

## Public Agenda Item #4

# Review and Discussion of ERS Retirement Plans and Actuarial Valuation Reports for Funding as of August 31, 2016

December 1, 2016

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# Actuarial Valuations of the ERS Retirement Funds as of August 31, 2016 December 1, 2016

Joe Newton, FSA, EA, MAAA

**GRS**

**Gabriel Roeder Smith & Company**  
Consultants & Actuaries  
[www.gabrielroeder.com](http://www.gabrielroeder.com)



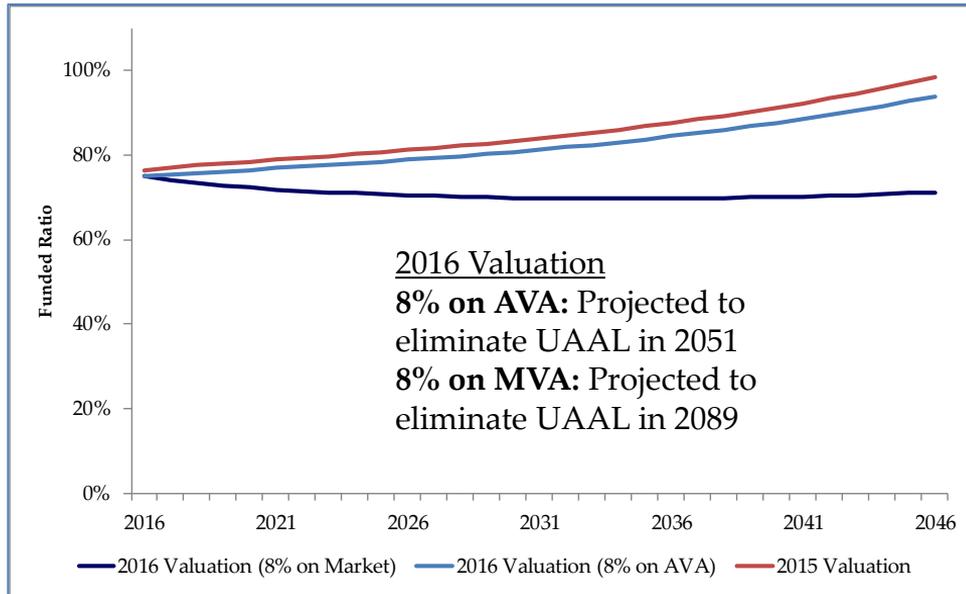
# Agenda

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- ◆ Purpose of Actuarial Valuation
- ◆ Impact of Asset Returns
- ◆ ERS Funding Valuation Results
- ◆ LECOSRF and JRS2 Funding Valuation Results
- ◆ Accounting Results at August 31, 2016

# Where are we headed now?

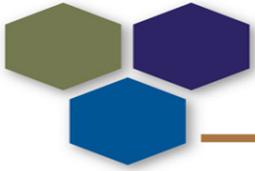
- ◆ ERS projections stepped back slightly
  - ▶ Still on a path to eliminating unfunded liability
- ◆ Short term decrease in 2016 projection from deferred assets losses and negative amortization before trending upward



## 2015 Valuation

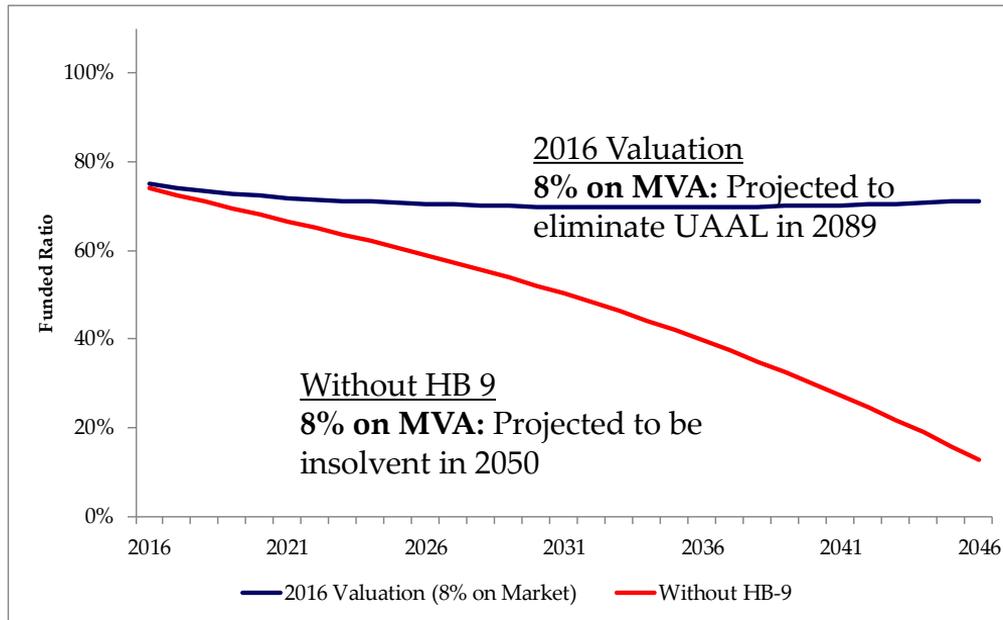
**8% on AVA:** Projected to eliminate UAAL in 2048

*Projections assume that all assumptions are met, including an 8% return on the market value of assets (unless otherwise noted), and future contributions continue at current levels.*



# 2015 Legislative Impact

- Without contribution increases resulting from HB 9, ERS plan would be projected to be insolvent in 2050 on a market value basis



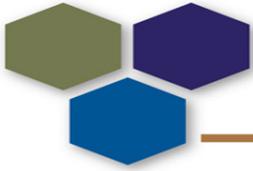
*Projections assume that all assumptions are met, including an 8% return on the market value of assets (unless otherwise noted), and future contributions continue at current levels (unless otherwise noted).*



# Purpose of Actuarial Valuation

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- ◆ Prepared as of August 31, 2016 using member data, financial data, benefit and contribution provisions, actuarial assumptions and methods as of that date
- ◆ Purposes:
  - Measure the actuarial liabilities and funding levels
  - Determine adequacy of current statutory contributions
  - Provide other information for reporting
    - GASB 67/68, Consolidated Annual Financial Report
  - Explain changes in actuarial condition of the plans
  - Track changes over time
  - Analyze future outlook



