



Presented by:

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Joint Committee on Pensions, Investments, and Benefits



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Actuarial Valuations

Purpose

- Measurement of assets and Liabilities
- Best estimate of ultimate costs
 - Project future benefits using actuarial assumption
 - Calculate present value of future benefits (their cost in today's dollars)
 - Apply cost method to allocate to periods of service
- Calculate employer contribution rates
 - FY 2018 for State/School Group
 - CY 2017 for Local Group
- Baseline for any cost studies in 2016 legislative session



Actuarial Valuation

Discussion topics

- Key factors affecting 2014 valuation
- Valuation results
 - Key system statistics
 - Funded status (Unfunded actuarial liability and funded ratio)
 - Employer contribution rates
- Projections of funded status and employer contribution rates for State/School and Local



Key Factors

Legislative changes

- House Bill 2095:
 - Modified working after retirement rules
 - Created pilot program for a Deferred Retirement Option Plan (DROP) only for members of Kansas Highway Patrol
- Senate Bill 4:
 - Reflected change to the State/School employer contribution rate from 11.27% to 8.65% for the last half of FY 2015
 - Change was due to state budget allotment implemented by Governor



Key Findings

Legislative changes

- Senate Bill 228:
 - Authorized issuance of \$1 billion in bonds to be used to reduce the UAL for the State/School group
 - Reset State/School employer contribution rates for FY 2016 from 12.37% to 10.91% and for FY 2017 from 13.57% to 10.81%
- Impact of SB 228 rate changes reflected in this valuation and the projections
- Issuance of bonds was not certain when valuation was prepared so they were not incorporated in this valuation
 - Projections of future contribution rates and funded status provided with bond proceeds



Key Factors

Employer contribution rate recertification due to SB 228

		Actuarial Rate	Original Statutory Rate	Recertified Per SB 228	Contribution Reduction	
FY	2016					
•	State	11.44%	12.37%	10.91%	1.46%*	
•	School	16.00%	12.37%	10.91%	1.46%	
•	C55*	12.21%	12.76%	10.91%	1.85%	
•	C60*	12.27%	12.50%	10.91%	1.59%	
	*C55 = Corrections officers C60 = other selected corrections staff					
FY	2017					
•	State	10.77%	13.57%	10.81%	2.76%	
•	School	16.03%	13.57%	10.81%	2.76%	
•	C55	11.45%	13.96%	10.81%	3.15%	
•	C60	11.70%	13.70%	10.81%	2.89%	

^{*} State had been at full Actuarial Required Contribution (ARC), but recertified rates result in a statutory rate less than ARC in FY 2016 only.



Key Factors

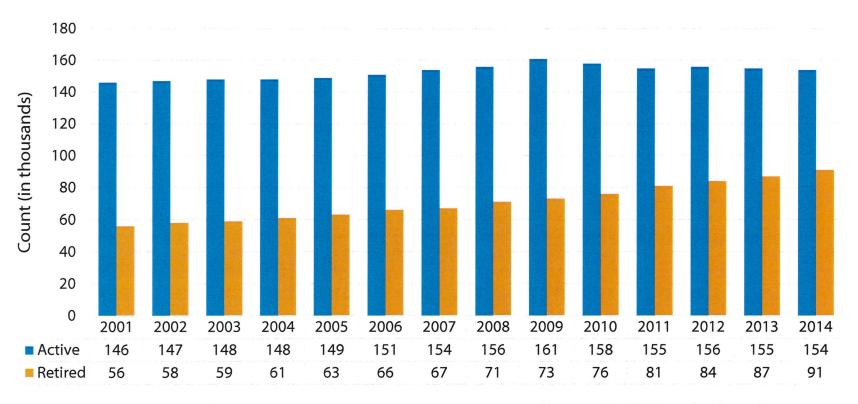
Actuarial assumption changes

- Changes in some assumptions and methods adopted as result of triennial experience study
 - Compares actual experience to actuarial assumptions to determine whether adjustments to assumptions should be made.
- Examples of changes
 - Establish interest crediting rate of 6.5% for KPERS 3 members
 - Modify retirement rates for Judges, reflecting retirement at later age
 - Increase active member mortality for females in State and School groups
 - New projection methodology to account for lag in effective date of contribution rate changes.
- Modest impact on liabilities, with net reduction in Unfunded Actuarial Liability (UAL)
 - New projection methodology also resulted in a reduction in UAL for all but State/School group



