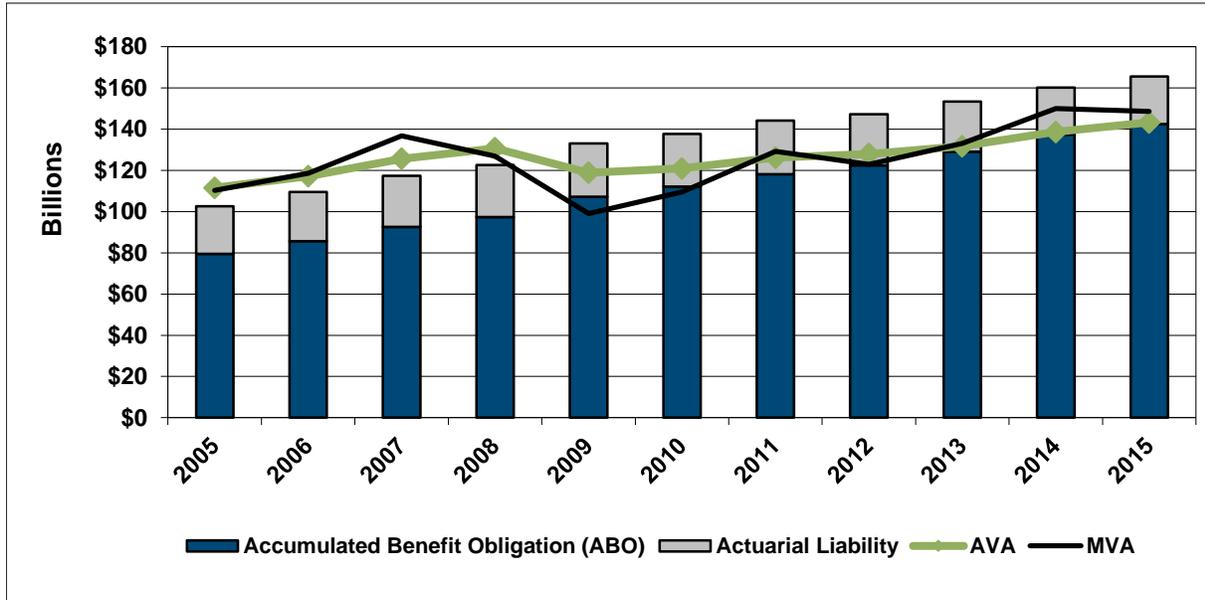


Chart B: Cash Flows

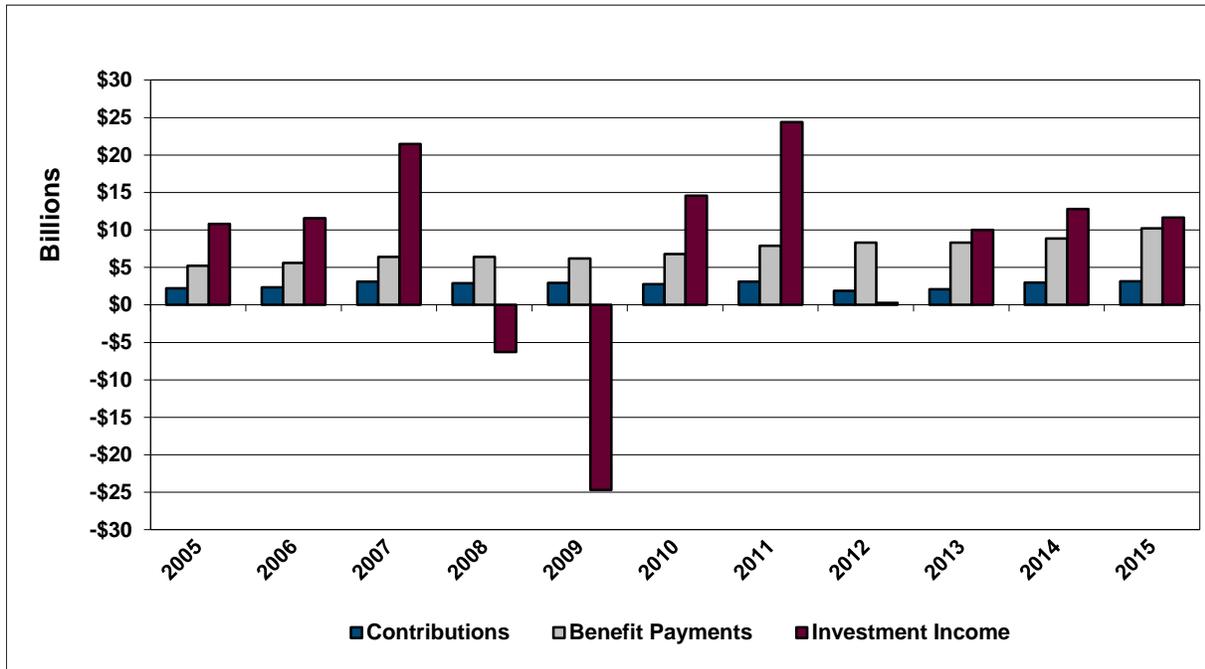


Chart C: Actuarially Calculated Pension Plan Contribution Rates¹ (as % of Payroll)

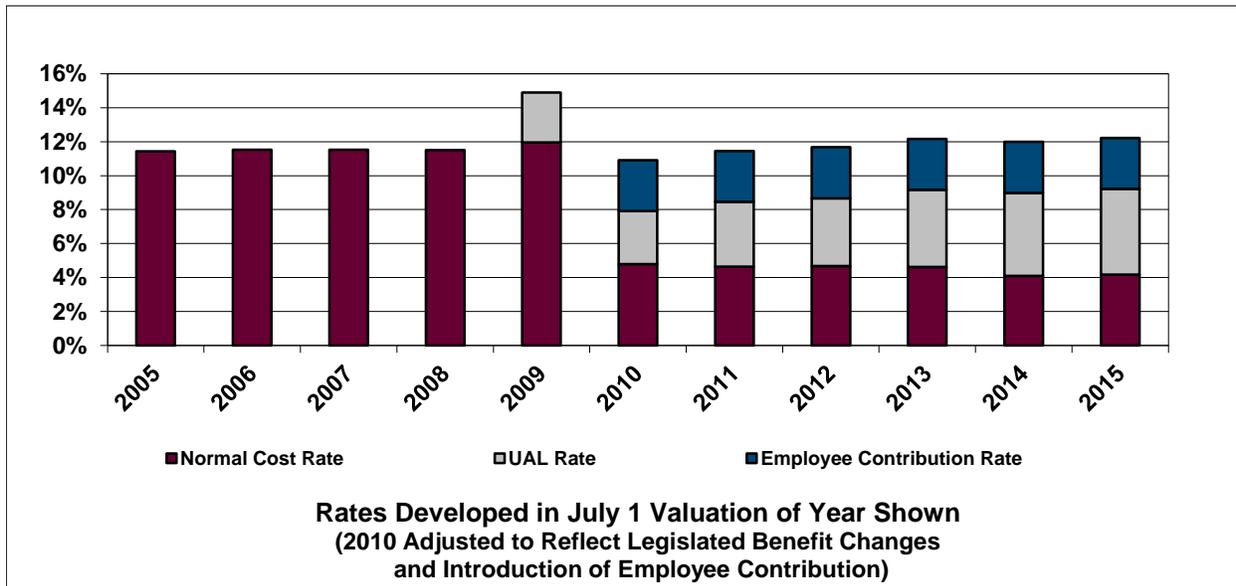
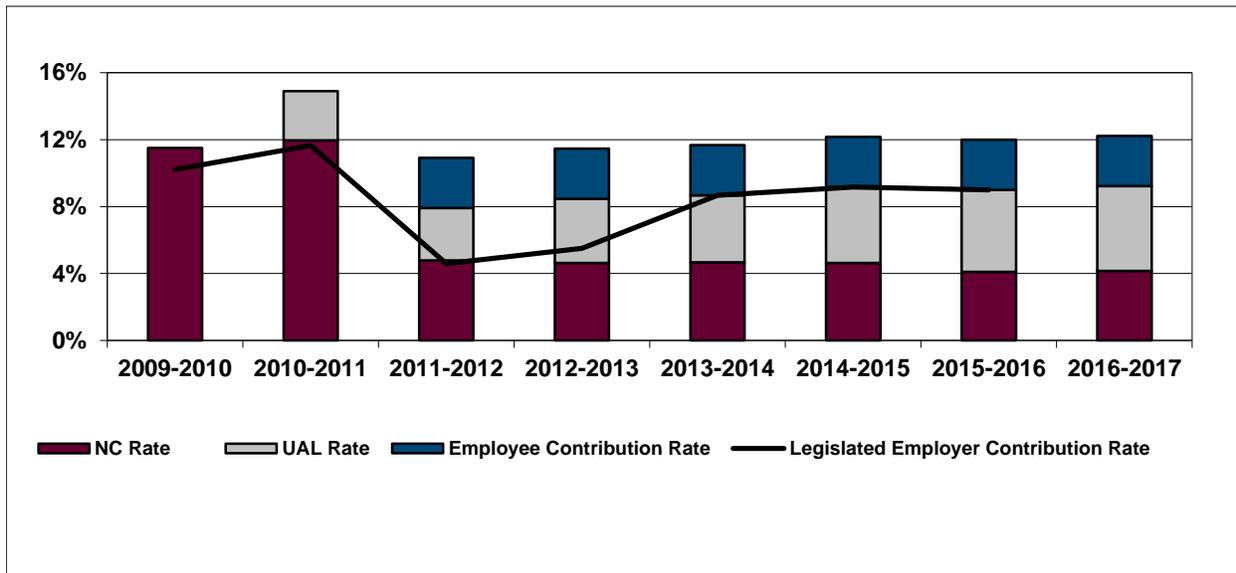


Chart D: Actuarially Calculated vs. Legislated Employer Contribution Rates (as % of Payroll)



¹ Chart C shows the Pension Plan component of proposed contribution rates prior to blending with Investment Plan contribution rates to create proposed statutory contribution rates. Historically, the Florida Legislature has enacted contribution rates which are charged uniformly on combined Investment Plan and Pension Plan payroll. Chart C reflects the Pension Plan component of proposed blended statutory rates, consistent with Table 4-12.

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 the annual valuations. This valuation reflects the method and assumptions changes proposed by the 2014 Experience Study and first adopted at the 2014 FRS Actuarial Assumptions Conference for use in the July 1, 2014 valuation. Those assumptions were unchanged for this valuation, based on review by the 2015 FRS Actuarial Assumptions Conference held in October 2015.
- Subsequent Assumptions Conferences may, at the discretion of the Conference Principals, consider changes to items such as the investment return assumption, the cost allocation method, or modifications to other assumptions and methods.

Future blended statutory rates for the System will be impacted by choice elections for the defined contribution FRS Investment Plan (IP), which is available as an alternative to the defined benefit FRS Pension Plan for members. The existence of the IP affects the Pension Plan contribution rates inasmuch as active members can elect to participate in either the Pension Plan or the IP. Thus, member plan election decisions can affect the demographic composition of the Pension Plan. Current IP membership is approximately 18% of total active membership.

We mention these caveats because the actuarial valuation process merely measures the impact of these factors on FRS Pension Plan 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. In addition, the asset reallocation developed in Table 2-5 is based on the presumption that assets assigned to the current DROP members equal the same percentage of DROP liabilities as the composite funded percentage of the FRS Pension Plan.

The DROP Contribution Rate has two components: Normal Cost and UAL Cost. The employer-paid Normal Cost is set to the composite Pension Plan average employer-paid Normal Cost of 4.17%. The calculation of the UAL Cost for the DROP is consistent with the calculation of the UAL Cost component of the other membership classes. Essentially, the DROP is assigned a proportionate share of the AVA. To accomplish this, assets are allocated such that the DROP's funded percentage is the same as the composite Pension Plan funded percentage. This asset re-allocation results in a UAL Cost for DROP payroll of 7.10%. The total DROP Contribution Rate (Normal Cost plus UAL Cost) in this valuation is 11.27%, compared to a DROP Contribution Rate of 11.22% 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, 2015. 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 Liability. 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. Prior to publication of this report, preliminary results based on assumptions and methods used in the previous valuation were discussed with the 2015 FRS Actuarial Assumptions Conference.