# Impact of Asset Returns



# Asset Experience

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- ◆ Asset returns
  - ▶ Market Value: 5.3%
  - ▶ Actuarial (or smoothed) Value: 5.9%
    - Less than 8.0%, thus creates a loss on the unfunded liability
- ◆ Losses on the Market Value during the current year in addition to outstanding unrecognized losses from prior valuation
  - ▶ \$2.1 billion outstanding loss for ERS in 2016, versus
  - ▶ \$1.9 billion outstanding loss for ERS in 2015

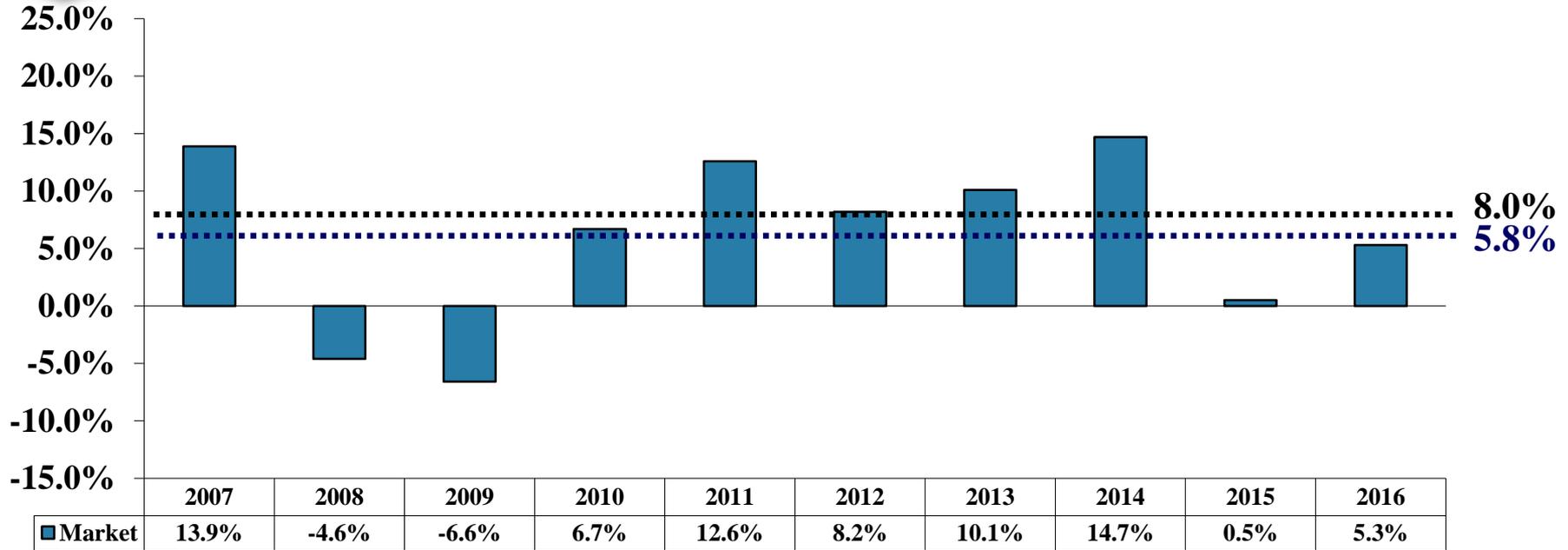


# Asset Experience

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- ◆ Actual investment returns delayed the projected time until full funding
  - ▶ 2089, assuming 8% market returns
  - ▶ 2051, assuming 8% on actuarial (smoothed) returns
    - 8% market returns plus additional returns of \$2.1 billion (approximately 8.50%)

# Estimated Yields Based on Market Value of Assets



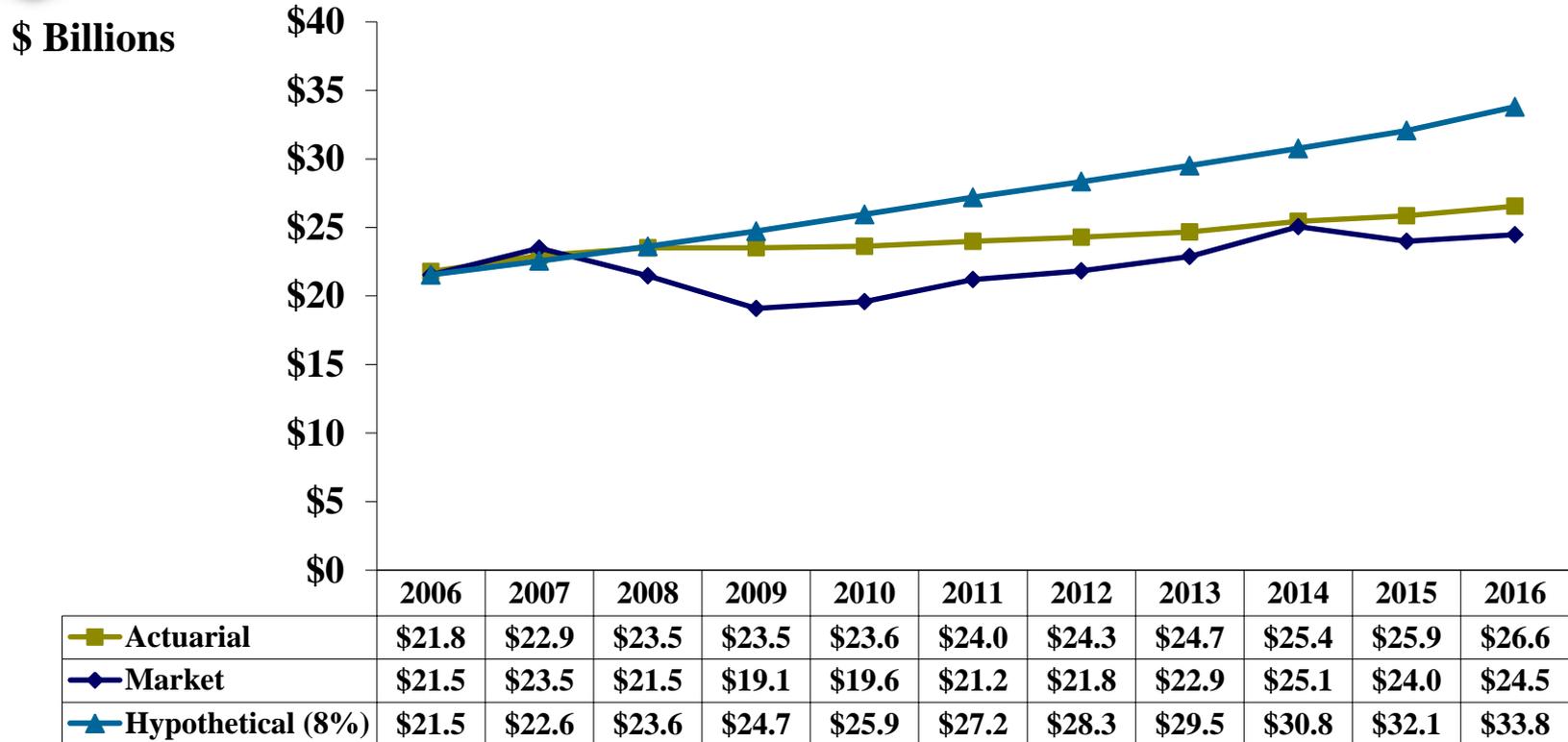
7.7% average compound return (on market value) over last 5 years.