System Statistics

Total active and retired members (total system)



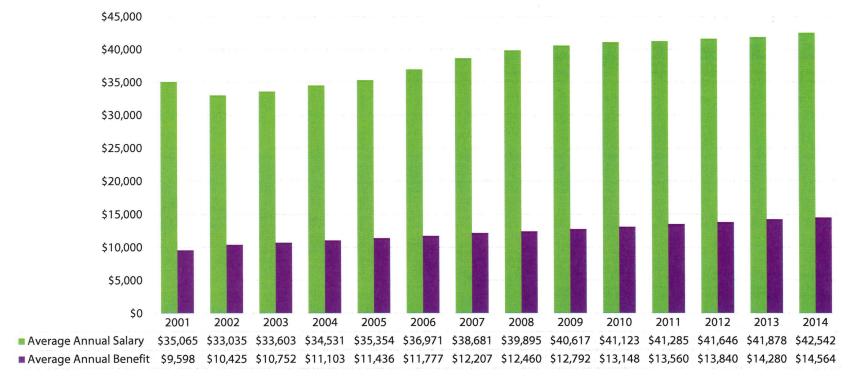
0.4% average annual increase in active count since 2001 –flat or declining for last few years.

3.8% average annual increase in retiree count since 2001 (4.4% increase for 2014).



System Statistics

Average salary and benefits (total system)

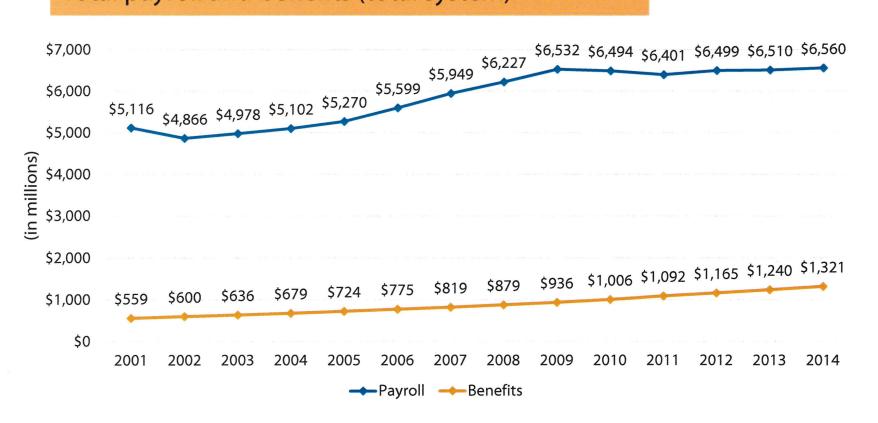


1.5% annual increase in average salary since 2001.1.6% increase for 2014. 3.0% annual increase in average benefits since 2001.2.0% increase for 2014.



System Statistics

Total payroll and benefits (total system)





Actuarial Value of Assets

Market value vs smoothed value

- Market value not used directly in valuation
- Asset valuation method used to smooth the effect of market fluctuations
 - Goal is to provide more stability in contribution rates
 - Smoothed value is called actuarial value of assets
- Recognize difference in actual investment return compared to expected return (at 8%) evenly over 5 years



Key Valuation Results

Investment returns

- Investment return on market value basis in 2014 was 6.5%
- Deferred gains from prior years due to smoothing of actual market experience
- Return on smoothed assets of 10.6% resulted in an actuarial gain
- Market value of assets exceeds actuarial (smoothed) value of assets by 4%