This section of the report deals with the asset determination. In the next section, the Actuarial Liability will be discussed. Section 4 will deal with the process for determining actuarially calculated contribution rates in order to systematically eliminate any shortfall between the assets and Actuarial Liability.

Two measures of Pension Plan 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 for GASB financial reporting purposes.¹ 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 Pension Plan 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.

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 (7.65%) 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 2-3 presents the details of this calculation. As of July 1, 2015 the actuarial value of assets is 96.46% of the market value of assets.

Six tables are presented in this section, summarizing the financial resources of the Pension Plan on July 1, 2015. Table 2-1 shows the reconciliation of valuation assets from June 30, 2014 to June 30, 2015. The assets are presented by category in Table 2-2. Table 2-3 provides a detailed development of the July 1, 2015 actuarial value of assets. In Table 2-4, the actuarial value of assets is allocated to each membership class, based on estimated cash flows, and the reallocation of assets to/from the various classes from/to the DROP. Table 2-5 shows the derivation of reallocation of assets to/from the DROP in order that the DROP as a funding mechanism is funded to the same extent as the Pension Plan as a whole. (This reallocation ensures

¹ The financial reporting information under GASB 67 requirements is issued under separate cover.

that the accumulation of assets in the DROP does not impact the contribution rates of the other classes). Finally Table 2-6 presents rates of return for the 2014-2015 plan year and the two prior plan years.

The Market Value of Assets as of July 1, 2015 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.

Table 2-1
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, 2014	\$150,014,292,372 ¹
Adjustment for Contribution Clearing Trust	-
Contributions by Source:	
Pension Contributions - Employer	2,438,084,925
Pension Contributions - Employees	687,864,970
Transfers from IP - Second Elections	61,131,078
Purchase of Time by Employees	10,439,142
Other	5,275,798
Interest and Dividends:	
Interest Income	901,745,439
Dividend Income	2,002,846,459
Real Estate Income	488,969,490
Other	248,005,714
Less Investment Activity Expense	(529,631,944)
Net Realized and Unrealized Appreciation	2,402,481,481
Pension Payments	(9,529,879,370) ²
Contribution Refunds	(9,425,580)
Disbursements to IP - Second Elections	(719,182,111)
Administrative Expenses	(18,073,979)
Transfers to Other Funds and Departments	(549,982)
 Market Value of Assets for Actuarial Valuation as of June 30, 2015	 \$148,454,393,902

¹ Market Value of Assets as of June 30, 2014 reflects post-audit adjustment of \$47,524,358 made to the audited financial statements after publication of the July 1, 2014 actuarial valuation report.

² Includes Accrued DROP Liability of \$308,549,911 representing single sum DROP benefits of members who retired from DROP on or before June 30, 2015.

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

ASSETS	Market Value as of July 1,	
	2014	2015
Cash and cash equivalents	\$309,564	\$725,276
State Treasury Investment Pool	1,666	1,648
Total cash and cash equivalents	\$311,230	\$726,924
<u>Investments:</u>		
Certificates of Deposit	\$1,417,426	\$1,936,529
U.S. Government and Federally Guaranteed Obligations	9,274,839	7,622,315
Federal Agencies	8,819,935	9,458,712
Commercial Paper	6,161,121	5,867,392
Options	2,389	33
Repurchase Agreements	1,150,000	400,000
International Bonds and Notes	2,593,572	2,636,430
Bonds and Notes	7,171,943	7,735,700
Real Estate Contracts	9,910,420	10,142,273
Mutual Funds Equity	7,501,662	6,315,998
Short Term Investment Funds	9,734	12,264
Domestic Equity / Domestic Equity Commingled	44,070,462	43,387,207
Alternative Investment	16,501,387	19,596,357
International Equity / International Equity Commingled	38,330,351	36,089,572
Total Investments	\$152,915,241	\$151,200,782
<u>Receivables:</u>		
Contributions receivable	201,012	210,653
Pending Investment Sales	1,764,144	1,477,146
Forward Contracts receivable	2,967,243	2,203,249
Other Receivables	587,811	539,212
Total receivables	\$5,520,210	\$4,430,260
Security Lending Collateral	\$4,618,260	\$8,346,890
Prepaid items; Furniture & Equipment net Accumulated Depreciation	10,645	8,992
Total Assets	\$163,375,586	\$164,713,848
LIABILITIES		
Accrued DROP liability ¹	0	308,550
Obligations under Security Lending Agreements	4,674,292	8,395,914
Pending Investment Purchases	5,287,741	4,984,157
Forward Contracts payable	2,974,063	2,198,673
Other Liabilities and Payables	425,198	372,160
Total Liabilities	\$13,361,294	\$16,259,454
FIDUCIARY NET POSITION		
Held in trust for pension benefits	\$150,014,292	\$148,454,394

¹ Per our understanding, the Accrued DROP Liability represents the amount of lump sum payments made in early July for members exiting the DROP on or before June 30, 2015.

Table 2-3
Florida Retirement System Pension Plan
Development of 2015 Actuarial Value of Assets

1. FRS Market Value of Assets on June 30, 2014 for Actuarial Valuation	\$150,014,292,372 ¹
2. Actuarial Value of Assets on July 1, 2014	\$138,621,200,784
3. 2014/2015 Net Cash Flow (Contributions less Benefits and Expenses)	(\$7,074,315,109)
4. Preliminary Actuarial Value of Assets, July 1, 2015, if Items 2 and 3 earned an assumed rate of 7.65%	\$141,880,814,983
5. Market Value of Assets, June 30, 2015 for Actuarial Valuation	\$148,454,393,902
6. Net Assets (Actuarial Value Basis) Available for Benefits Prior to Application of 80%/20% Corridor $4 + ((5 - 4) \times 20\%)$	\$143,195,530,766
7. 120% of Market Value [120% (5)]	\$178,145,272,682
8. 80% of Market Value [80% (5)]	\$118,763,515,122
9. Actuarial Value of Assets on July 1, 2015 Lesser of (6) and (7), but not less than (8)	\$143,195,530,766
10. Ratio of July 1, 2015 Actuarial Value of Assets to Market Value on June 30, 2015 for Actuarial Valuation	<u>96.46%</u>

¹ Market Value of Assets as of June 30, 2014 reflects post-audit adjustment of \$47,524,358 made to the audited financial statements after publication of the July 1, 2014 actuarial valuation report.

Table 2-4
Florida Retirement System Pension Plan
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, 2014	\$95,302,443	\$23,190,349	\$72,374	\$721,243	\$53,987	\$293,363	\$2,204,794	\$16,782,648	\$138,621,201
2. Total Contribution for the Plan Year	1,854,006	795,266	1,246	38,815	3,382	21,124	124,215	303,611	3,141,665
3. Benefit Payments and other Disbursements	(6,636,468)	(1,586,889)	(6,749)	(73,382)	(7,553)	(46,733)	(201,891)	(1,656,315)	(10,215,980)
4. Allocated Investment Earnings on AVA Basis	8,011,971	1,965,632	6,004	60,704	4,476	24,194	186,776	1,388,888	11,648,646
5. Unadjusted Actuarial Value of Assets (1) + (2) + (3) + (4)	98,531,952	24,364,358	72,875	747,380	54,292	291,948	2,313,894	16,818,832	143,195,531
6. Net Reallocation (see Table 2-5)	825,704	309,383	221	18,705	846	4,398	38,949	(1,198,206)	0
7. Allocated Actuarial Value of Assets by Class, July 1, 2015: (5) + (6)	\$99,357,656	\$24,673,741	\$73,096	\$766,085	\$55,138	\$296,346	\$2,352,843	\$15,620,626	\$143,195,531

Table 2-5
Florida Retirement System Pension Plan
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, 2015								\$18,058,527	\$165,548,928
2. Unadjusted Actuarial Value of Assets, July 1, 2015 prior to reallocation								16,818,832	143,195,531
3. Unfunded Actuarial Liability (UAL): (1) - (2)								\$1,239,695	\$22,353,397
4. Aggregate Funded Percentage: (2) / (1)								93.14%	86.50%
5. DROP Assets Required to Meet Aggregate Funded Percentage: (1) x (4) [Total System] - (2)								(\$1,198,206)	
6. Proportion of DROP Liability by Class	0.6891	0.2582	0.0002	0.0156	0.0007	0.0037	0.0325	N/A	1.0000
7. Assets to be Reallocated	\$825,704	\$309,383	\$221	\$18,705	\$846	\$4,398	\$38,949	(\$1,198,206)	0

Table 2-6
Florida Retirement System Pension Plan
Rates of Return on Investments
 (Assumes net cash flow occurs mid-year)

Asset Bases	2012/2013	2013/2014	2014/2015
Market Value	13.63%	17.54%	3.76%
Actuarial Value	8.02%	9.95%	8.62%

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 Pension Plan as of the valuation date, July 1, 2015. In this section, the discussion will focus on the commitments of the Pension Plan, which will be referred to as its Actuarial Liability. In later sections, other liability measures are presented (Section 5) based on accounting principles of the Financial Account Standards Board (FASB). Calculations required by the Governmental Accounting Standards Board (GASB) are developed and issued as part of a separate report. It is important to note that the accounting liabilities are presented for disclosure and comparison purposes and that the Actuarial Liability in this section is used for determining the FRS Pension Plan 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.

Consistent with the previous valuation's methodology and with preliminary 2015 valuation results discussed in October with the 2015 FRS Actuarial Assumptions Conference, the Pension Plan'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 Pension Plan 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 GASB Statements Nos. 67 & 68 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 UAL. For FRS, the amortization periods used in this report's contribution rate calculation methodology 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 used in the previous valuation and in preliminary 2015 valuation results discussed with the 2015 FRS Actuarial 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 Pension Plan for the 2014 valuation and the 2015 valuation. In Table 3-2, the 2015 liabilities are shown for each membership class.

Legislation enacted in 2001 “walls off,” for 25 years, the actuarial gains arising from former Pension 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 Pension 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 Pension Plan
Actuarial Liabilities
(\$ in Thousands)

	July 1, 2014 Valuation	July 1, 2015 Valuation
1. Actuarial Liabilities for:		
(a) Active Members	\$53,651,424	\$54,324,062
(b) Retired, Disabled and Beneficiary Members	81,702,688	88,519,139
(c) Terminated Vested Members	5,390,172	4,647,199
(d) DROP	19,386,218	18,058,528
2. Total Actuarial Liability	\$160,130,502	\$165,548,928
3. Actuarial Value of Assets	\$138,621,201	\$143,195,531
4. Unfunded Actuarial Liability / (Surplus)	\$21,509,301	\$22,353,397
5. Investment Plan Contingent Liability ¹	\$232,394	\$232,350
6. Surplus Available for Rate Reduction	\$0	\$0

¹ See Table 3-3.