5.8% average compound return (on market value) over last 10 years.

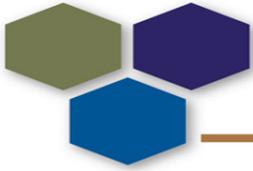
7.4% average compound return (on market value) over last 25 years.



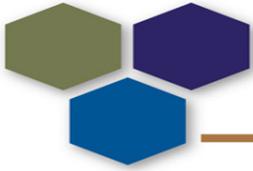
# Actuarial, Market and Hypothetical\* Values of Assets for ERS



\* Hypothetical uses 2006 market value and projects forward using actual cash flows and 8.0% investment returns



ERS  
Funding Valuation Results  
at August 31, 2016



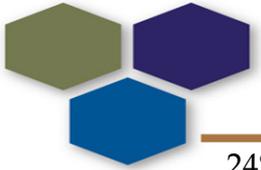
# Funded Status

(\$ in millions)

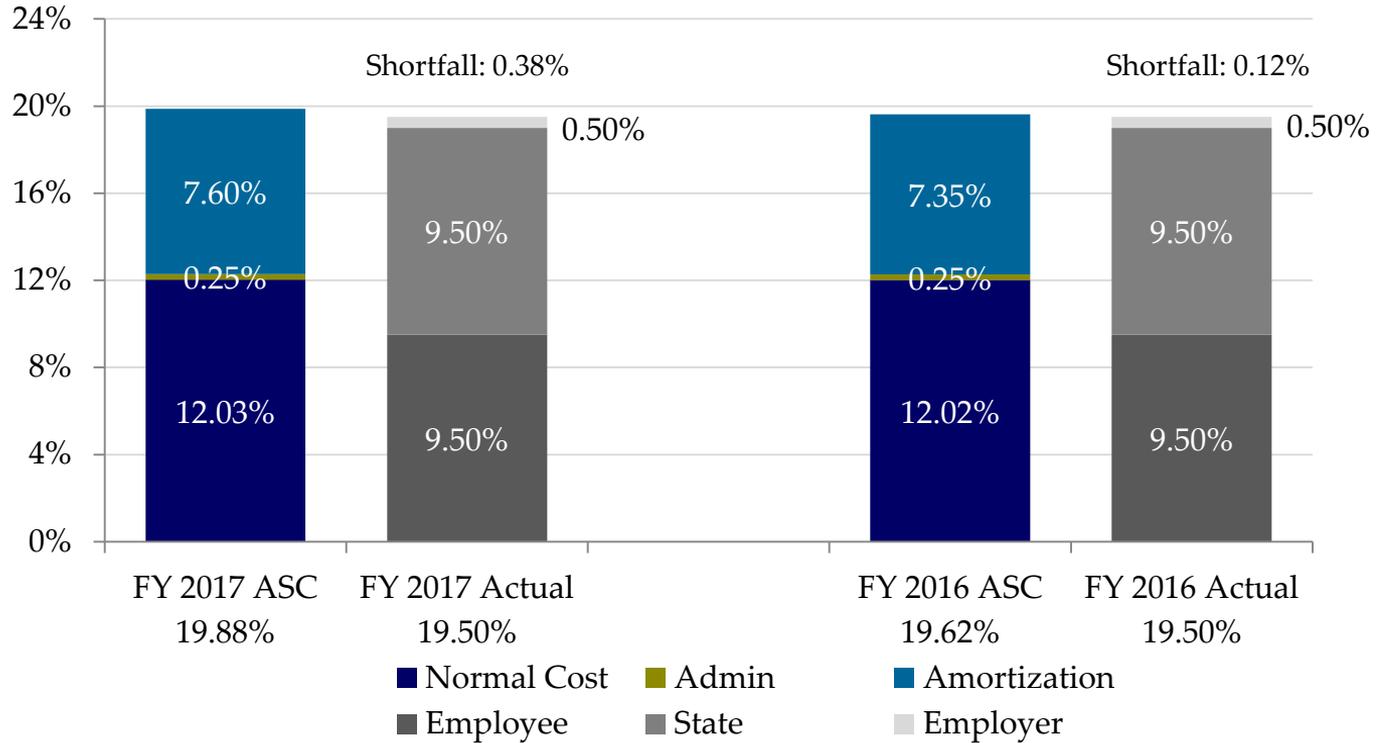
<b>Actuarial Valuation as of August 31, 2016</b>	
	<b>ERS</b>
Actuarial Accrued Liability	\$35,303
Actuarial Value of Assets	<u>26,557</u>
Unfunded Accrued Liability	\$8,746
Funded Ratio	75.2%
Funding Period	35

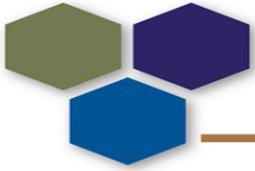
  

<b>Actuarial Valuation as of August 31, 2015</b>	
	<b>ERS</b>
Actuarial Accrued Liability	\$33,868
Actuarial Value of Assets	<u>25,851</u>
Unfunded Accrued Liability	\$8,018
Funded Ratio	76.3%
Funding Period	33