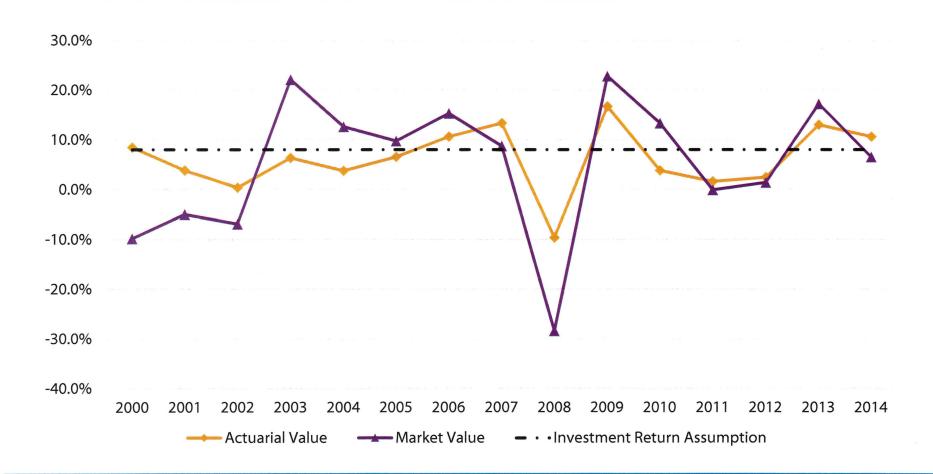
Key Valuation Results

Impact of deferred experience

- Deferred experience yet to be recognized
 - Net deferred gain of \$660 million this year vs. \$1,182 in last year's valuation
 - Will flow through smoothing method over the next 4 years
 - Expected to lower the Unfunded Actuarial Liability and improve the funded ratio, absent unfavorable experience in future years

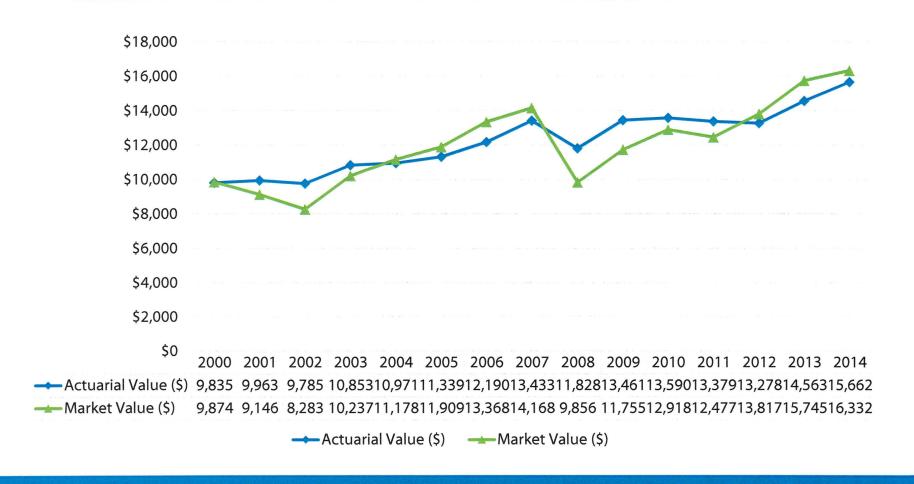


Historical Rates of Return





Historical Asset Growth (In millions)





Key Valuation Results

Funded status of system as of 12/31/2014

- Funded status improved for all groups
- Unfunded Actuarial Liability (UAL) decreased by \$298 million to \$9.468 billion due to a gain on both assets and liabilities
- Funded ratio increased from 59.9% to 62.3%



Unfunded actuarial liability (UAL)

- UAL = Actuarial Liability less Actuarial Assets
- "Level percent of pay" amortization methodology results in an increase in the dollar amount of UAL over more than half of amortization period, even if full actuarial required contribution (ARC) rate is paid
- Amortization period has declined and is near the point where UAL will start decreasing if full ARC paid
- Any difference in statutory contribution rate and ARC increases UAL
- Other factors such as experience gains/losses and changes in actuarial assumptions also impact UAL



Development of 12/31/2014 UAL (In millions)

	Actuarial Liability (AL)		Actuarial Assets		Unfunded AL		Funded Ratio
State	\$	4,161	\$	3,122	\$	1,039	75%
School		13,437		7,232		6,205	54%
State/School		17,597		10,354		7,244	59%
Local		4,569		3,081		1,488	67%
KP&F		2,801		2,075		726	74%
Judges		163		153		11	94%
Total*	\$	25,130	\$	15,662	\$	9,468	62%

^{*}Amounts may not add due to rounding



Key Findings

Year-over-year changes to funded ratio and UAL

	December 31		Decem	mber 31	
	2013	2014	2013	2014	
State	72.3%	75.0%	\$1,129M	\$1,039M	
School	52.1%	53.8%	\$6,222M	\$6,205M	
State/School	57.0%	58.8%	\$7,352M	\$7,244M	
Local	63.7%	67.4%	\$1,590M	\$1,488M	
KP&F	70.3%	74.1%	\$803M	\$726M	
Judges	86.9%	93.5%	\$21M	\$11M	
Total	59.9%	62.3%	\$9,766M	\$9,468M	



Factors affecting the UAL

- The Unfunded Actuarial Liability is impacted by:
 - benefit changes (e.g., addition of DROP plan)
 - experience gains/losses (e.g., investment return)
 - assumption changes (e.g., active mortality rates)
 - actuarial method changes (e.g., projection methodology to account for contribution lag)
 - actual contributions (e.g., revised contribution rates)
- Factors specific to the System's Unfunded Actuarial Liability changes over the last year are quantified on next slide.