Table 3-2
Florida Retirement System Pension Plan
Actuarial Liabilities by Membership Class
July 1, 2015
 (\$ 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	\$48,211,270	\$18,072,502	\$12,540	\$532,279	\$25,849	\$182,993	\$1,845,734	\$0	\$68,883,167
b. Retired, Disabled and Beneficiary Members	68,013,817	16,904,188	72,582	736,522	70,391	418,994	2,302,645	18,058,528	106,577,667
c. Terminated Vested Members	<u>3,834,592</u>	<u>625,161</u>	<u>1,053</u>	<u>15,200</u>	<u>7,886</u>	<u>18,648</u>	<u>144,659</u>	<u>0</u>	<u>4,647,199</u>
d. Total Present Value of Benefits (a)+(b)+(c)	120,059,679	35,601,851	86,175	1,284,001	104,126	620,635	4,293,038	18,058,528	180,108,033
2. Present Value of Future Normal Cost (Actives):	\$8,893,564	\$5,259,665	\$1,364	\$109,540	\$3,366	\$26,900	\$264,706	\$0	\$14,559,105
3. Actuarial Liabilities for:									
a. Active Members (1a) - (2)	\$39,317,706	\$12,812,837	\$11,176	\$422,739	\$22,483	\$156,093	\$1,581,028	\$0	\$54,324,062
b. Retired, Disabled and Beneficiary Members (1b)	68,013,817	16,904,188	72,582	736,522	70,391	418,994	2,302,645	18,058,528	106,577,667
c. Terminated Vested Members (1c)	<u>3,834,592</u>	<u>625,161</u>	<u>1,053</u>	<u>15,200</u>	<u>7,886</u>	<u>18,648</u>	<u>144,659</u>	<u>0</u>	<u>4,647,199</u>
d. Total Actuarial Liability (a)+(b)+(c)	\$111,166,115	\$30,342,186	\$84,811	\$1,174,461	\$100,760	\$593,735	\$4,028,332	\$18,058,528	\$165,548,928
4. Actuarial Value of Assets	<u>\$99,357,656</u>	<u>\$24,673,741</u>	<u>\$73,096</u>	<u>\$766,085</u>	<u>\$55,138</u>	<u>\$296,346</u>	<u>\$2,352,843</u>	<u>\$15,620,626</u>	<u>\$143,195,531</u>
5. Unfunded Actuarial Liability / (Surplus)	\$11,808,459	\$5,668,445	\$11,715	\$408,376	\$45,622	\$297,389	\$1,675,489	\$2,437,902 ¹	\$22,353,397
6. Present Value of Future Pay	\$159,626,583	\$37,796,700	\$21,145	\$757,608	\$36,961	\$245,810	\$3,796,044	\$0	\$202,280,851

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
Florida Retirement System Investment Plan
Contingent Actuarial Liabilities
July 1, 2015
 (\$ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class --			Senior Management	DROP	Total System
				Judicial	Leg-Atty-Cab	Local			
<u>As of July 1, 2014</u>									
Contingent Liability	\$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
<u>As of July 1, 2015</u>									
Contingent Liability ^{1 & 2}	\$213,548	\$9,367	(\$30)	(\$654)	\$151	\$102	\$9,866	NA	\$232,350
Participant Counts	6,108	178	1	4	3	8	152	NA	6,454

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, 2015 is calculated as the July 1, 2003 contingent liability increased by twelve 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 Pension Plan had an actuarial surplus, legislated contribution rates were generally below the Normal Cost. In this section we develop and present the Pension Plan contribution rates based on the July 1, 2015 membership data proposed to be effective for the Plan Year beginning July 1, 2016. Under separate cover, the Pension Plan contribution rates calculated in this valuation are blended with contribution rates for the Investment Plan to developed proposed blended statutory contribution rates for the Plan Year beginning July 1, 2016.

First, we present a description of the actuarial method used to determine the actuarially calculated FRS Pension Plan contribution rates for the 2016-2017 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 Pension Plan 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 Pension Plan, there has been a UAL for every valuation since 2009. 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 Pension Plan. 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 2009 (enacted, effective July 1, 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 \$5.1 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 Pension 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 2014-2015 and 2015-2016 plan years were the same as the actuarially calculated rates in the 2013 and 2014 actuarial valuations, respectively.

**Table 4-1
Florida Retirement System Pension Plan
Normal Cost Rates by Decrement
July 1, 2015**

	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%	1.74%	1.43%	1.44%	3.37%	2.69%	1.20%	NA	1.27%
2. Regular Retirement	3.52%	10.85%	3.47%	11.77%	4.77%	7.36%	4.66%	NA	4.69%
3. Non-Duty Death	0.21%	0.48%	0.17%	0.77%	0.37%	0.47%	0.28%	NA	0.25%
4. Line of Duty Death	0.18%	0.39%	0.29%	0.33%	0.28%	0.32%	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>0.64%</u>	<u>0.09%</u>	<u>0.53%</u>	<u>0.36%</u>	<u>0.62%</u>	<u>NA</u>	<u>0.53%</u>
8. Total Normal Cost	5.78%	14.17%	6.10%	14.71%	9.47%	11.37%	7.11%	NA	7.12%
9. Expected Employee Contributions ¹	<u>-2.94%</u>	<u>-3.00%</u>	<u>-2.91%</u>	<u>-2.96%</u>	<u>-2.89%</u>	<u>-2.90%</u>	<u>-2.93%</u>	<u>NA</u>	<u>-2.95%</u>
10. Employer Normal Cost	2.84%	11.17%	3.19%	11.75%	6.58%	8.47%	4.18%	4.17% ²	4.17%

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 the Pension Plan composite Normal Cost rate.

Table 4-2
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
Composite Plan
 (\$ 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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ (387,166)	10.9712	\$ (35,289)	14	\$ (380,169)	10.4338	\$ (36,436)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	16	(2,519)	11.4866	(219)	15	(2,484)	10.9712	(226)
June 30, 2000	Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000)	16	320,888	11.4866	27,936	15	316,451	10.9712	28,844
June 30, 2004	Assumption Change from 2003 Experience Study	20	(3,515,109)	13.3459	(263,385)	19	(3,510,741)	12.9097	(271,945)
June 30, 2009	Assumption Change from 2008 Experience Study	25	6,838,794	15.2734	447,759	24	6,897,391	14.9194	462,312
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	21,461,067	15.2734	1,405,130	24	21,644,953	14.9194	1,450,797
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(6,277,552)	15.2734	(411,013)	24	(6,331,340)	14.9194	(424,371)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(1,297,775)	15.2734	(84,970)	24	(1,308,895)	14.9194	(87,731)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	1,158,867	15.6129	74,225	25	1,170,509	15.2734	76,637
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	(1,269,375)	15.6129	(81,303)	25	(1,282,126)	15.2734	(83,945)
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	2,809,988	15.9386	176,301	26	2,842,032	15.6129	182,031
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	(112,454)	16.2509	(6,920)	27	(113,877)	15.9386	(7,145)
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	2,818,714	16.5505	170,310	28	2,857,642	16.2509	175,845
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	2,012,508	16.8379	119,523	29	2,042,455	16.5505	123,407
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(2,729,446)	16.8379	(162,102)	29	(2,770,060)	16.5505	(167,370)
June 30, 2015	2014-2015 Experience (Gains) / Losses		<u>523,966</u> ¹			30	<u>564,049</u>	16.8379	<u>33,499</u>
UAL as of Valuation Date			\$ 22,353,397		\$ 1,375,983		\$ 22,635,787		Total: \$ 1,454,201
									Projected FY 2016-2017 UAL Payroll: \$ 28,767,508
									NC Rate: 4.17%
									UAL Contribution Rate: 5.06%
									NCR + UALR: 9.23%

¹ The experience (gains)/losses developed on this table and the subsequent tables in this section are derived using a methodology which assumes 2014-2015 UAL contributions precisely equal the scheduled UAL amortization payments. Actual System contributions differ somewhat from the amortization schedules in this section, and there is no clear delineation in actual contributions received between Normal Cost and UAL contributions. The UAL (gain)/loss shown in the Executive Summary is derived using a methodology which incorporates actual 2014-2015 contributions.

**Table 4-3
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ (294,941)	10.9712	\$ (26,883)	14	\$ (289,611)	10.4338	\$ (27,757)
June 30, 2004	Assumption Change from 2003 Experience Study	20	(3,105,417)	13.3459	(232,687)	19	(3,101,558)	12.9097	(240,250)
June 30, 2009	Assumption Change from 2008 Experience Study	25	5,562,970	15.2734	364,227	24	5,610,635	14.9194	376,064
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	34,174,180	15.2734	2,237,502	24	34,466,996	14.9194	2,310,220
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(26,806,545)	15.2734	(1,755,117)	24	(27,036,233)	14.9194	(1,812,158)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(1,020,264)	15.2734	(66,800)	24	(1,029,006)	14.9194	(68,971)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	1,291,848	15.6129	82,742	25	1,304,825	15.2734	85,431
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	(1,639,956)	15.6129	(105,038)	25	(1,656,431)	15.2734	(108,452)
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	1,389,999	15.9386	87,210	26	1,405,850	15.6129	90,044
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	498,941	16.2509	30,702	27	505,255	15.9386	31,700
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	1,712,242	16.5505	103,456	28	1,735,889	16.2509	106,818
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	589,243	16.8379	34,995	29	598,011	16.5505	36,132
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(1,236,533)	16.8379	(73,438)	29	(1,254,933)	16.5505	(75,824)
June 30, 2015	2014-2015 Experience (Gains) / Losses		692,693			30	745,684	16.8379	44,286
	UAL as of Valuation Date		\$ 11,808,459		\$ 680,869		\$ 12,005,373		Total: \$ 747,284
									Projected FY2016-2017 UAL Payroll: \$ 22,161,484
									NC Rate: 2.84%
									UAL Contribution Rate: 3.37%
									NCR + UALR: 6.21%

Table 4-4
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ (89,295)	10.9712	\$ (8,139)	14	\$ (87,682)	10.4338	\$ (8,404)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	16	(2,570)	11.4866	(224)	15	(2,534)	10.9712	(231)
June 30, 2000	Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000)	16	320,888	11.4866	27,936	15	316,451	10.9712	28,844
June 30, 2004	Assumption Change from 2003 Experience Study	20	(634,409)	13.3459	(47,536)	19	(633,621)	12.9097	(49,081)
June 30, 2009	Assumption Change from 2008 Experience Study	25	546,402	15.2734	35,775	24	551,084	14.9194	36,938
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	7,529,285	15.2734	492,968	24	7,593,799	14.9194	508,990
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(2,498,420)	15.2734	(163,580)	24	(2,519,827)	14.9194	(168,897)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(190,559)	15.2734	(12,477)	24	(192,192)	14.9194	(12,882)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	(410,432)	15.6129	(26,288)	25	(414,555)	15.2734	(27,142)
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	458,626	15.6129	29,375	25	463,233	15.2734	30,329
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	259,042	15.9386	16,253	26	261,996	15.6129	16,781
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	(556,382)	16.2509	(34,237)	27	(563,423)	15.9386	(35,350)
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	490,073	16.5505	29,611	28	496,841	16.2509	30,573
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	1,328,250	16.8379	78,885	29	1,348,015	16.5505	81,449
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(866,071)	16.8379	(51,436)	29	(878,959)	16.5505	(53,108)
June 30, 2015	2014-2015 Experience (Gains) / Losses		(15,984)			30	(17,206)	16.8379	(1,022)
UAL as of Valuation Date			\$ 5,668,445		\$ 366,886		\$ 5,721,421		Total: \$ 377,787
									Projected FY 2016-2017 UAL Payroll: \$ 3,584,561
									NC Rate: 11.17%
									UAL Contribution Rate: 10.54%
									NCR + UALR: 21.71%

**Table 4-5
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ (321)	10.9712	\$ (29)	14	\$ (315)	10.4338	\$ (30)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	16	51	11.4866	4	15	50	10.9712	5
June 30, 2004	Assumption Change from 2003 Experience Study	20	10,591	13.3459	794	19	10,578	12.9097	819
June 30, 2009	Assumption Change from 2008 Experience Study	25	1,314	15.2734	86	24	1,326	14.9194	89
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	19,758	15.2734	1,294	24	19,927	14.9194	1,336
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(21,927)	15.2734	(1,436)	24	(22,115)	14.9194	(1,482)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	0	15.2734	0	24	0	14.9194	0
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	1,181	15.6129	76	25	1,193	15.2734	78
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	(539)	15.6129	(34)	25	(544)	15.2734	(36)
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	2,832	15.9386	178	26	2,864	15.6129	183
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	585	16.2509	36	27	593	15.9386	37
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	2,790	16.5505	169	28	2,828	16.2509	174
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	(5,737)	16.8379	(341)	29	(5,822)	16.5505	(352)
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	6,500	16.8379	386	29	6,596	16.5505	399
June 30, 2015	2014-2015 Experience (Gains) / Losses		(5,364)			30	(5,774)	16.8379	(343)
	UAL as of Valuation Date		\$ 11,715		\$ 1,182		\$ 11,385	Total:	\$ 877
							Projected FY 2016-2017 UAL Payroll:		\$ 2,715
								NC Rate:	3.19%
								UAL Contribution Rate:	32.30%
								NCR + UALR:	35.49%