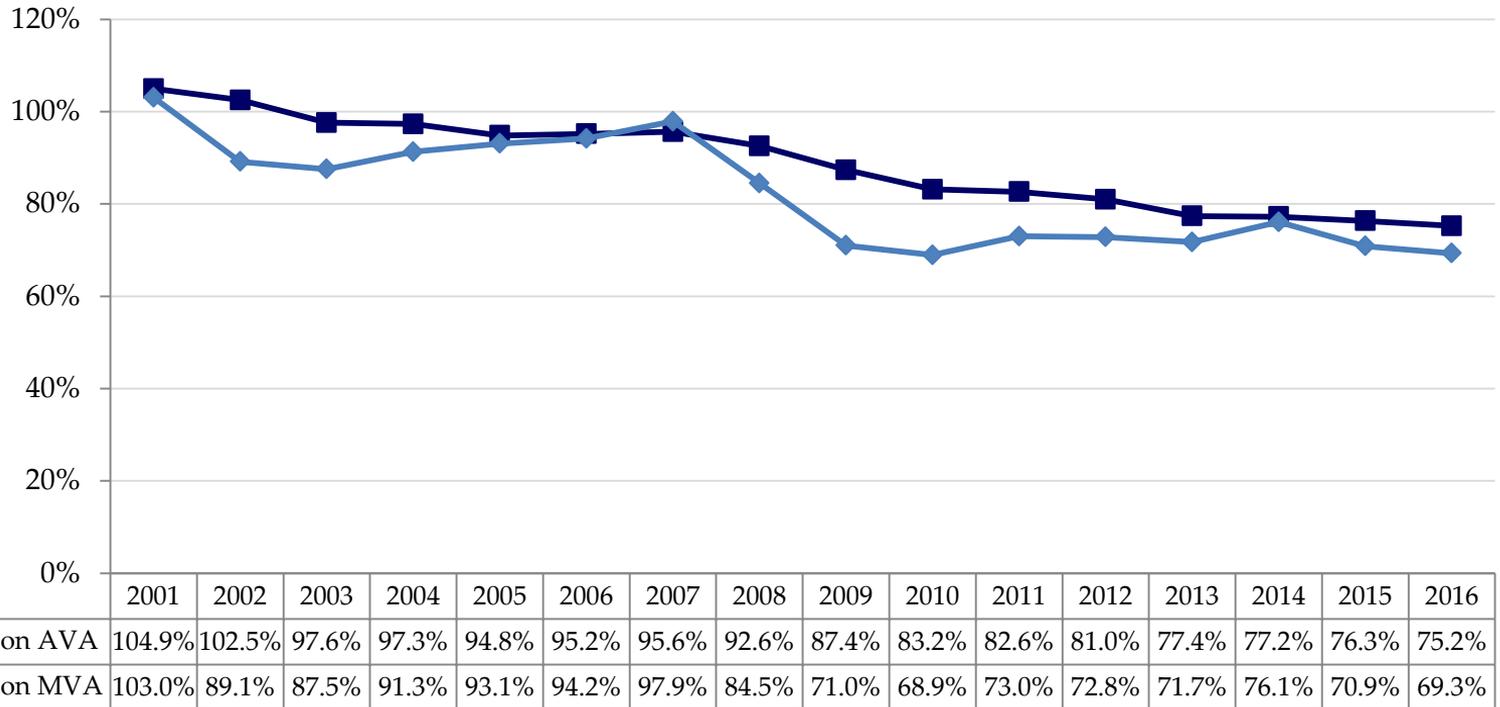


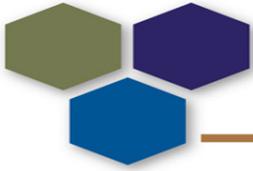
# Actuarially Sound Contribution (ERS)





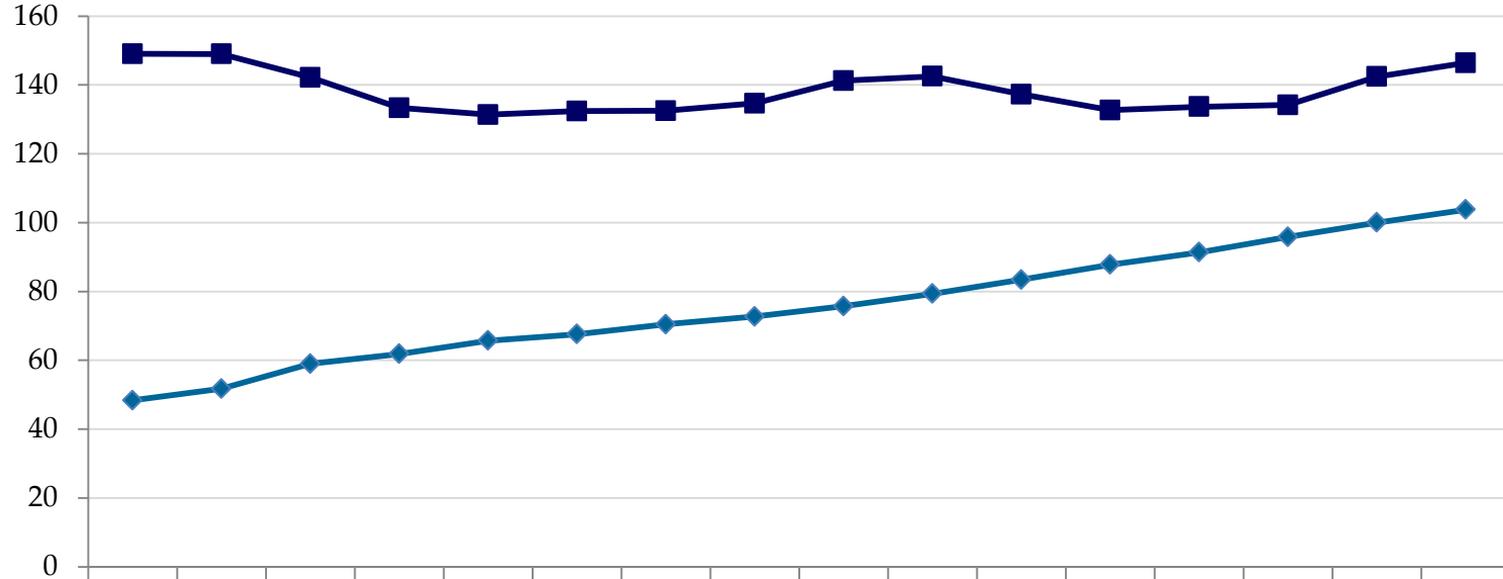
# Funded Ratio History (ERS)





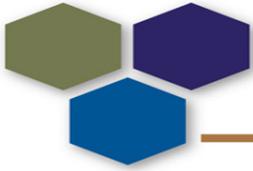
# Membership (ERS)

(counts in 1000's)



