



Tulsa MERP January 1, 2011 Actuarial Valuation

August 3, 2011 Board of Trustees
Meeting

Leslie Thompson, FSA, MAAA

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com



Agenda

- ◆ January 1, 2011 Valuation
- ◆ Near Term Outlook
- ◆ Experience Study Review
- ◆ Summary



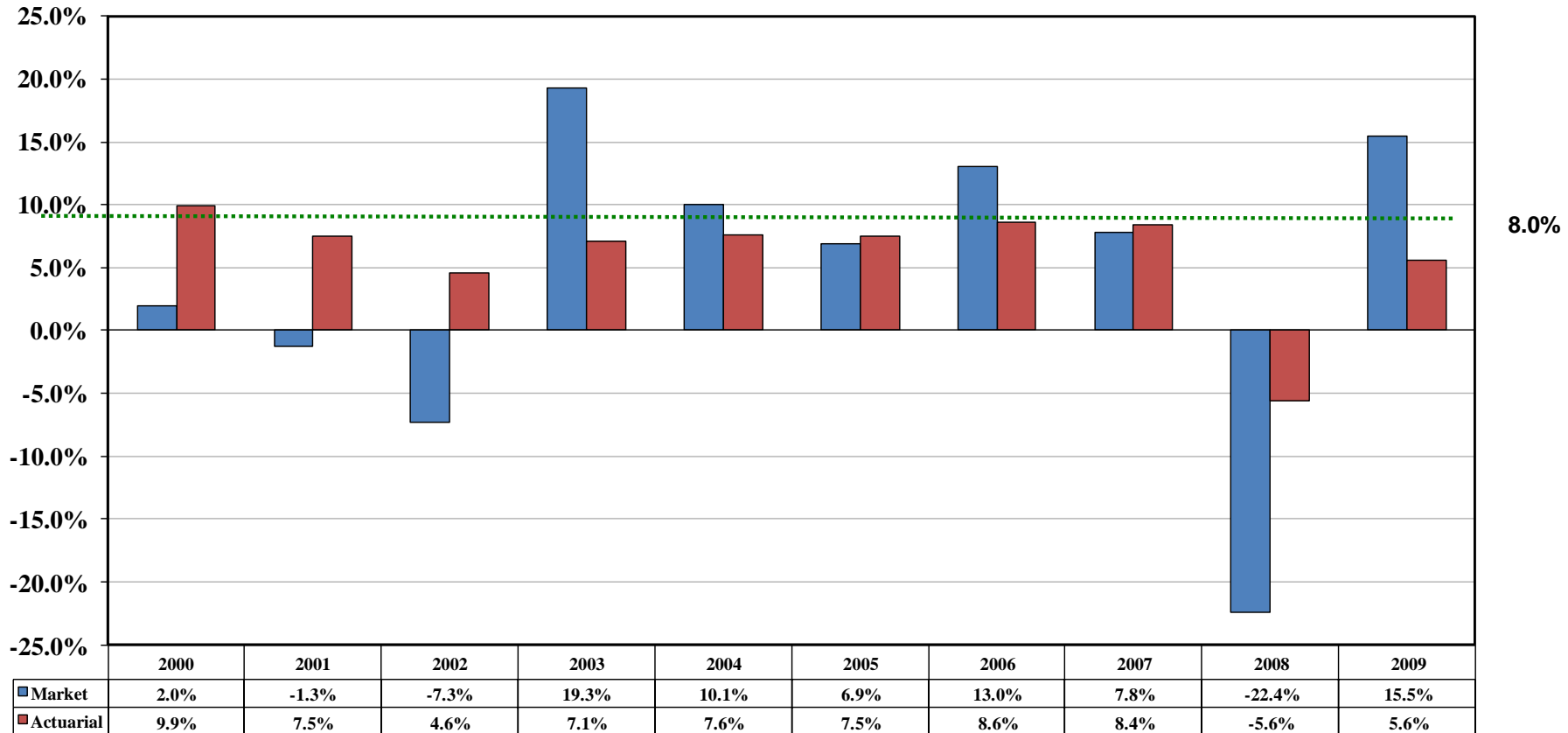
Demographic Information

	Valuation Date		
	01/01/2011	01/01/2010	01/01/2009
Number of Members			
Active	2,387	2,580	2,733
Retirees, Members and Beneficiaries	1,595	1,514	1,438
Inactive Members	262	241	244
Total	4,244	4,335	4,415
Annualized Payroll (\$ millions)	\$ 101.7	\$ 108.4	\$ 111.2
Active Averages			
Age (years)	46.9	46.4	46.1
Service (years)	12.1	11.8	11.5
Pay	\$ 42,602	\$ 42,024	\$ 40,677
Annual Disbursements	\$27,397,685	\$24,920,321	\$23,149,209