Table 4-6
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ 41	10.9712	\$ 4	14	\$ 41	10.4338	\$ 4
June 30, 2004	Assumption Change from 2003 Experience Study	20	27,985	13.3459	2,097	19	27,951	12.9097	2,165
June 30, 2009	Assumption Change from 2008 Experience Study	25	20,083	15.2734	1,315	24	20,255	14.9194	1,358
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	508,044	15.2734	33,263	24	512,397	14.9194	34,344
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(275,595)	15.2734	(18,044)	24	(277,956)	14.9194	(18,631)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(25,381)	15.2734	(1,662)	24	(25,599)	14.9194	(1,716)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	(22,041)	15.6129	(1,412)	25	(22,262)	15.2734	(1,458)
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	3,168	15.6129	203	25	3,200	15.2734	210
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	83,726	15.9386	5,253	26	84,680	15.6129	5,424
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	6,544	16.2509	403	27	6,627	15.9386	416
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	106,011	16.5505	6,405	28	107,475	16.2509	6,613
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	24,122	16.8379	1,433	29	24,481	16.5505	1,479
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(53,341)	16.8379	(3,168)	29	(54,135)	16.5505	(3,271)
June 30, 2015	2014-2015 Experience (Gains) / Losses		5,009			30	5,392	16.8379	320
	UAL as of Valuation Date		\$ 408,376		\$ 26,090		\$ 412,547	Total:	\$ 27,258
								Projected FY2016-2017 UAL Payroll:	\$ 107,248
								NC Rate:	11.75%
								UAL Contribution Rate:	25.42%
								NCR + UALR:	37.17%

**Table 4-7
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ 2	10.9712	\$ 0	14	\$ 2	10.4338	\$ 0
June 30, 2004	Assumption Change from 2003 Experience Study	20	2,107	13.3459	158	19	2,104	12.9097	163
June 30, 2009	Assumption Change from 2008 Experience Study	25	2,015	15.2734	132	24	2,033	14.9194	136
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	61,732	15.2734	4,042	24	62,261	14.9194	4,173
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(35,304)	15.2734	(2,312)	24	(35,607)	14.9194	(2,387)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(801)	15.2734	(52)	24	(808)	14.9194	(54)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	2,870	15.6129	184	25	2,898	15.2734	190
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	130	15.6129	8	25	132	15.2734	9
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	8,439	15.9386	529	26	8,536	15.6129	547
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	(3,946)	16.2509	(243)	27	(3,996)	15.9386	(251)
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	18,818	16.5505	1,137	28	19,078	16.2509	1,174
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	(2,895)	16.8379	(172)	29	(2,938)	16.5505	(178)
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(892)	16.8379	(53)	29	(905)	16.5505	(55)
June 30, 2015	2014-2015 Experience (Gains) / Losses		<u>(6,654)</u>			30	<u>(7,163)</u>	16.8379	<u>(425)</u>
	UAL as of Valuation Date		\$ 45,622		\$ 3,359		\$ 45,627	Total:	\$ 3,043
							Projected FY2016-2017 UAL Payroll:		\$ 6,820
							NC Rate:		6.58%
							UAL Contribution Rate:		<u>44.61%</u>
							NCR + UALR:		51.19%

Table 4-8
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ 5	10.9712	\$ 0	14	\$ 5	10.4338	\$ 0
June 30, 2004	Assumption Change from 2003 Experience Study	20	35,423	13.3459	2,654	19	35,378	12.9097	2,740
June 30, 2009	Assumption Change from 2008 Experience Study	25	11,718	15.2734	767	24	11,818	14.9194	792
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	240,526	15.2734	15,748	24	242,587	14.9194	16,260
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(59,553)	15.2734	(3,899)	24	(60,063)	14.9194	(4,026)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(7,270)	15.2734	(476)	24	(7,333)	14.9194	(491)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	2,100	15.6129	135	25	2,121	15.2734	139
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	300	15.6129	19	25	303	15.2734	20
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	13,944	15.9386	875	26	14,103	15.6129	903
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	(5,672)	16.2509	(349)	27	(5,744)	15.9386	(360)
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	108,672	16.5505	6,566	28	110,173	16.2509	6,779
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	(23,012)	16.8379	(1,367)	29	(23,355)	16.5505	(1,411)
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(10,225)	16.8379	(607)	29	(10,377)	16.5505	(627)
June 30, 2015	2014-2015 Experience (Gains) / Losses		(9,566)			30	(10,298)	16.8379	(612)
UAL as of Valuation Date			\$ 297,389		\$ 20,066		\$ 299,319	Total:	\$ 20,107
									Projected FY2016-2017 UAL Payroll: \$ 45,169
									NC Rate: 8.47%
									UAL Contribution Rate: 44.52%
									NCR + UALR: 52.99%

**Table 4-9
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 1999	Assumption Change from 1998 Experience Study	15	\$ (2,657)	10.9712	\$ (242)	14	\$ (2,609)	10.4338	\$ (250)
June 30, 2004	Assumption Change from 2003 Experience Study	20	217,583	13.3459	16,303	19	217,312	12.9097	16,833
June 30, 2009	Assumption Change from 2008 Experience Study	25	64,604	15.2734	4,230	24	65,157	14.9194	4,367
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	1,258,253	15.2734	82,382	24	1,269,034	14.9194	85,060
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	(285,598)	15.2734	(18,699)	24	(288,045)	14.9194	(19,307)
June 30, 2009	2009-2010 Plan Changes (HB 479)	25	(53,499)	15.2734	(3,503)	24	(53,958)	14.9194	(3,617)
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	34,774	15.6129	2,227	25	35,123	15.2734	2,300
June 30, 2010	2010-2011 Plan Changes (SB 2100)	26	(91,104)	15.6129	(5,835)	25	(92,019)	15.2734	(6,025)
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	130,956	15.9386	8,216	26	132,449	15.6129	8,483
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	67,014	16.2509	4,124	27	67,863	15.9386	4,258
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	375,100	16.5505	22,664	28	380,280	16.2509	23,401
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	(146,769)	16.8379	(8,717)	29	(148,953)	16.5505	(9,000)
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	59,220	16.8379	3,517	29	60,101	16.5505	3,631
June 30, 2015	2014-2015 Experience (Gains) / Losses		47,612			30	51,255	16.8379	3,044
	UAL as of Valuation Date		\$ 1,675,489		\$ 106,668		\$ 1,692,991	Total:	\$ 113,179
							Projected FY2016-2017 UAL Payroll:		\$ 539,047
							NC Rate:		4.18%
							UAL Contribution Rate:		21.00%
							NCR + UALR:		25.18%

Table 4-10
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2015
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 2015-2016	Remaining Payments one year after Valuation Date	Balance One Year After Valuation Date	Amortization Factor	Amortization Payment for FY 2016-2017
June 30, 2004	Assumption Change from 2003 Experience Study	20	\$ (68,972)	13.3459	\$ (5,168)	19	\$ (68,886)	12.9097	\$ (5,336)
June 30, 2009	Assumption Change from 2008 Experience Study	25	629,688	15.2734	41,228	24	635,083	14.9194	42,568
June 30, 2009	2008-2009 Experience (Gains) / Losses	25	(22,330,712)	15.2734	(1,462,069)	24	(22,522,049)	14.9194	(1,509,586)
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	25	23,705,391	15.2734	1,552,074	24	23,908,507	14.9194	1,602,516
June 30, 2010	2009-2010 Experience (Gains) / Losses	26	258,567	15.6129	16,561	25	261,165	15.2734	17,099
June 30, 2011	2010-2011 Experience (Gains) / Losses	27	921,049	15.9386	57,787	26	931,552	15.6129	59,666
June 30, 2012	2011-2012 Experience (Gains) / Losses	28	(119,539)	16.2509	(7,356)	27	(121,052)	15.9386	(7,595)
June 30, 2013	2012-2013 Experience (Gains) / Losses	29	5,009	16.5505	303	28	5,078	16.2509	312
June 30, 2014	Assumption/Method Change from 2013 Experience Study	30	249,306	16.8379	14,806	29	253,015	16.5505	15,287
June 30, 2014	2013-2014 Experience (Gains) / Losses	30	(628,104)	16.8379	(37,303)	29	(637,450)	16.5505	(38,515)
June 30, 2015	2014-2015 Experience (Gains) / Losses		(183,781)			30	(197,840)	16.8379	(11,750)
	UAL as of Valuation Date		\$ 2,437,902		\$ 170,863		\$ 2,447,123	Total:	\$ 164,667
							Projected FY2016-2017 UAL Payroll:		\$ 2,320,464
							NC Rate:		4.17%
							UAL Contribution Rate:		7.10%
							NCR + UALR:		11.27%

Table 4-11
Florida Retirement System Pension Plan
Actuarially Calculated Employer Contribution Rates
July 1, 2015 Valuation for Fiscal Year Beginning July 1, 2016

No surplus available for rate reduction

	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	2.84%	11.17%	3.19%	11.75%	6.58%	8.47%	4.18%	4.17% ²	4.17%	4.17%
2. UAL Cost	3.37%	10.54%	32.30%	25.42%	44.61%	44.52%	21.00%	4.87%	7.10%	5.06%
3. Total Employer Cost [(1) + (2)]	6.21%	21.71%	35.49%	37.17%	51.19%	52.99%	25.18%	9.04%	11.27%	9.23%
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)]	6.21%	21.71%	35.49%	37.17%	51.19%	52.99%	25.18%	9.04%	11.27%	9.23%

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 Primarily due to an increased percentage of System payroll in the Special Risk Membership Class, this year the composite contribution rate is 0.07% more than last year's rate of 4.10%.

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

Plan Year 2014-2015 and Plan Year 2015-2016 rates were set equal to the actuarially calculated rates
 Plan Year 2016-2017 rates will be set by the Legislature during the 2016 Legislative Session

Membership Class	Plan Year 2014-2015		Plan Year 2015-2016		Plan Year 2016-2017	
	Actuarially Calculated	Legislated	Actuarially Calculated	Legislated	Actuarially Calculated	Legislated
1. Regular	6.54%	6.54%	5.93%	5.93%	6.21%	TBD
2. Special Risk	19.71%	19.71%	21.85%	21.85%	21.71%	TBD
3. Special Risk Administrative	55.12%	55.12%	38.72%	38.72%	35.49%	TBD
4. Elected Officers' Class - Judicial	33.71%	33.71%	35.87%	35.87%	37.17%	TBD
5. Elected Officers' Class - Leg-Atty-Cab	56.99%	56.99%	54.30%	54.30%	51.19%	TBD
6. Elected Officers' Class - Local	54.22%	54.22%	53.67%	53.67%	52.99%	TBD
7. Senior Management Service	24.79%	24.79%	24.72%	24.72%	25.18%	TBD
8. Composite without DROP	8.99%	8.99%	8.78%	8.78%	9.04%	TBD
9. DROP	11.02%	11.02%	11.22%	11.22%	11.27%	TBD
10. Composite with DROP	9.17%	9.17%	8.99%	8.99%	9.23%	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 shown 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.¹

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 Accumulated Benefit 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 Pension Plan determined as of July 1, 2015. 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 Pension Plan for the current and two prior valuations. The trend of the Pension Plan’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, 2014, to the ABO as of July 1, 2015. This reconciliation indicates the impact of the assumption changes and plan changes, if any.

¹ The valuation report in prior years included Table 5-4 which showed the Net Pension Obligation under GASB Statement No. 27. That exhibit has been discontinued since GASB Statement No. 27 is not applicable after plan year 2013-2014. Please refer to the separate GASB 67 report for financial reporting information.