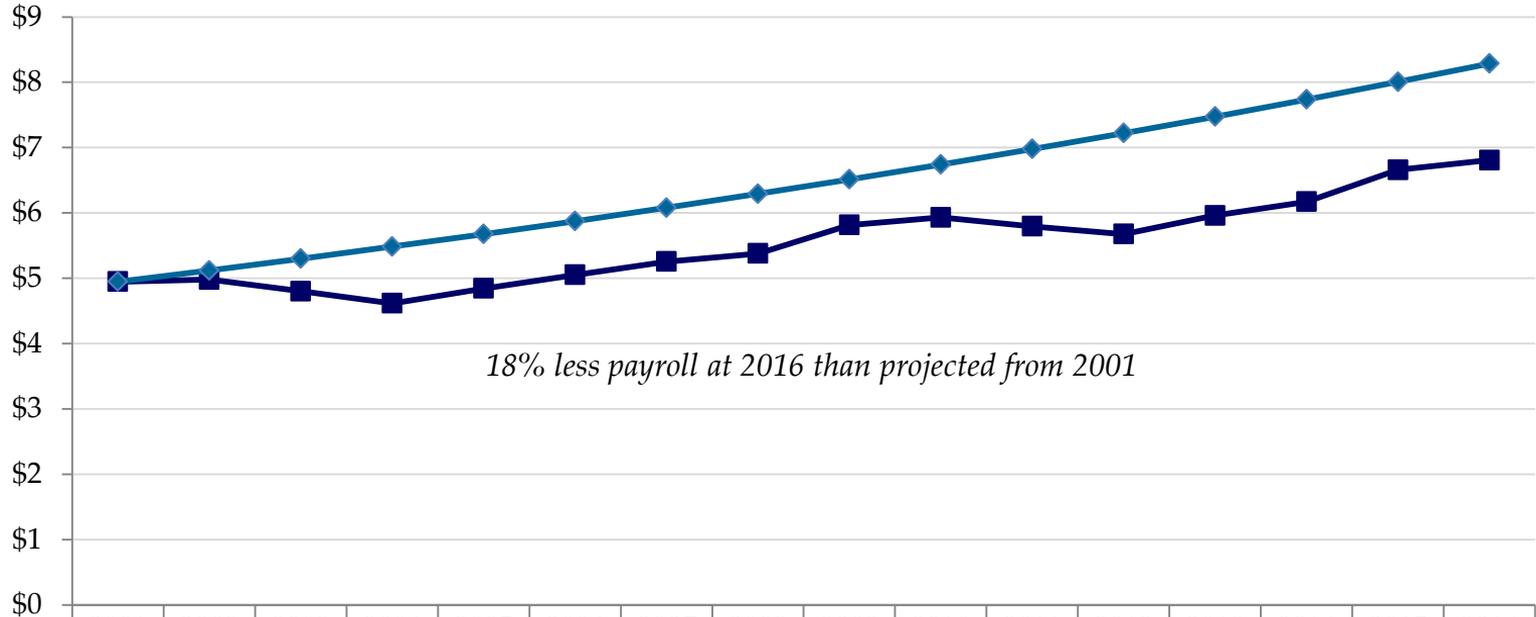
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ Actives	149	149	142	133	131	132	132	135	141	142	137	133	134	134	142	146
◆ Payees	48	52	59	62	66	68	70	73	76	79	83	88	91	96	100	104

*Active membership increase in 2015 includes approximately 7,000 new members from the elimination of the 90-day wait on September 1, 2015.*



# Payroll – Actual vs. Expected\*

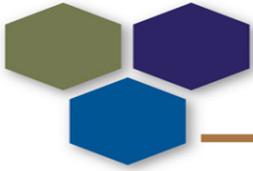
(\$ in billions)



*18% less payroll at 2016 than projected from 2001*

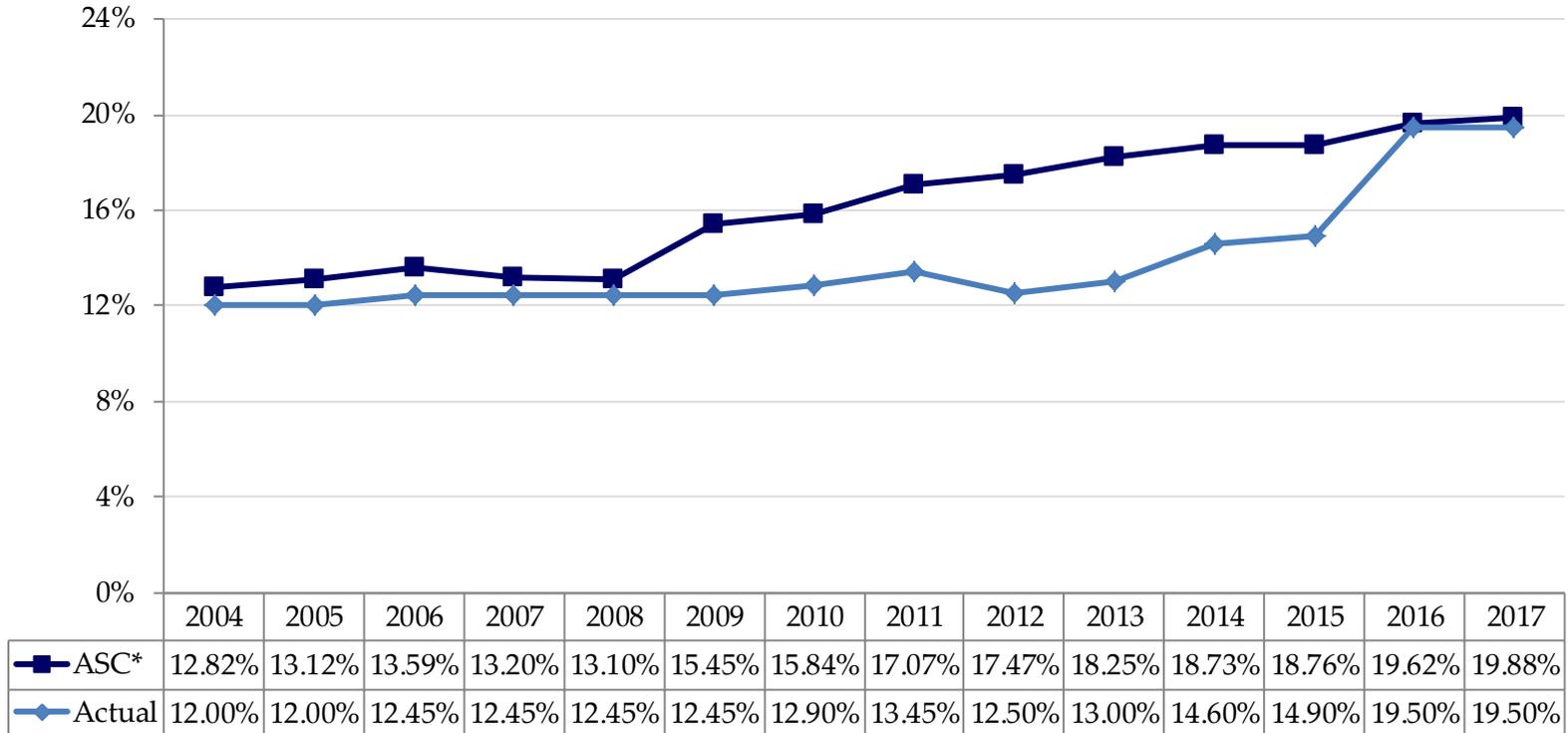
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Actual Payroll	\$4.9	\$5.0	\$4.8	\$4.6	\$4.8	\$5.1	\$5.3	\$5.4	\$5.8	\$5.9	\$5.8	\$5.7	\$6.0	\$6.2	\$6.7	\$6.8
Projected Payroll	\$4.9	\$5.1	\$5.3	\$5.5	\$5.7	\$5.9	\$6.1	\$6.3	\$6.5	\$6.7	\$7.0	\$7.2	\$7.5	\$7.7	\$8.0	\$8.3