Factors affecting year-over-year change in UAL

UAL December 31, 2013	\$ 9,766M
Contribution cap/time lag	178M
Amortization method	18M
Experience	
Investment	(368)M
 Demographic/other 	(78)M
Change in assumptions	(50)M
Change in plan provisions (KP&F)	1M
UAL December 31, 2014	\$9,468M

Note: Amounts may not add due to rounding



Factors impacting change in UAL by group

	State	School	Local	KPF	Judges	Total
12/31/13 UAL	\$1,129.3	\$6,222.5	\$1,589.8	\$803.1	\$21.3	\$9,765.9
Contribution cap/lag	(2.1)	192.9	(0.2)	(12.0)	(0.8)	177.8
UAL method	2.1	11.5	3.3	2.0	(0.5)	18.4
Investment experience	(75.4)	(172.5)	(69.2)	(47.7)	(3.5)	(368.3)
Demographic experience	(11.3)	(80.5)	(24.8)	(12.7)	(3.3)	(132.6)
• Other	8.4	36.5	9.2	0.7	0.5	55.3
Assumptions & methods	(12.2)	(5.3)	(20.3)	(8.6)	(3.1)	(49.5)
Benefit changes	0.0	0.0	0.0	1.4	0.0	1.4
12/31/14 UAL	\$1,038.8	\$6,205.1	\$1,478.8	\$726.2	\$10.6	\$9,468.5

Note: Dollars in millions



Key Valuation Results

Employer contribution rates and ARC rates

- Employer contribution rates for State and Local continue to be at the full actuarial rate
 - State actuarial rate dropped from 10.77% to 9.62%
 - Local actuarial rate dropped from 9.18% to 8.46%
 - Rates effective for years beginning in 2017 (FY 2018 for State; CY 2017 for Local)
- School projected to reach Actuarial Required Contribution (ARC) in FY 2019 at a rate of 13.06%
 - Last year's projections were FY 2019 at 15.01%
 - Projected net ARC date/rate decrease affected by
 - Investment and demographic experience
 - New assumptions/methods
 - Receipt of \$1 billion in bond proceeds
 - Senate Bill 228 rate changes



Actuarial vs. statutory employer contribution rates

	December		
	Actuarial	Statutory	Shortfall
State	9.62%	12.01%	(2.39%)**
School	16.38%	12.01%	4.37%
State/School	14.89%	12.01%	2.88%***
Local	8.46%	8.46%	0.00%
KP&F	19.03%	19.03%	0.00%
Judges	15.89%	15.89%	0.00%

^{*} Rates apply in fiscal years **beginning** in 2017 (FY 2018 for State/School; CY 2017 for Local).

^{**} As provided in statute, the contribution above the State ARC rate will be used to fund the School Group.

^{***} State/School projected to reach ARC date in FY 2019 at a rate of 13.06% with the deposit of \$1 billion bond proceeds.



Employer contribution rate comparisons

	Actuaria (ARC as %		Statutory Co Ra	% of ARC Contributed	
System	12/31/2013	12/31/2014	12/31/2013	12/31/2014	12/31/2014
State	10.77%	9.62%	10.81%*	12.01%	125%
School	16.03%	16.38%	10.81%*	12.01%	73%
State/School	14.85%	14.89%	10.81%*	12.01%	81%
Local	9.18%	8.46%	9.18%	8.46%	100%
KP&F	20.42%	19.03%	20.42%	19.03%	100%
Judges	21.36%	15.89%	21.36%	15.89%	100%

^{*} Rate reduced from 13.57% in SB 228 (impacts FY 2016).

NOTE: The excess of the statutory over the actuarial contribution rate on State payroll is contributed to the School group.