Table 5-1
Florida Retirement System Pension Plan
Accumulated Benefit Obligation - ASC 960
July 1, 2015
 (All Amounts in Thousands)

	Regular	Special Risk	Special Risk	-- Elected Officers' Class --			Senior	DROP	Total
			Administrative	Judicial	Leg-Atty-Cab	Local	Management		
A. Accumulated Benefit Obligation									
1. Active Members									
a. Accumulated Member Contributions	\$1,884,321	\$349,721	\$290	\$11,017	\$731	\$4,524	\$53,475	\$0	\$2,304,079
b. Employer-Financed Vested Benefits	20,390,327	6,130,721	6,245	260,498	13,202	100,588	904,399	0	27,805,980
c. Employer-Financed Non-Vested Benefits	842,183	210,454	239	7,325	915	3,859	21,524	0	1,086,499
d. Total	\$23,116,831	\$6,690,896	\$6,774	\$278,840	\$14,848	\$108,971	\$979,398	\$0	\$31,196,558
2. Annuitants	\$68,013,817	\$16,904,188	\$72,582	\$736,522	\$70,391	\$418,994	\$2,302,645	\$18,058,528	\$106,577,667
3. Other Inactive Members	\$3,834,592	\$625,161	\$1,053	\$15,200	\$7,886	\$18,648	\$144,659	\$0	\$4,647,199
4. Total Accumulated Benefit Obligation	\$94,965,240	\$24,220,245	\$80,409	\$1,030,562	\$93,125	\$546,613	\$3,426,702	\$18,058,528	\$142,421,424
B. Assets Available for Benefits									
1. Market	\$103,006,572	\$25,579,885	\$75,780	\$794,220	\$57,163	\$307,229	\$2,439,251	\$16,194,294	\$148,454,394
2. Actuarial Basis	\$99,357,656	\$24,673,741	\$73,096	\$766,085	\$55,138	\$296,346	\$2,352,843	\$15,620,626	\$143,195,531
C. Unfunded / (Surplus) Total Accumulated Benefit Obligation,									
Assets at:									
1. Market	(\$8,041,332)	(\$1,359,640)	\$4,629	\$236,342	\$35,962	\$239,384	\$987,451	\$1,864,234	(\$6,032,970)
2. Actuarial Basis	(\$4,392,416)	(\$453,496)	\$7,313	\$264,477	\$37,987	\$250,267	\$1,073,859	\$2,437,902	(\$774,107)
D. Percent of Accumulated Obligation Funded,									
Assets at:									
1. Market	108.47%	105.61%	94.24%	77.07%	61.38%	56.21%	71.18%	89.68%	104.24%
2. Actuarial Basis	104.63%	101.87%	90.91%	74.34%	59.21%	54.21%	68.66%	86.50%	100.54%

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

	July 1, 2013 Valuation Basis	July 1, 2014 Valuation Basis	July 1, 2015 Valuation Basis
A. Accumulated Benefit Obligation			
1. Active Members			
a. Accumulated Member Contributions	\$1,228,277	\$1,801,623	\$2,304,079
b. Employer-Financed Vested Benefits	25,782,555	27,929,833	27,805,980
c. Employer-Financed Non-Vested Benefits	1,359,236	1,124,278	1,086,499
d. Total	\$28,370,068	\$30,855,734	\$31,196,558
2. Annuitants	\$74,843,720	\$81,702,688	\$88,519,139
3. Other Inactive Members	\$5,234,608	\$5,390,172	\$4,647,199
4. DROP	\$20,597,701	\$19,386,218	\$18,058,528
5. Total Accumulated Benefit Obligation	\$129,046,097	\$137,334,812	\$142,421,424
B. Assets Available for Benefits			
1. Market	\$133,027,956	\$150,014,292 ²	\$148,454,394
2. Actuarial Basis	\$131,680,617	\$138,621,201	\$143,195,531
C. Unfunded/(Surplus) Total Accumulated Benefit Obligation,			
Assets at:			
1. Market	(\$3,981,859)	(\$12,679,480)	(\$6,032,970)
2. Actuarial Basis	(\$2,634,518)	(\$1,286,389)	(\$774,107)
D. Percent of Accumulated Benefit Obligation Funded,			
Assets at:			
1. Market	103.09%	109.23%	104.24%
2. Actuarial Basis	102.04%	100.94%	100.54%
E. Annual Salaries ¹	\$24,568,642	\$24,723,565	\$25,063,048
F. Unfunded/(Surplus) Accumulated Benefit Obligation as a			
Percent of Salary, Assets at:			
1. Market	-16.21%	-51.28%	-24.07%
2. Actuarial Basis	-10.72%	-5.20%	-3.09%

¹ Includes Drop Salaries

² Reflects post-audit adjustment made to audited financial statements after publication of July 1, 2014 actuarial valuation report.

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

	ASC 960 Basis
Accumulated Benefit Obligation at July 1, 2014	\$137,334,812
Increase (Decrease) During Year Attributable to:	
Increase for Interest Due to Decrease in Discount Period	\$10,122,552
Benefits Paid - PY 2015	(\$10,215,980)
Benefits Accrued, & Other Gains/Losses	\$5,180,040
Plan Provision / Assumption Changes	\$0
Net Increase (Decrease)	\$5,086,612
Accumulated Benefit Obligation at July 1, 2015	\$142,421,424

Appendix A: Actuarial Methods, Procedures and Assumptions

The actuarial assumptions are intended to estimate the future experience of FRS members 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's benefits.

Assumption Tables

A complete listing of all the assumptions, methods and procedures that are used in the 2015 actuarial valuation of the FRS Pension Plan 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 valuation was based on data as of June 30, 2015, as provided by the Division. The data used in this valuation consists 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 the FRS Pension Plan, 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.

The FRS Pension Plan 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 the FRS. Even each category of EAN contains different interpretations of how to calculate the key metrics. GASB Standards Nos. 67 & 68 mandate the use of a particular interpretation of Individual EAN for financial reporting purposes. GASB 67 & 68 information for the 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 the 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 is 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 the 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 2015 valuation sets normal cost rates as if each member in the Pension Plan 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 the same method used in the prior valuation.

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 assumptions 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: This 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 (7.65%) 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 ensure 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 two items above)
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 for Vested Terminated Members (Tier I and Tier II)

All current vested terminated members are assumed to begin receiving benefits on the normal retirement benefit age for the appropriate class and tier. All future members who terminate employment with a vested benefit are also assumed to commence benefit at the normal retirement benefit age.

Optional Form of Payment

All future retirees are assumed to elect the straight life (Option 1) form of benefit. For current retirees and members in DROP, the actual elected form is used.

**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									
	20	25	30	35	Attained Age		50	55	60	65
					40	45				
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%

Combined Years of Service	Regular – Female									
	20	25	30	35	Attained Age		50	55	60	65
					40	45				
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)

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%	
10+	2.0%	2.0%	2.0%	1.9%	1.9%	1.9%	1.7%	1.3%	1.1%	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%	
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%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
1	21.0%	17.5%	15.5%	14.6%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%
2	21.0%	17.5%	15.5%	14.6%	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%
4	15.5%	14.9%	14.5%	13.6%	12.9%	12.6%	12.4%	12.3%	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%
6	10.6%	10.3%	9.8%	9.3%	9.0%	8.7%	8.4%	8.3%	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	9.6%	9.5%	9.1%	8.8%	8.5%	8.3%	8.1%	8.0%	7.9%	7.8%
9	6.6%	6.6%	6.3%	6.1%	5.9%	5.7%	5.6%	5.4%	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%

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%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
1	15.5%	13.0%	11.8%	11.1%	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%
3	17.1%	16.2%	15.5%	15.0%	14.6%	14.3%	14.1%	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%
5	12.1%	11.3%	10.5%	9.9%	9.4%	9.0%	8.7%	8.6%	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%
7	10.3%	10.1%	9.6%	9.2%	8.8%	8.6%	8.4%	8.2%	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%
9	7.4%	7.4%	6.9%	6.5%	6.1%	5.8%	5.5%	5.3%	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%



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

Eligible Survivors

It is assumed that 80% of deceased active members will have survivors eligible for lifetime benefits upon their death. Males are assumed to be three years older than their female spouses.

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. There have been no changes in assumptions since the prior valuation.

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 (Pension Plan) 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, 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 FRS Defined Benefit Program 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, 2015 – June 30, 2016 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	2.78%	11.17%	3.23%	11.43%	6.40%	8.37%	4.11%	4.10%
- UAL Rate	<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>	<u>7.12</u>
- Total DB Rate	5.93	21.85	38.72	35.87	54.30	53.67	24.72	11.22
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	2.91%	11.35%	3.71%	11.39%	6.48%	8.48%	4.32%	4.10%
- UAL Rate	<u>2.65</u>	<u>8.99</u>	<u>27.54</u>	<u>22.62</u>	<u>37.62</u>	<u>32.09</u>	<u>15.41</u>	<u>7.12</u>
- Total Rate	5.56	20.34	31.25	34.01	44.10	40.57	19.73	11.22

The above rates exclude the 0.04% administrative charge for Investment Plan administration and education (except DROP), and the 1.66% 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)
(Sections 121.0515(8) and 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)
(Sections 121.0515(8) and 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 contingent 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 final 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 final 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 final compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

25% of average final 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 final compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

42% of average final compensation, except for the Special Risk and the Special Risk Administrative Support classes whose members are entitled to 65% of average final 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 (Option 3) 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 final 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 final 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 qualified 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 0.04% charge for IP administration and education, the separate employer contribution assessed to fund the IP disability program, or the contribution of 1.66% 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	2015-2016 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	2015-2016 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 Pension Plan as of July 1, 2015.

The membership of the Pension Plan 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 category 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 Pension Plan
Annuitants at July 1, 2015
Regular and Early Retirement by Age

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	3,147	\$39,817
50 to 54	5,632	134,760
55 to 59	20,159	462,657
60 to 64	54,010	1,230,806
65 to 69	93,439	2,000,131
70 to 74	73,073	1,488,854
75 to 79	48,493	937,575
80 & Up	63,645	1,234,483
Total	361,598	\$7,529,083

Table C-2
Florida Retirement System Pension Plan
Annuitants at July 1, 2015
Disability Retirement by Age

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	712	\$10,995
50 to 54	1,330	21,258
55 to 59	2,352	34,713
60 to 64	3,228	48,230
65 to 69	2,810	41,808
70 to 74	1,815	26,889
75 to 79	911	12,551
80 & Up	672	8,299
Total	13,830	\$204,743

Table C-3
Florida Retirement System Pension Plan
Potential Annuitants at July 1, 2015
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	564	\$1,423
30 to 34	3,640	14,281
35 to 39	7,641	36,659
40 to 44	11,900	62,249
45 to 49	15,532	92,745
50 to 54	21,583	133,277
55 to 59	18,958	128,573
60 & Up	20,696	109,419
Total	100,514	\$578,626

¹ Deferred to Age 62

Table C-4
Florida Retirement System Pension Plan
Potential Annuitants at July 1, 2015
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	73	\$560
30 to 34	368	3,342
35 to 39	668	6,928
40 to 44	1,305	14,884
45 to 49	1,539	19,808
50 to 54	1,153	16,542
55 to 59	459	5,775
60 & Up	435	4,615
Total	6,000	\$72,454

² Deferred to Age 55

Table C-5
Florida Retirement System Pension Plan
Annuitants and Potential Annuitants at July 1, 2015
All Types of Retirement by System

System	Annuitants	Potential Annuitants	Total
Number of Persons			
Regular	336,882	99,094	435,976
Senior Management Service	3,812	1,072	4,884
Special Risk	32,222	5,985	38,207
Special Risk Administrative	168	15	183
EOC: Judicial	812	43	855
EOC: Legislative/Attorneys/Cabinet	204	89	293
EOC: Local	1,328	216	1,544
Total	375,428	106,514	481,942
Annual Benefits (in Thousands)			
Regular	\$6,151,534	\$553,502	\$6,705,036
Senior Management Service	182,880	19,825	202,705
Special Risk	1,275,000	72,353	1,347,353
Special Risk Administrative	6,306	101	6,407
EOC: Judicial	70,808	2,011	72,819
EOC: Legislative/Attorneys/Cabinet	6,524	1,021	7,545
EOC: Local	40,774	2,267	43,041
Total	\$7,733,826	\$651,080	\$8,384,906