\*Projected from 2001 assuming 3.5% increase



# Actual vs. Actuarial Contributions (ERS)

(% of Payroll, by Fiscal Year)



\*Actuarially Sound Contribution defined as normal cost plus 31-year amortization of unfunded

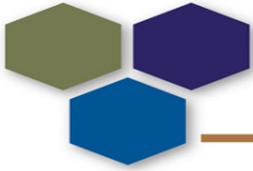


# Short-term Projections Using Alternate One-Year Investment Returns (ERS)

	August 31, 2016	Market Return for 12 month period ending August 31, 2017				
	Results	-8%	0%	8%	16%	24%
UAAL (\$ in billions)	\$8.7	\$10.2	\$9.9	<b>\$9.5</b>	\$9.1	\$8.7
Funded Ratio on AVA	75.2%	71.9%	73.0%	<b>74.0%</b>	75.0%	76.1%
ASC	19.88%	20.81%	20.49%	<b>20.17%</b>	19.86%	19.54%
Funding Period on AVA	35	48	43	<b>38</b>	35	32
Funded Ratio on MVA	69.3%	58.6%	63.8%	<b>69.0%</b>	74.3%	79.5%
Funding Period on MVA	73	N/A	N/A	<b>72</b>	37	24

*Projections assume that all assumptions are met (except asset returns, as noted) and future contributions continue at current levels.*

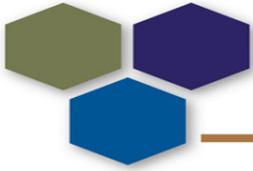
*Under 8.0% scenario, the \$0.8 billion increase in UAAL is due to recognition of deferred asset losses.*



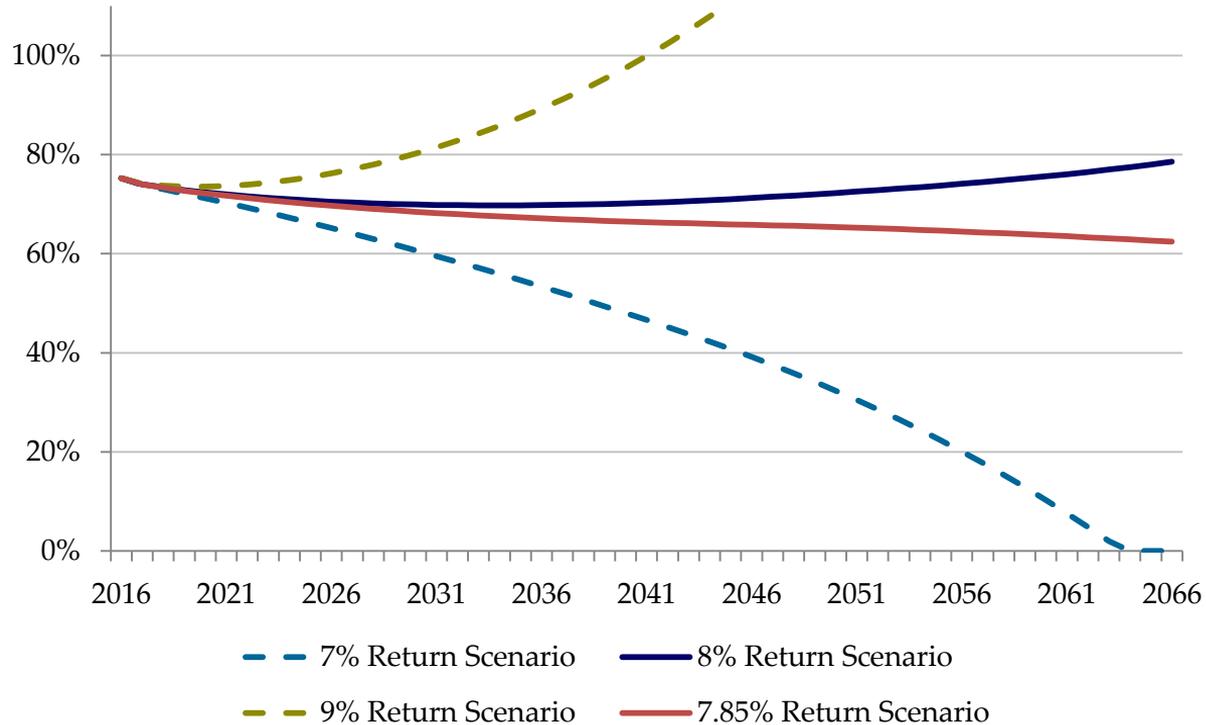
# 5-Year Funded Ratio and ASC Projections (ERS)

<b>Projection Assuming 8% Investment Returns</b>			
<b>Actuarial Valuation as of August 31,</b>	<b>Funded Ratio on AVA</b>	<b>ASC</b>	<b>Funding Period on AVA</b>
2016	75.2%	19.88%	35
2017	74.0%	20.17%	38
2018	73.4%	20.35%	41
2019	72.8%	20.47%	44
2020	72.4%	20.58%	46

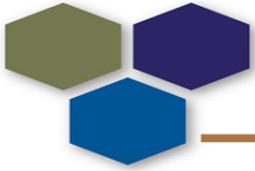
*Projections assume that all assumptions are met, including an 8% return on the market value of assets, and future contributions continue at current levels.*