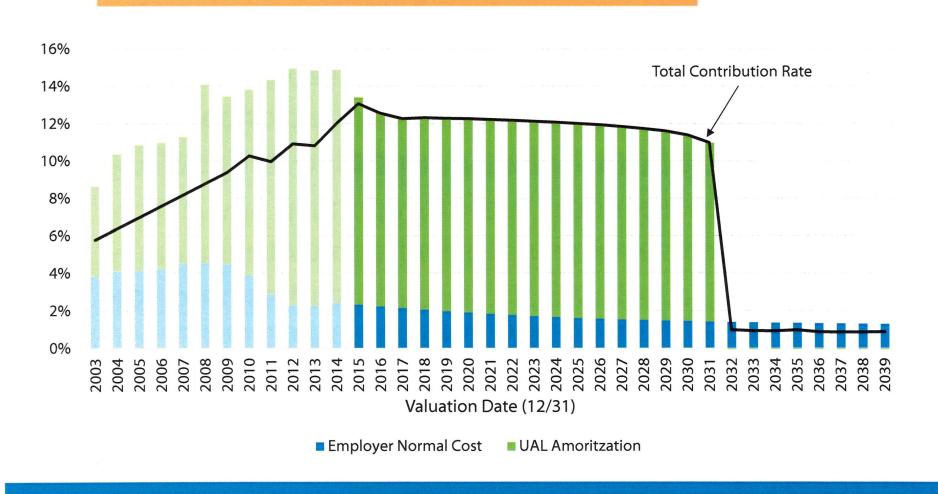


Change in actuarial required contribution (ARC) by group

	State	School	Local	KPF	Judges
12/31/13 ARC	10.77%	16.03%	9.18%	20.42%	21.36%
Contribution cap and lag	(0.02)	0.41	0.00	(0.19)	(0.28)
Amortization method	0.02	0.02	0.01	0.03	(0.30)
Investment experience	(0.56)	(0.36)	(0.30)	(0.75)	(1.21)
Liability experience	(80.0)	(0.17)	(0.11)	(0.20)	(1.14)
• Other	0.36	0.41	0.29	0.58	0.91
Assumptions & methods	(0.87)	0.04	(0.61)	(0.89)	(3.45)
Benefit changes	0.00	0.00	0.00	0.03	0.00
12/31/14 ARC	9.62%	16.38%	8.46%	19.03%	15.89%



Components of State/School employer contribution rates





- Not precise predictions but general estimates
 - Preliminary model results final review continuing
 - Final ARC date/rate for State/School may change
- Projections based on many assumptions
 - 8% return on market value from 12/31/14 forward
 - All actuarial assumptions met
 - Current plan provisions including statutory cap
 - New entrant profile based on recent history
- Results shown with \$1B in bond proceeds

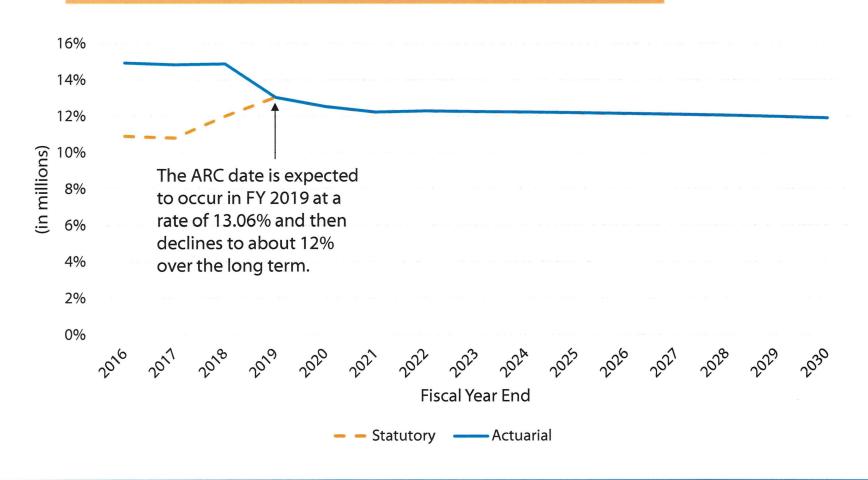


State/School funding

- 12/31/14 Valuation
 - Funded Ratio: 59%
 - Actuarial rate: 14.89%
 - Statutory rate: 12.01%
- ARC Date/Rate (actuarial and statutory contribution rates are equal)
 - Date: FY 2019 at ARC rate of 13.06% with bond proceeds
 - Projected ARC Date and Rate, based on prior valuation, was 15.01% in FY 2019
 - Statutory rate for the State alone has exceeded the State only ARC since the December 31, 2010 valuation (set the employer contribution rate for FY 2014).
 - SB 228 reduced contribution rate to 10.91% for FY 2016 with result that statutory rate is less than ARC for that one year