Table C-6
Florida Retirement System Pension Plan
Annuitants at July 1, 2015
DROP Members

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	568	\$37,080
50 to 54	3,088	157,989
55 to 59	8,440	307,762
60 to 64	16,068	384,003
65 to 69	8,076	159,735
70 to 74	249	4,117
75 to 79	39	506
80 & Up	8	100
Total	36,536	\$1,051,292

Table C-7
Florida Retirement System Pension Plan
Summary of Active Members at July 1, 2015

System	Number of Persons	Annual Salary (in Thousands) ¹	Accumulated Employee Contributions (in Thousands)
Regular	446,655	\$18,309,123	\$1,879,057
Senior Management Service	5,565	486,194	53,475
Special Risk	58,982	3,346,480	349,721
Special Risk Administrative	56	2,562	290
EOC: Judicial	720	100,738	11,017
EOC: Legislative/Attorneys/Cabinet	111	6,013	731
EOC: Local	786	40,610	4,524
Teachers' Retirement System (TRS)	15	1,714	5,264
Institute of Food and Agricultural Sciences (IFAS)	19	1,900	0
Total	512,909	\$22,295,334	\$2,304,079

¹ The salary shown in Tables C-7 through C-17 represents the salaries of the FRS DB plan members on July 1, 2015. The payroll on which normal costs are determined (\$22,797,335,000) 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 Pension Plan
Member Counts and Average Salaries at July 1, 2015
Regular 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	916	2										918
20 to 24	12,555	161										12,716
25 to 29	26,927	5,562	217									32,706
30 to 34	18,843	16,698	5,709	168								41,418
35 to 39	13,696	12,694	15,457	4,415	92							46,354
40 to 44	12,508	11,353	13,475	13,046	3,758	171						54,311
45 to 49	11,492	11,349	13,061	12,467	11,161	4,651	169					64,350
50 to 54	10,097	10,842	13,224	12,540	10,610	12,303	2,870	65				72,551
55 to 59	7,225	9,234	11,997	12,205	10,359	11,872	4,061	524	10			67,487
60 to 64	3,262	6,037	7,406	7,080	6,108	6,716	1,412	512	107	4		38,644
65 & Up	<u>1,638</u>	<u>3,336</u>	<u>3,955</u>	<u>2,620</u>	<u>1,465</u>	<u>1,061</u>	<u>480</u>	<u>327</u>	<u>239</u>	<u>72</u>	<u>7</u>	<u>15,200</u>
Total Count	119,159	87,268	84,501	64,541	43,553	36,774	8,992	1,428	356	76	7	446,655

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	8,609	30,373										8,657
20 to 24	21,164	19,756										21,147
25 to 29	31,016	35,343	33,925									31,771
30 to 34	31,469	40,211	41,860	42,449								36,470
35 to 39	30,697	39,707	45,902	47,869	44,946							39,899
40 to 44	29,570	37,853	44,297	50,954	53,848	51,654						41,841
45 to 49	29,444	36,510	42,250	47,769	56,632	55,846	55,507					43,532
50 to 54	29,125	35,492	40,124	44,312	53,049	59,534	59,711	59,272				44,598
55 to 59	28,523	35,762	40,161	43,256	49,901	56,975	63,238	60,327	48,305			44,872
60 to 64	26,666	35,727	40,559	43,356	49,760	55,677	62,084	63,861	59,826	59,949		44,376
65 & Up	<u>18,900</u>	<u>29,474</u>	<u>35,668</u>	<u>39,580</u>	<u>45,595</u>	<u>52,749</u>	<u>65,068</u>	<u>78,826</u>	<u>82,829</u>	<u>89,185</u>	<u>91,067</u>	<u>38,202</u>
Avg. Annual Salary	28,940	37,224	42,111	46,064	52,558	57,304	61,883	65,782	74,946	87,646	91,067	40,992



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**Table C-9
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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	36	2										38
20 to 24	3,420	35										3,455
25 to 29	5,821	2,388	46									8,255
30 to 34	2,888	4,200	2,054	25								9,167
35 to 39	1,424	2,563	3,384	1,268	22							8,661
40 to 44	928	1,778	2,758	2,952	1,410	39						9,865
45 to 49	690	1,203	1,787	2,224	2,709	971	12					9,596
50 to 54	421	824	1,130	1,105	1,599	1,064	102					6,245
55 to 59	193	468	526	369	354	290	103	10				2,313
60 to 64	46	226	278	193	172	130	34	18	3			1,100
65 & Up	<u>10</u>	<u>51</u>	<u>82</u>	<u>61</u>	<u>39</u>	<u>23</u>	<u>11</u>	<u>8</u>	<u>2</u>			<u>287</u>
Total Count	15,877	13,738	12,045	8,197	6,305	2,517	262	36	5			58,982

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	21,865	41,878										22,919
20 to 24	33,690	40,154										33,756
25 to 29	39,131	46,227	53,665									41,264
30 to 34	40,420	53,128	60,882	64,005								50,891
35 to 39	39,478	53,938	65,225	67,133	65,484							57,932
40 to 44	40,203	53,065	65,416	70,828	75,872	83,010						64,002
45 to 49	41,833	52,451	63,778	69,235	77,071	79,486	64,173					67,387
50 to 54	46,636	54,811	62,492	66,429	75,477	75,248	78,541					66,867
55 to 59	47,321	53,917	61,843	61,332	66,519	69,522	75,436	95,573				61,376
60 to 64	37,998	51,572	59,286	57,260	64,123	70,575	68,150	77,508	120,485			59,285
65 & Up	<u>32,370</u>	<u>49,459</u>	<u>55,409</u>	<u>63,784</u>	<u>67,602</u>	<u>74,453</u>	<u>73,090</u>	<u>91,128</u>	<u>65,253</u>			<u>60,254</u>
Avg. Annual Salary	38,656	52,066	63,661	68,411	75,354	76,095	75,085	85,553	98,392			56,737



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Table C-10
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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	1	2										3
30 to 34		3	1									4
35 to 39			4	4								8
40 to 44			3	6	4							13
45 to 49				2	5	3	1					11
50 to 54		3	1	1	4	3						12
55 to 59			3		1							4
60 to 64						1						1
65 & Up												
Total Count	1	8	12	13	14	7	1					56

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	37,035	38,881										38,265
30 to 34		36,186	42,001									37,640
35 to 39			37,935	46,985								42,460
40 to 44			38,961	44,643	57,469							47,278
45 to 49				39,863	66,640	48,283	45,239					54,819
50 to 54		31,412	35,319	67,000	51,292	43,335						44,311
55 to 59			38,537		49,729							41,335
60 to 64						42,584						42,584
65 & Up												
Avg. Annual Salary	37,035	35,069	38,463	46,348	58,426	45,348	45,239					45,756



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Table C-11
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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	2											2
35 to 39	8	2	6									16
40 to 44	10	16	11	13								50
45 to 49	21	23	28	27	23							122
50 to 54	16	31	29	22	22	23	1					144
55 to 59	19	28	17	48	38	32	18					200
60 to 64	10	17	25	24	27	23	9					135
65 & Up	1	19	17	8	4	2						51
Total Count	87	136	133	142	114	80	28					720

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	77,131											77,131
35 to 39	124,660	107,051	123,360									121,972
40 to 44	135,861	136,748	131,133	140,353								136,273
45 to 49	123,392	134,451	141,096	141,454	144,848							137,582
50 to 54	141,360	135,653	141,536	143,703	144,656	143,297	146,080					141,371
55 to 59	131,254	133,822	138,536	141,212	144,194	142,705	142,946					139,965
60 to 64	129,925	144,662	145,785	144,739	145,490	143,665	142,981					143,676
65 & Up	<u>138,020</u>	<u>146,089</u>	<u>143,844</u>	<u>135,428</u>	<u>142,080</u>	<u>138,091</u>						<u>142,882</u>
Avg. Annual Salary	129,819	137,365	140,473	141,836	144,648	143,036	143,069					139,914



Table C-12
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
Elected Officers' Class: Legislators/Attorney/Cabinet 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	1											1
25 to 29	2											2
30 to 34	3	2										5
35 to 39	4	4	3	1								12
40 to 44	2	2	5	2								11
45 to 49	4	4	7	3	1							19
50 to 54	3	3	3	1	2	2						14
55 to 59	6	2	5	4	1	2	2					22
60 to 64	1	4	3	1	2	1		2				12
65 & Up	2		6	3	1					1		13
Total Count	28	21	32	15	7	5	2			1		111

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	29,205											29,205
25 to 29	29,205											29,205
30 to 34	22,080	29,697										25,127
35 to 39	30,617	29,697	29,697	29,697								30,004
40 to 44	31,537	79,335	69,851	29,678								57,305
45 to 49	29,574	29,697	47,475	73,549	29,697							43,145
50 to 54	26,124	29,697	29,697	29,697	141,556	154,140						62,689
55 to 59	27,992	24,583	49,552	97,460	154,140	154,140	154,140					73,883
60 to 64	33,377	60,808	71,178	29,697	91,919	154,140						71,485
65 & Up	<u>24,583</u>		<u>29,697</u>	<u>71,178</u>	<u>34,068</u>					<u>154,140</u>		<u>48,392</u>
Avg. Annual Salary	28,092	39,863	46,851	64,831	97,836	154,140	154,140			154,140		54,174



Table C-13
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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	1											1
25 to 29		1										1
30 to 34	9	7										16
35 to 39	14	9	8	2								33
40 to 44	21	14	7	9	4							55
45 to 49	29	22	14	9	8	9						91
50 to 54	31	19	20	12	10	18	8	3				121
55 to 59	22	23	36	19	19	17	6	1				143
60 to 64	21	33	30	18	22	15	10	4				153
65 & Up	<u>23</u>	<u>52</u>	<u>37</u>	<u>26</u>	<u>15</u>	<u>14</u>	<u>4</u>			<u>1</u>		<u>172</u>
Total Count	171	180	152	95	78	73	28	8	1			786

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	13,671											13,671
25 to 29		200										200
30 to 34	33,869	36,756										35,132
35 to 39	29,086	26,933	64,130	31,010								37,111
40 to 44	39,251	61,724	66,017	42,132	72,962							51,301
45 to 49	35,490	43,786	56,405	52,452	62,828	100,377						51,211
50 to 54	32,328	47,260	50,801	85,617	78,627	99,917	102,729	100,873				63,246
55 to 59	38,830	38,548	53,162	47,224	61,425	100,245	113,301	95,361				57,331
60 to 64	29,813	46,592	57,159	58,235	48,419	61,791	78,118	75,809				52,308
65 & Up	<u>22,782</u>	<u>35,894</u>	<u>45,327</u>	<u>56,621</u>	<u>43,756</u>	<u>78,532</u>	<u>43,641</u>			<u>3,600</u>		<u>43,451</u>
Avg. Annual Salary	32,665	41,755	53,201	56,403	57,299	88,115	87,763	87,652	3,600			51,667



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Table C-14
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
Senior Management Service 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	1											1
25 to 29	442	6										448
30 to 34	382	200	13									595
35 to 39	88	152	157	45	1							443
40 to 44	55	91	167	207	58	11						589
45 to 49	53	81	133	192	263	109	7					838
50 to 54	56	80	105	160	249	340	76	2				1,068
55 to 59	51	66	101	133	176	269	88	5				889
60 to 64	20	56	74	85	101	123	30	17	2			508
65 & Up	<u>5</u>	<u>32</u>	<u>42</u>	<u>33</u>	<u>32</u>	<u>20</u>	<u>10</u>	<u>8</u>	<u>3</u>		1	<u>186</u>
Total Count	1,153	764	792	855	880	872	211	32	5		1	5,565