# Funded Ratio Projections (ERS)



*Projections assume no changes to current assumptions and except actual asset returns, as noted, all other assumptions are met and future contributions continue at current levels.*



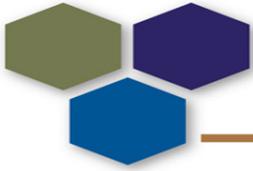
LECOSRF and JRS2  
Funding Valuation Results  
at August 31, 2016



# LECOSRF and JRS2 Results

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- ◆ LECOSRF had a reduction in funded status
  - ▶ Contributions are not sufficient to sustain the plan
- ◆ JRS2 had a slight improvement in funded status
  - ▶ Demographic gains outweighed the shortfall in investment returns
  - ▶ Based on smoothed plan assets, the current statutory rates sufficient to sustain the plan
    - However, this will not be true after deferred losses have been recognized
- ◆ Although steps have been made to improve the projected funded status of these two plans, further steps are needed



# Funded Status

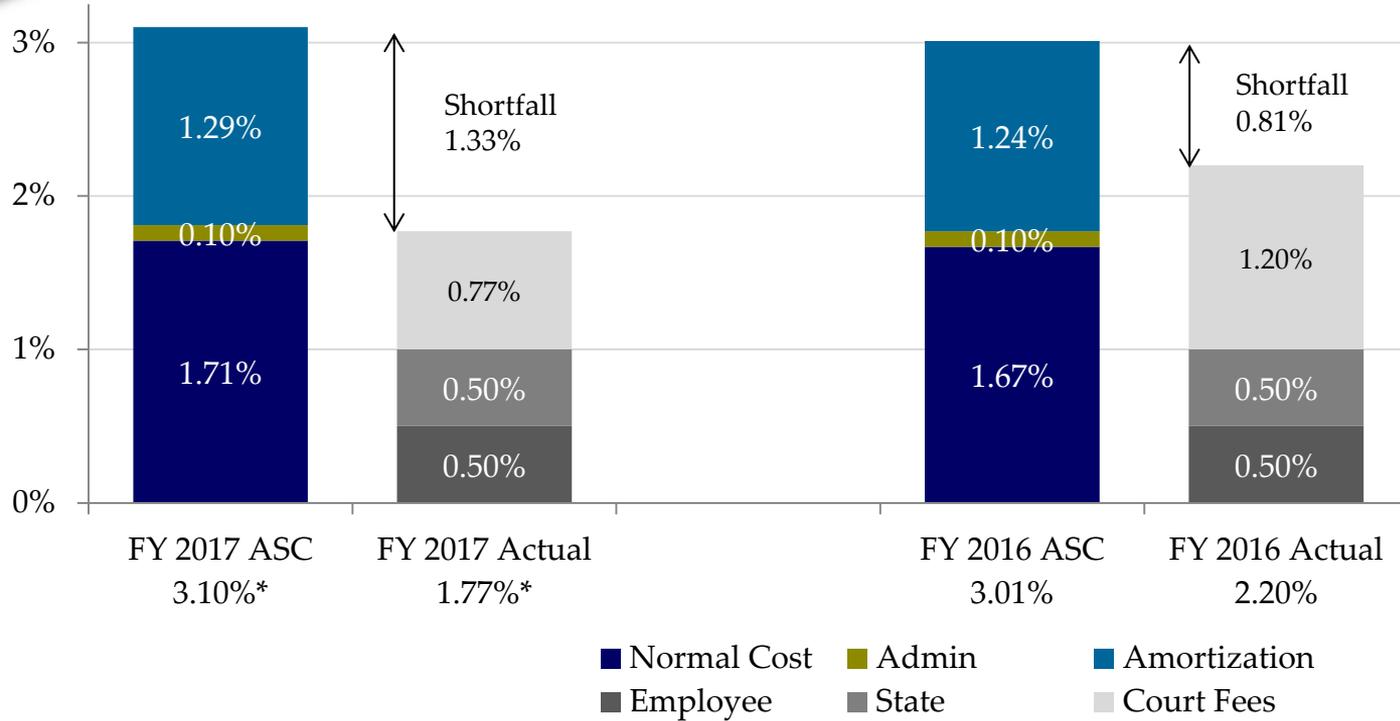
(\$ in millions)

<b>Actuarial Valuation as of August 31, 2016</b>		
	<b>LECOSRF</b>	<b>JRS2</b>
Actuarial Accrued Liability	\$1,312	\$426
Actuarial Value of Assets	<u>933</u>	<u>396</u>
Unfunded Accrued Liability	\$379	\$30
Funded Ratio	71.1%	92.9%
Funding Period	Never	49

<b>Actuarial Valuation as of August 31, 2015</b>		
	<b>LECOSRF</b>	<b>JRS2</b>
Actuarial Accrued Liability	\$1,262	\$404
Actuarial Value of Assets	<u>909</u>	<u>373</u>
Unfunded Accrued Liability	\$353	\$31
Funded Ratio	72.0%	92.2%
Funding Period	Never	Never