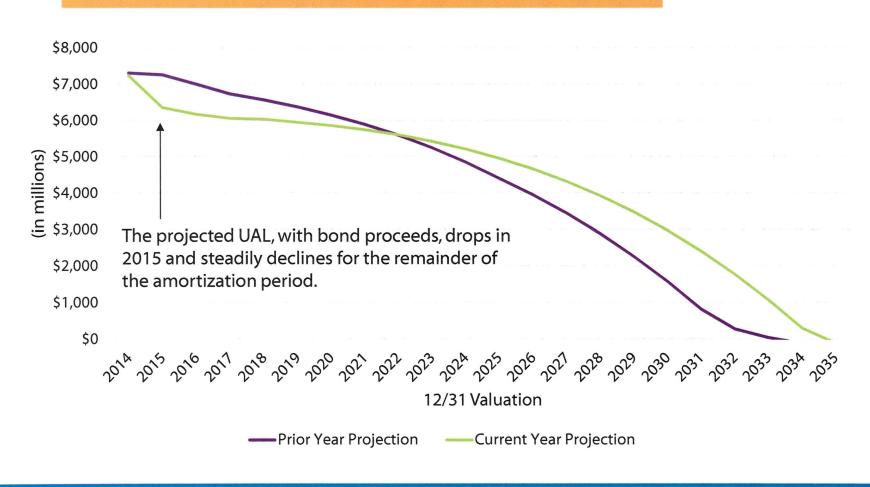


Projected State/School employer contribution rates



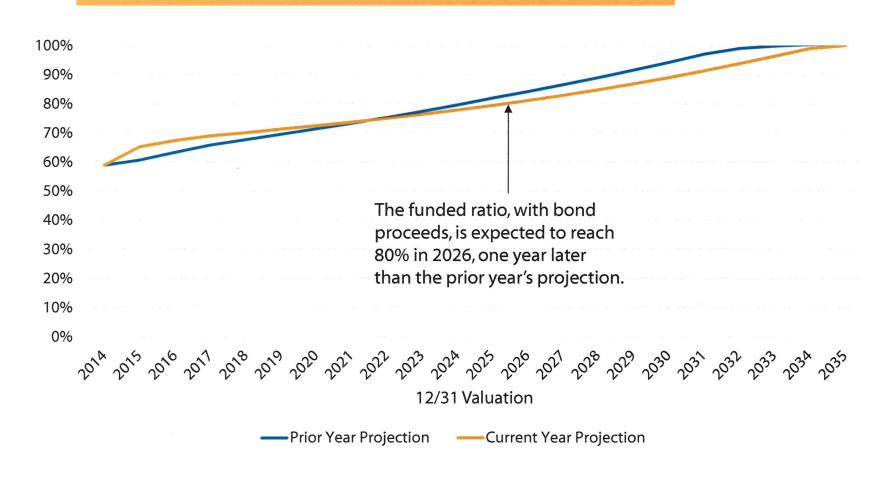


Projected State/School unfunded actuarial liability





Projected State/School funded ratio



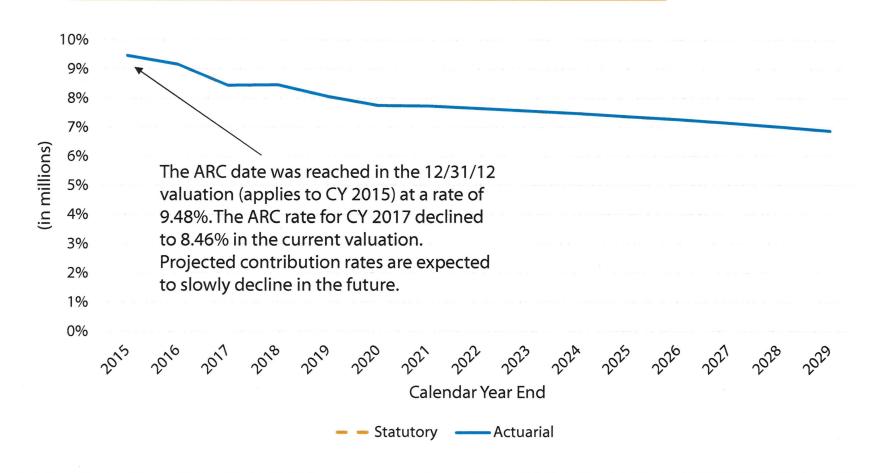


Local funding

- 12/31/14 Valuation
 - Funded ratio: 67%
 - CY 2017 actuarial rate: 8.46%
 - CY 2017 statutory rate: 8.46%
- ARC Date/Rate occurred in 12/31/12 valuation (calendar year 2015)
 - Continues to be at full actuarial rate in 12/31/14 valuation
 - Actuarial required contribution rate declined from 9.18% in last year's valuation to 8.46% in this year's valuation.

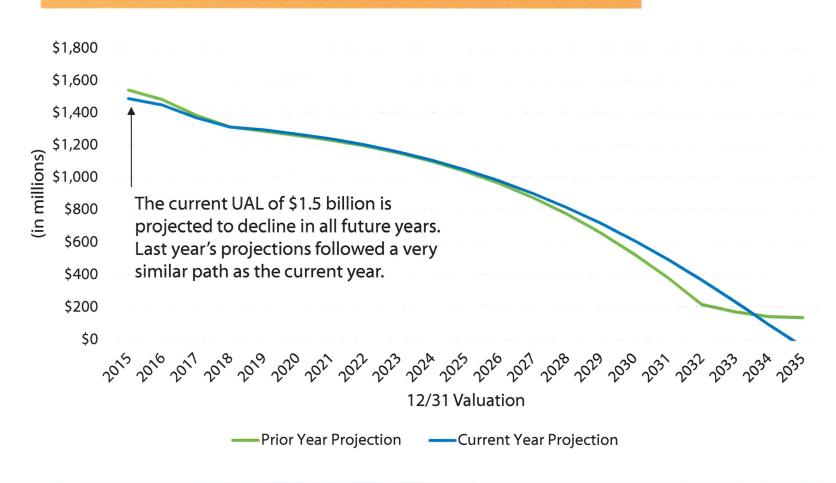