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	36,136											36,136
25 to 29	43,473	54,875										43,625
30 to 34	47,098	58,011	69,352									51,252
35 to 39	57,895	63,449	73,373	80,485	96,472							67,668
40 to 44	78,063	73,990	81,288	85,734	84,799	82,889						81,798
45 to 49	84,086	82,546	94,493	89,951	97,315	95,455	97,650					92,677
50 to 54	101,007	93,852	94,323	95,839	102,559	107,427	97,508	69,458				101,137
55 to 59	102,135	103,590	95,037	97,345	105,186	107,911	120,500	130,175				105,047
60 to 64	117,272	106,698	98,242	104,011	111,870	109,335	132,124	125,779	124,246			109,309
65 & Up	<u>150,813</u>	<u>120,680</u>	<u>119,554</u>	<u>115,029</u>	<u>110,836</u>	<u>147,009</u>	<u>114,508</u>	<u>198,345</u>	<u>109,867</u>		<u>387,620</u>	<u>125,640</u>
Avg. Annual Salary	56,420	77,457	88,835	93,050	101,709	106,947	112,829	141,087	115,618		387,620	87,366



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Table C-15
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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										1	12	2	15
Total Count										1	12	2	15

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									91,330	111,779	140,722		114,275
Avg. Annual Salary									91,330	111,779	140,722		114,275



Table C-16
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
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
60 to 64							3	9				12
65 & Up								6				6
Total Count							3	16				19

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								97,393				97,393
60 to 64							83,153	107,348				101,299
65 & Up								97,833				97,833
Avg. Annual Salary							83,153	103,158				99,999



Table C-17
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2015
Grand Totals of All Active Participants

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	952	4										956
20 to 24	15,978	196										16,174
25 to 29	33,193	7,959	263									41,415
30 to 34	22,127	21,110	7,777	193								51,207
35 to 39	15,234	15,424	19,019	5,735	115							55,527
40 to 44	13,524	13,254	16,426	16,235	5,234	221						64,894
45 to 49	12,289	12,682	15,030	14,924	14,170	5,743	189					75,027
50 to 54	10,624	11,802	14,512	13,841	12,496	13,753	3,057	70				80,155
55 to 59	7,516	9,821	12,685	12,778	10,948	12,482	4,279	540	10			71,059
60 to 64	3,360	6,373	7,816	7,401	6,432	7,012	1,504	551	112	4		40,565
65 & Up	<u>1,679</u>	<u>3,490</u>	<u>4,139</u>	<u>2,751</u>	<u>1,556</u>	<u>1,120</u>	<u>511</u>	<u>343</u>	<u>246</u>	<u>85</u>	<u>10</u>	<u>15,930</u>
Total Count	136,476	102,115	97,667	73,858	50,951	40,331	9,540	1,504	368	89	10	512,909

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	9,111	36,126										9,224
20 to 24	23,846	23,399										23,841
25 to 29	32,605	38,620	37,378									33,791
30 to 34	32,911	42,947	46,930	45,241								39,224
35 to 39	31,723	42,305	49,595	52,375	49,323							42,953
40 to 44	30,591	40,293	48,293	55,073	60,142	58,742						45,657
45 to 49	30,550	38,504	45,471	51,687	61,443	60,661	57,564					47,296
50 to 54	30,375	37,516	42,473	46,868	57,101	62,137	61,419	61,346				47,292
55 to 59	29,795	37,367	41,669	44,731	51,684	58,658	65,165	61,691	48,305			46,464
60 to 64	27,690	37,275	42,184	44,778	51,530	57,220	64,479	66,304	62,601	59,949		45,979
65 & Up	<u>19,504</u>	<u>31,333</u>	<u>37,432</u>	<u>41,496</u>	<u>47,711</u>	<u>55,352</u>	<u>66,425</u>	<u>81,900</u>	<u>82,728</u>	<u>93,139</u>	<u>130,653</u>	<u>40,115</u>
Avg. Annual Salary	30,372	39,663	45,300	49,289	56,449	59,788	63,774	67,974	75,667	91,647	130,653	43,468



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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, 2015. The contributions shown beginning with plan year 2016-2017 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 2015-2016 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, 2015. 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 UAL payment / (available surplus) for the next three plan years based on Florida law. The estimates are projections of our July 1, 2015 valuation results, and assume experience occurs as stated in our July 1, 2015 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 Pension Plan
Projection of Retirement Costs (Excluding Member Contributions)
July 1, 2015
Based on Contribution Rates Before Blending

(All Amounts in Millions)

	2015 <u>-2016</u>	2016 <u>-2017</u>	2017 <u>-2018</u>	2018 <u>-2019</u>	2019 <u>-2020</u>
A. Employer Normal Cost ¹	\$1,031	\$1,079	\$1,115	\$1,150	\$1,189
B. UAL Payment / (Surplus Utilization) ²	<u>\$1,364</u>	<u>\$1,454</u> ²	<u>\$1,501</u> ²	<u>\$1,550</u> ²	<u>\$1,600</u> ²
C. Total	\$2,395	\$2,533	\$2,616	\$2,700	\$2,789

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 Pension Plan
Funding of UAL / (Surplus) by Duration of Amortization
July 1, 2015
 (\$ in thousands)

	Years to Amortize UAL							
	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class --			Senior Management	DROP
				Judicial	Leg-Atty-Cab	Local		
Valuation Date Outstanding UAL Balance / (Surplus)	\$11,808,459	\$5,668,445	\$11,715	\$408,376	\$45,622	\$297,389	\$1,675,489	\$2,437,902
UAL Cost / (Savings) Rate (see Table 4-11)	3.37%	10.54%	32.30%	25.42%	44.61%	44.52%	21.00%	7.10%
Projected UAL Payroll PY 2016 - 2017 ¹	\$22,161,484	\$3,584,561	\$2,715	\$107,248	\$6,820	\$45,169	\$539,047	\$2,320,464
Annual Payment / (Savings) for PY 2016 - 2017	\$747,284	\$377,787	\$877	\$27,258	\$3,043	\$20,107	\$113,179	\$164,667
Amortization Period Calculated Assuming								
Level Dollar	NA ²	NA ²	35	NA ²	NA ²	NA ²	NA ²	NA ²
Level Percent of Payroll	26	23	18	23	23	22	23	22

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 Pension Plan
Projected Annual Payments of UAL Amortization Bases¹
July 1, 2015

Projected PY 2016-2017 and Forward Based on 07/01/2015 Valuation Results and 07/01/2015 Assets
 (All Amounts in Millions)

	<u>2016 - 17</u>	<u>2017 - 18</u>	<u>2018 - 19</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
<u>UAL Bases</u>			
3 12% Increase in Special Risk benefits (in pay status before 07/01/2000) ³	\$28.8	\$29.8	\$30.7
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	(\$36.4)	(\$37.6)	(\$38.8)
6 1998 - 2003 Experience Study Assumption Changes ⁵	(\$271.9)	(\$280.8)	(\$289.9)
7 2003 - 2008 Experience Study Assumption Changes	\$462.3	\$477.3	\$492.9
8 2009 Experience (Gain)/Loss	\$1,450.8	\$1,497.9	\$1,546.6
9 Unrecognized (Gains)/Losses while in Surplus	(\$424.4)	(\$438.2)	(\$452.4)
10 2009 Plan Change (House Bill 479)	(\$87.7)	(\$90.6)	(\$93.5)
11 2010 Experience (Gain)/Loss	\$76.6	\$79.1	\$81.7
12 2010 Plan Change (Senate Bill 2100)	(\$83.9)	(\$86.7)	(\$89.5)
13 2011 Experience (Gain)/Loss	\$182.0	\$187.9	\$194.1
14 2012 Experience (Gain)/Loss	(\$7.1)	(\$7.4)	(\$7.6)
15 2013 Experience (Gain)/Loss	\$175.8	\$181.6	\$187.5
16 2008 - 2013 Experience Study Assumption/Method Changes	\$123.4	\$127.4	\$131.6
17 2014 Experience (Gain)/Loss	(\$167.4)	(\$172.8)	(\$178.4)
18 2015 Experience (Gain)/Loss	<u>\$33.5</u>	<u>\$34.6</u>	<u>\$35.7</u>
Subtotal [(3) through (18)]	\$1,454.2	\$1,501.3	\$1,550.5
19 Across the Board Rate Reduction of 0% ⁶	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total [Subtotal + (19)]	\$1,454.2	\$1,501.3	\$1,550.5
20 UAL payment / (Surplus Available) [(1) + Total] =	\$1,454.2	\$1,501.3	\$1,550.5

¹ Numbers exclude contributions to the Investment Plan.

² Projected surplus based on 07/01/2015 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 0.80% 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 0.17% 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 2014 actuarial valuation to the 2015 actuarial valuation, while the last table cross-references the required sections of 112.64 with this report.

Table E-1
Florida Retirement System Pension Plan
One-Year Comparisons

1. Annual Rate of Investment Return on Actuarial Value of Assets			
	Period Ending	Actual	Assumed
	June 30, 2013	8.02%	7.75%
	June 30, 2014	9.95%	7.75%
	June 30, 2015	8.62%	7.65%

2. Annual Rate of Payroll Growth			
	Period Ending	Actual ¹	Assumed ¹
	June 30, 2013	0.03%	4.00%
	June 30, 2014	0.78%	4.00%
	June 30, 2015	2.28%	3.25%

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			
2013	3.2%	3.7%	5.85%
2014	5.7%	5.2%	5.85%
2015	4.8%	5.9%	4.59%

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 of salary increase vary by age and service. Single Assumed rate shown above reflects the population and assumptions adopted with each experience study. The most recent experience study was for the period July 1, 2008 through June 30, 2013.

Table E-2
Florida Retirement System Pension Plan
Data Reconciliation

	Active Participants	Disabled Participants	Retired Participants and Beneficiaries	DROP	Total
Number reported as of July 1, 2014	511,751	13,859	346,373	38,055	910,038
New Entrants ¹	58,404	0	0	0	58,404
Exits from Active Status ² or DROP	(47,808)	381	19,821	(12,039)	(39,645)
DROP Entry	(9,438)	0	0	9,438	0
Cessation of benefit payments	NA	(649)	(12,602)	0	(13,251)
Other reported status changes, including changes from Terminated Vested status	0	239	8,006	1,082	9,327
Number reported as of July 1, 2015	512,909	13,830	361,598	36,536	924,873 ³

¹ Includes rehires

² Includes retirement, vested termination, IP transfer, non-vested termination and death

³ The total count excludes 106,514 Terminated Vested participants

Table E-3
Florida Retirement System Pension Plan
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)?	2-2
1.003 (3a)	Is the "statement value" breakdown included?	No
1.003 (3a)	Is the derivation of AVA included?	2-3
1.003 (8)	Are administrative expenses being paid on a current basis?	2-1
	Asset reconciliation, including:	Exhibit
1.003 (4j)	- contributions by source	2-1
1.003 (4j)	- interest and dividends	2-1
1.003 (4j)	- realized gains / (losses)	2-1
1.003 (4j)	- unrealized appreciation	2-1
1.003 (4j)	- pension payments	2-1
1.003 (4j)	- contribution refunds	2-1
1.003 (4j)	- expenses	2-1
1.003 (4j)	- other receipts (identified)	2-1 (transfer)
1.003 (4j)	- other disbursements (identified)	2-1 (IP)

5 UAL & Amortization Schedule:		Exhibit
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
		Section 4, Executive Summary
1.003 (3d)	Is a description of actions taken to reduce the UAL included?	
	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, 2-3
	- 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
	- Actual contributions made by: plan sponsor, members, other	4-12
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.



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December 2, 2015

Via E-Mail

Mr. Dan Drake
State Retirement Director
Division of Retirement

Re: **Blended Proposed Statutory Rates for the 2016-2017 Plan Year Reflecting a Uniform UAL Rate for All Membership Classes and DROP**

Dear Dan:

As requested, we have calculated the uniform or “blended” proposed statutory employer rates for the 2016-2017 plan year based on the statutory contributions for the Investment Plan and the actuarially calculated 2016-2017 rates for the defined benefit Pension Plan (PP), as specified in the FRS 2015 Actuarial Valuation Report. The blended rates reflect a uniform Unfunded Actuarial Liability (UAL) Contribution Rate for all payroll bases on which the Blended UAL Contribution Rate is assessed.