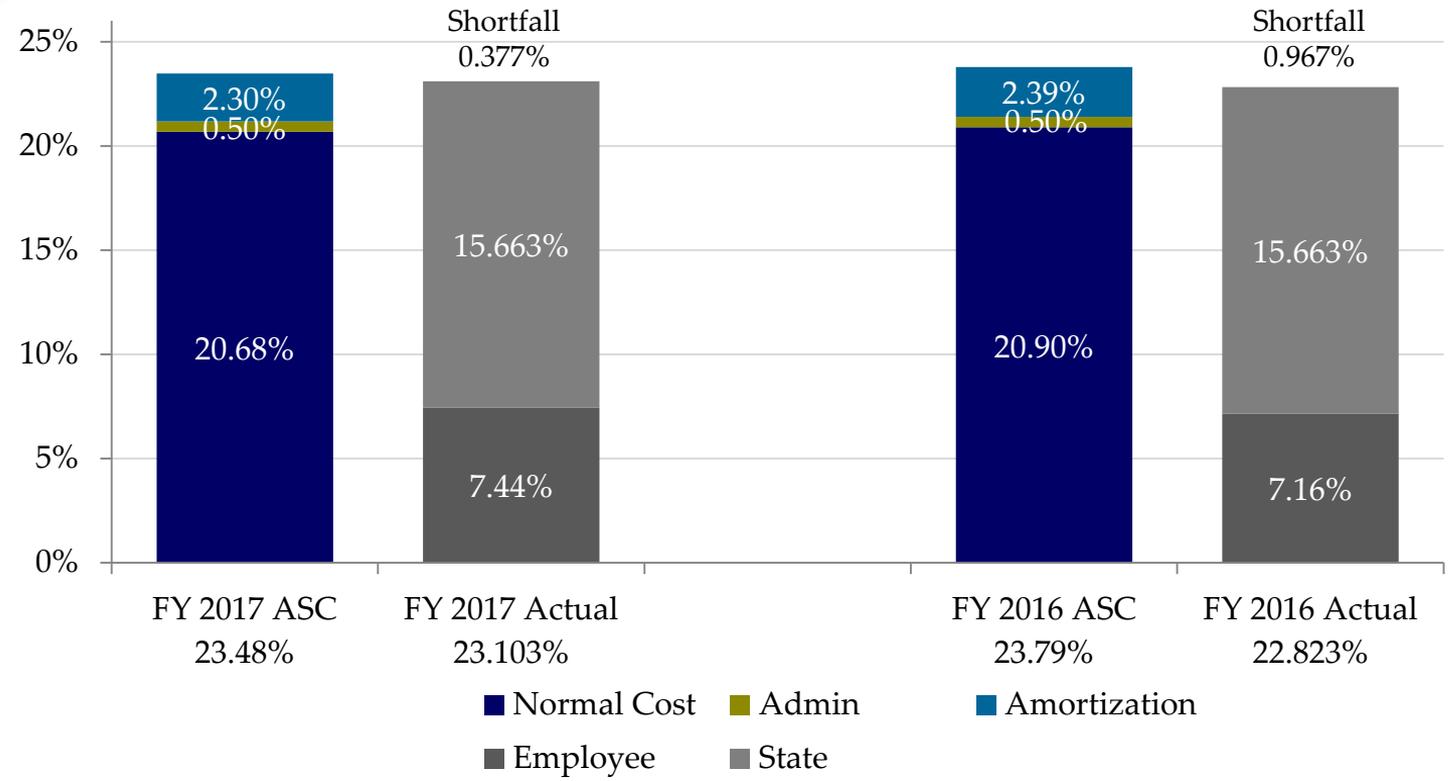
# Actuarially Sound Contribution (LECOSRF)



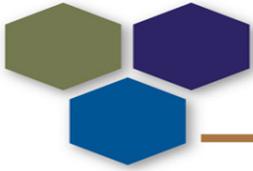
\* Stated rate is include the court fees remitted to LECOSRF. In FY 2016 valuation, LECOSRF revenue from court fees was assumed to grow with inflation each year. For FY 2017, after further research, court fees assumed to remain level at \$19.2 million each year.



# Actuarially Sound Contribution (JRS2)



*Normal cost rate decrease between FY 2016 and 2017 is due to demographic changes in active membership.*



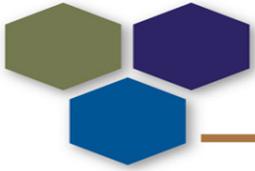
# Accounting Valuation Results at August 31, 2016



# Accounting Valuation Results

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- ◆ ERS adopted GASB 67 for plan year ending August 31, 2014
- ◆ GASB 68 measures will be included in Texas state reporting for fiscal year ending August 31, 2016
  - ▶ Net Pension Liability (similar to Unfunded Accrued Liability) will reside on the balance sheet of the State as of August 31, 2016
  - ▶ State has elected to utilize one year reporting lag
    - GASB 67/68 valuation as of August 31, 2015 used for August 31, 2016 State reporting



# Determining the Discount Rate

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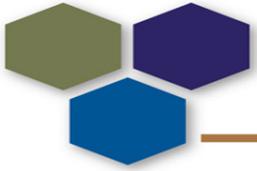
- ◆ Discount rate used in determining the Total Pension Liability (TPL) is a blend of two rates
  - ▶ Long-term expected rate of return on pension plan investments (8.00% based on current investment policy)
    - Can be used to discount plan obligations as long as there are projected assets sufficient to pay projected plan benefits
  - ▶ Yield or index rate for a 20-year, tax-exempt general obligation municipal bond (2.84% as of August 31, 2016)
    - Used to discount plan obligations after the projected assets have been extinguished



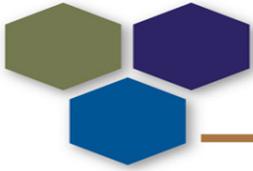
# Accounting Valuation Results

◆ (\$ in millions)

August 31, 2016	ERS	LECOSRF	JRS2
Single Discount Rate (SDR)	5.73%	3.69%	6.53%
Total Pension Liability	\$44,223	\$2,214	\$486
Plan Fiduciary Net Position	<u>24,466</u>	<u>860</u>	<u>381</u>
<b>Net Pension Liability (NPL)</b>	<b>19,757</b>	<b>1,354</b>	<b>105</b>
August 31, 2015			
Single Discount Rate (SDR)	6.86%	5.00%	7.06%
Total Pension Liability	\$37,265	\$1,765	\$440
Plan Fiduciary Net Position	<u>23,998</u>	<u>844</u>	<u>365</u>
<b>Net Pension Liability (NPL)</b>	<b>13,266</b>	<b>921</b>	<b>75</b>



# Summary



# Upcoming Asset Allocation Study and Actuarial Experience Study

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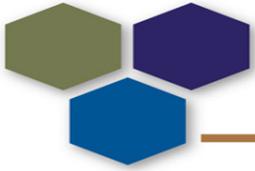
- ◆ Over the next 12-15 months ERS will be conducting a thorough review of its investment and actuarial strategies, including the asset allocation and assumed rate of investment return.
  - ▶ Capital market forecasts from investment consultants and other market data show lower expected inflation and expected investment returns
  - ▶ Growth in aggregate member payroll has been less than assumed
    - Assumed 3.5% per year and actual has been closer to 2%
    - Drives expected revenue from future payroll contributions
  - ▶ Mortality studies continue to show improvement in life expectancy
    - Studies have shown varied expectations for rate of future improvement
    - Paying the same benefits for longer periods costs more



# Summary

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- ◆ Contribution rates and current level of plan benefits are sufficient to sustain the ERS and JRS2
  - ▶ However, there is no margin for adverse deviation or response to additional cost pressures
- ◆ For LECOSRF, current contribution level is not sufficient to sustain the system
  - ▶ Without an increase of contributions over the current schedule, or a reduction of benefits, the funded status will continue to decline



# Disclaimers

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- ◆ This presentation is intended to be used in conjunction with the actuarial valuation reports issued in November 2016. This presentation should not be relied on for any purpose other than the purpose described in the valuation reports.
- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.

Questions?