Projected Local employer contribution rates



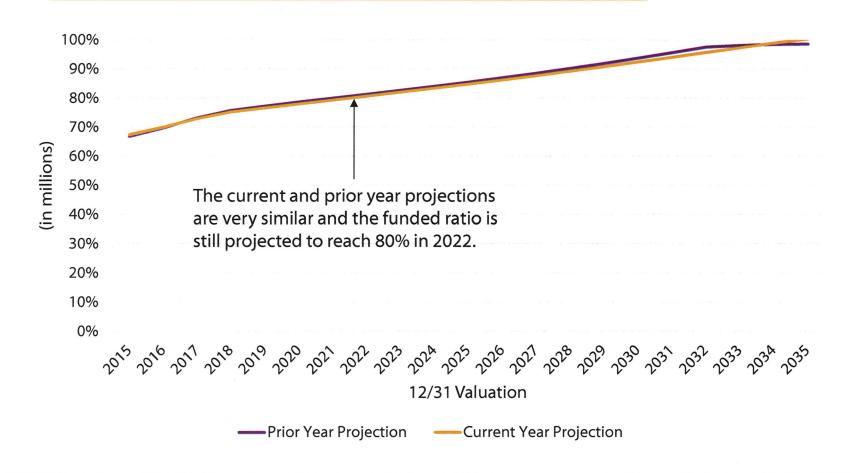


Projected Local unfunded actuarial liability





Projected Local funded ratio





Short term projections (Total system)

Return in 2015*

	8%		0%		- 8%	
Valuation		C al a al		C. v.s. al.s. al.		C. vo al a al
Date (12/21)	1101	Funded	1141	Funded	1141	Funded
<u>(12/31)</u>	<u>UAL</u>	<u>Ratio</u>	<u>UAL</u>	<u>Ratio</u>	<u>UAL</u>	<u>Ratio</u>
2015	\$8,511M	67%	\$8,787M	66%	\$9,063M	65%
2016	8,187M	70%	8,831M	68%	9,477M	65%
2017	7,978M	72%	9,000M	68%	10,024M	64%
2018	7,942M	73%	9,339M	68%	10,740M	63%

[•] **Includes** bond proceeds and an 8% return in all years after 2015, so current deferred investment experience is reflected in future years.