Analysis

We determined the uniform blended 2016-2017 employer rate for each membership class and subclass of the Florida Retirement System by projecting contributions for both the Pension Plan (PP) and the Investment Plan (IP). We did this by dividing the projected combined amount that would be contributed for both the Pension Plan and the Investment Plan by the total projected combined payroll for both plans. The uniform blended rate calculation assumes plan year 2016-2017 contributions for the Pension Plan will be made at the actuarially calculated rate levels. The actuarially calculated rate levels are based on the July 1, 2015 actuarial valuation of the Florida Retirement System Pension Plan, as presented in Table 4-11 of the FRS 2015 Actuarial Valuation Report. The Investment Plan rates are the sum of the rates in Sections 121.72 and 121.73 of Florida Statutes and assume those rates continue in effect during plan year 2016-2017. The employer contribution rates shown in the attached table are net of the 3% employee contribution rate.

The payroll for some employee groups is subject to only the UAL Cost component of the Pension Plan’s contribution rate (e.g. participants in SUSORP, SMSOAP, and SCCORP, and reemployed members not eligible for Renewed Program membership). The payroll for those employee groups is included in the calculation of the Blended UAL Contribution Rate, but is excluded from the calculation of the Blended Normal Cost Contribution Rate.

Based on the data provided to us for this study, as of July 1, 2015 Investment Plan payroll comprised between 16% and 17% of total payroll. On a headcount basis, IP members constitute approximately 18% of active FRS membership.

Results

Table I shows the results of our study based on actual levels of participation in the Pension Plan and the Investment Plan as of July 1, 2015, projected to plan year 2016-2017 using the assumption that recent trends in IP participation will continue. Total payroll is projected to increase 3.25% from plan year 2015-2016 to plan year 2016-2017, in line with the long-term payroll growth assumption in the July 1, 2015 actuarial valuation. The results in Table I are based on an assumption that the IP payroll for the three largest membership classes will increase as a percentage of total payroll during plan year 2015-2016 (due to salary inflation and membership growth) at a rate proportionate to the actual rate of change experienced during the plan year ending June 30, 2015.¹ In total, this leads to an assumption that the projected plan year 2016-2017 IP payroll is approximately 4.7% greater than the plan year 2015-2016 IP payroll. The IP payroll is projected to remain between 16% and 17% of total payroll in plan year 2016-2017.

Section A of the table includes the Normal Cost Rates as of July 1, 2015 of the Pension Plan. Section A does not include the UAL Cost. UAL Cost Rates are applied to a larger total payroll than the Normal Cost Rates and are developed in a later section. Section A, line 3 shows the total employer Normal Cost of the Pension Plan as the product of Normal Cost Rates and projected Normal Cost payroll.

Similarly, Section B calculates the total employer cost of the Investment Plan as the product of applicable employer contribution rates in effect since July 1, 2012 and the projected IP payroll. IP payroll is projected as described above.

Section C of the table shows the sum of the Pension Plan employer Normal Cost and IP employer cost as dollars and as a percentage of total projected combined payroll (PP projected Normal Cost payroll plus IP projected payroll).

Section D of the table shows the UAL Cost as of July 1, 2015 of the Pension Plan, as shown in Table 4-11 of the FRS 2015 Actuarial Valuation Report.

Section E shows the projected payroll of the Investment Plan. There is no UAL Cost attributable to the Investment Plan.

Section F calculates the "Blended" UAL Cost as dollars and as a percentage of total payroll (PP projected UAL payroll plus IP projected payroll).

Section G shows the final Blended Uniform Contribution Rates as the sum of the "Blended" Normal Cost Contribution Rates from Line (C3) and the "Blended" UAL Contribution Rates from Line (F3). The employers of employee groups subject to only the UAL Contribution Rate would contribute the "Blended" UAL Contribution Rates shown in Line (G2) of the table on applicable payroll. The Total Adjusted Contribution Rates shown in Line (G3) of the table will be applied to all other payroll subject to employer contributions.

¹ The three largest membership classes are the Regular, Special Risk and Senior Management Service Classes. For the remaining membership classes, IP payroll is projected to increase 3.25% from plan year 2015-2016 to plan year 2016-2017, in line with the long-term payroll growth assumption in the actuarial valuation.

The contribution rates shown in Table I exclude the 0.03% contribution rate for IP administration and education (applied to all classes except DROP) and the 1.66% contribution rate for the Health Insurance Subsidy (HIS), which apply across the board to the Pension Plan and the Investment Plan.

The calculations are based on census and payroll data provided to us by the Division of Retirement for the July 1, 2015 actuarial valuation. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. These calculations are based on the Ultimate Entry Age actuarial cost allocation method, as described in the FRS 2015 Actuarial Valuation Report for use in developing 2016-2017 actuarially calculated contribution rates for the Pension Plan.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Except where otherwise noted in this letter, this analysis is based on the Pension Plan provisions, actuarial methods and actuarial assumptions as summarized in the FRS 2015 Actuarial Valuation Report as published on December 1, 2015. Further, the data used in these calculations were based on Pension Plan data as summarized in the FRS 2015 Actuarial Valuation Report and Investment Plan census data as of July 1, 2015 as provided to us by the Division of Retirement. The results of our study depend on future experience conforming to those actuarial assumptions discussed earlier in this letter. Future actuarial measurements may differ significantly from the current measurements presented in this analysis 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.

Milliman's work product was prepared exclusively for the internal business use of Florida Department of Management Services, Division of Retirement. 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.



Mr. Dan Drake
Division of Retirement
December 2, 2015
Page 4

(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.

We are consulting actuaries for Milliman, Inc. We are also members of the American Academy of Actuaries, and meet their Qualification Standards to render the actuarial opinion contained herein.

Please call if you would like to further discuss this project.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Matt Larrabee'.

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Daniel Wade'.

Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Kathryn Hunter'.

Kathryn Hunter, ASA, MAAA
Consulting Actuary

Enclosures

FLORIDA RETIREMENT SYSTEM
FISCAL IMPACT ANALYSIS

Proposed Statutory Blended Normal Cost Plus UAL Rates for 2016-2017 Plan Year
Please see the attached letter for details regarding data, assumptions, methodology, and plan provisions used
(Dollars in Thousands)

<u>Blended Normal Cost Contribution Rates</u>	<u>Regular</u>	<u>Special Risk</u>	<u>Special Risk Administrative</u>	<u>Judicial</u>	<u>-----Elected Officers' Class----- Leg-Atty-Cab</u>	<u>Local</u>	<u>Senior Management</u>	<u>Composite (excluding DROP)</u>	<u>DROP</u>	<u>Composite (including DROP)</u>
A. Defined Benefit Pension Plan Normal Cost										
1. Employer Cost										
a. Normal Cost Rate ¹	2.84%	11.17%	3.19%	11.75%	6.58%	8.47%	4.18%	4.17%	4.17%	4.17%
b. Rate Reduction Techniques	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
c. Total Adjusted Contribution Rate ² -PYE 2017	2.84%	11.17%	3.19%	11.75%	6.58%	8.47%	4.18%	4.17%	4.17%	4.17%
2. Projected Payroll	\$19,242,767	\$3,557,412	\$2,715	\$106,095	\$6,354	\$42,341	\$510,388	\$23,468,072	\$2,320,464	\$25,788,536
3. Total Employer Normal Cost [(1c) x (2)] -PYE 2017	\$546,495	\$397,363	\$87	\$12,466	\$418	\$3,586	\$21,334	\$981,749	\$96,763	\$1,078,512
B. Investment Plan (IP) Employer Cost										
1. Employer Rates effective since July 1, 2012 (Sec 121.72 and Sec 121.73)	3.55%	12.33%	5.40%	10.96%	6.79%	8.75%	4.93%	4.76%	0.00%	4.76%
2. Projected Payroll	\$4,226,371	\$653,267	\$1,188	\$9,771	\$2,192	\$17,279	\$182,231	\$5,092,299	\$0	\$5,092,299
3. Total Employer Cost [(1) x (2)] -PYE 2017	\$150,036	\$80,548	\$64	\$1,071	\$149	\$1,512	\$8,984	\$242,364	\$0	\$242,364
C. Total System Normal Cost (Pension Plan + Investment Plan)										
1. Total Normal Cost Contribution [(A3) + (B3)]	\$696,531	\$477,911	\$151	\$13,537	\$567	\$5,098	\$30,318	\$1,224,113	\$96,763	\$1,320,876
2. Total System Projected Payroll [(A2) + (B2)]	\$23,469,138	\$4,210,679	\$3,903	\$115,866	\$8,546	\$59,620	\$692,619	\$28,560,371	\$2,320,464	\$30,880,835
3. "Blended" Normal Cost Contribution Rate As a Percentage of Total Payroll [(C1) / (C2)]	2.97%	11.35%	3.87%	11.68%	6.63%	8.55%	4.38%	4.29%	4.17%	4.28%

¹ As reported in the July 1, 2015 valuation - Table 4-11

² Rates shown do not include the HIS contribution rate or IP administrative assessment.

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.

FLORIDA RETIREMENT SYSTEM
FISCAL IMPACT ANALYSIS

Proposed Statutory Blended Normal Cost Plus UAL Rates for 2016-2017 Plan Year
Please see the attached letter for details regarding data, assumptions, methodology, and plan provisions used
(Dollars in Thousands)

	Regular	Special Risk	Special Risk Administrative	Judicial	-----Elected Officers' Class----- Leg-Atty-Cab	Local	Senior Management	Composite (excluding DROP)	DROP	Composite (including DROP)
Blended UAL Contribution Rates										
D. Defined Benefit Pension Plan UAL Cost										
1. Employer UAL Cost ^{1 & 2}	3.37%	10.54%	32.30%	25.42%	44.61%	44.52%	21.00%	4.87%	7.10%	5.06%
2. Projected Payroll	\$22,083,499	\$3,595,469	\$2,715	\$107,248	\$6,820	\$45,169	\$535,948	\$26,376,868	\$2,320,464	\$28,697,332
3. Total Employer UAL Cost [(1) x (2)] -PYE 2017	\$744,214	\$378,962	\$877	\$27,262	\$3,042	\$20,109	\$112,549	\$1,287,015	\$164,753	\$1,451,768
E. Investment Plan Projected Payroll	\$4,226,371	\$653,267	\$1,188	\$9,771	\$2,192	\$17,279	\$182,231	\$5,092,299	\$0	\$5,092,299
F. Total System UAL Cost (Pension Plan + Investment Plan)										
1. Total UAL Contribution [(D3)]	\$744,214	\$378,962	\$877	\$27,262	\$3,042	\$20,109	\$112,549	\$1,287,015	\$164,753	\$1,451,768
2. Total System Projected Payroll [(D2) + (E)]	\$26,309,870	\$4,248,736	\$3,903	\$117,019	\$9,012	\$62,448	\$718,179	\$31,469,167	\$2,320,464	\$33,789,631
3. "Blended" UAL Contribution Rate As a Percentage of Total Payroll [(F1) / (F2)]	2.83%	8.92%	22.47%	23.30%	33.75%	32.20%	15.67%	4.09%	7.10%	4.30%
Blended Uniform Contribution Rates ³										
G: Total Employer Contribution Rate (Pension Plan + Investment Plan)										
1. "Blended" Normal Cost Contribution Rate [(C3)]	2.97%	11.35%	3.87%	11.68%	6.63%	8.55%	4.38%	4.29%	4.17%	4.28%
2. "Blended" UAL Contribution Rates [(F3)]	<u>2.83%</u>	<u>8.92%</u>	<u>22.47%</u>	<u>23.30%</u>	<u>33.75%</u>	<u>32.20%</u>	<u>15.67%</u>	<u>4.09%</u>	<u>7.10%</u>	<u>4.30%</u>
3. Total Adjusted Contribution Rate ² -PYE 2017 [(G1) + (G2)]	5.80%	20.27%	26.34%	34.98%	40.38%	40.75%	20.05%	8.38%	11.27%	8.58%

¹ As reported in the July 1, 2015 valuation - Table 4-11

² Rates shown do not include the HIS contribution rate or IP administrative assessment.

³ Employers of employee groups subject to only the UAL contribution rate will pay the rates shown in line (G2).

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