- ◆ Decreases in population will lead to decreases in contributions unless the contribution rate is increased proportionately
- ◆ Continued increases in disbursements
 - ▶ Benefit payments and refunds (annualized 10.2% since 2006)



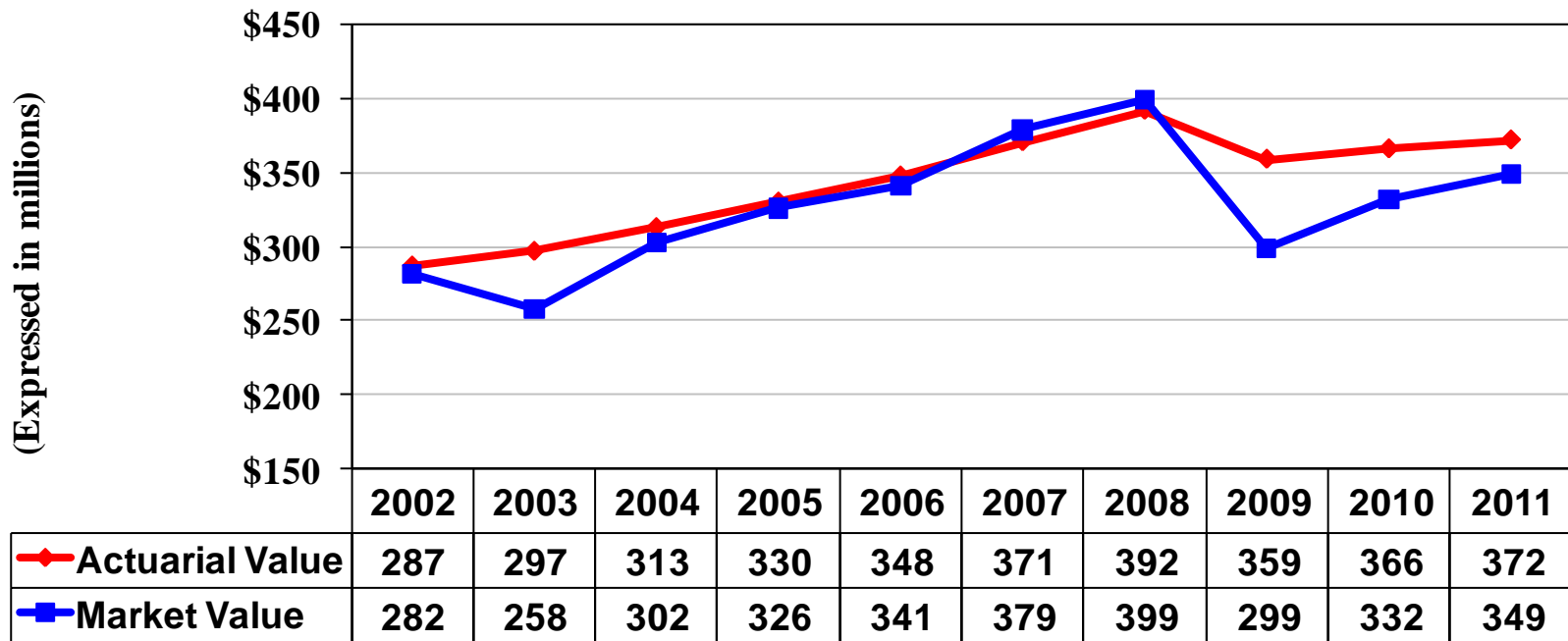
Estimated Yields Based on Actuarial and Market Value of Assets



4.49% average compound return (on market value) over the last 10 years.

5.69% average compound return (on actuarial value) over the last 10 years.

Historical Asset Values



\$29 million in deferred losses yet to be recognized



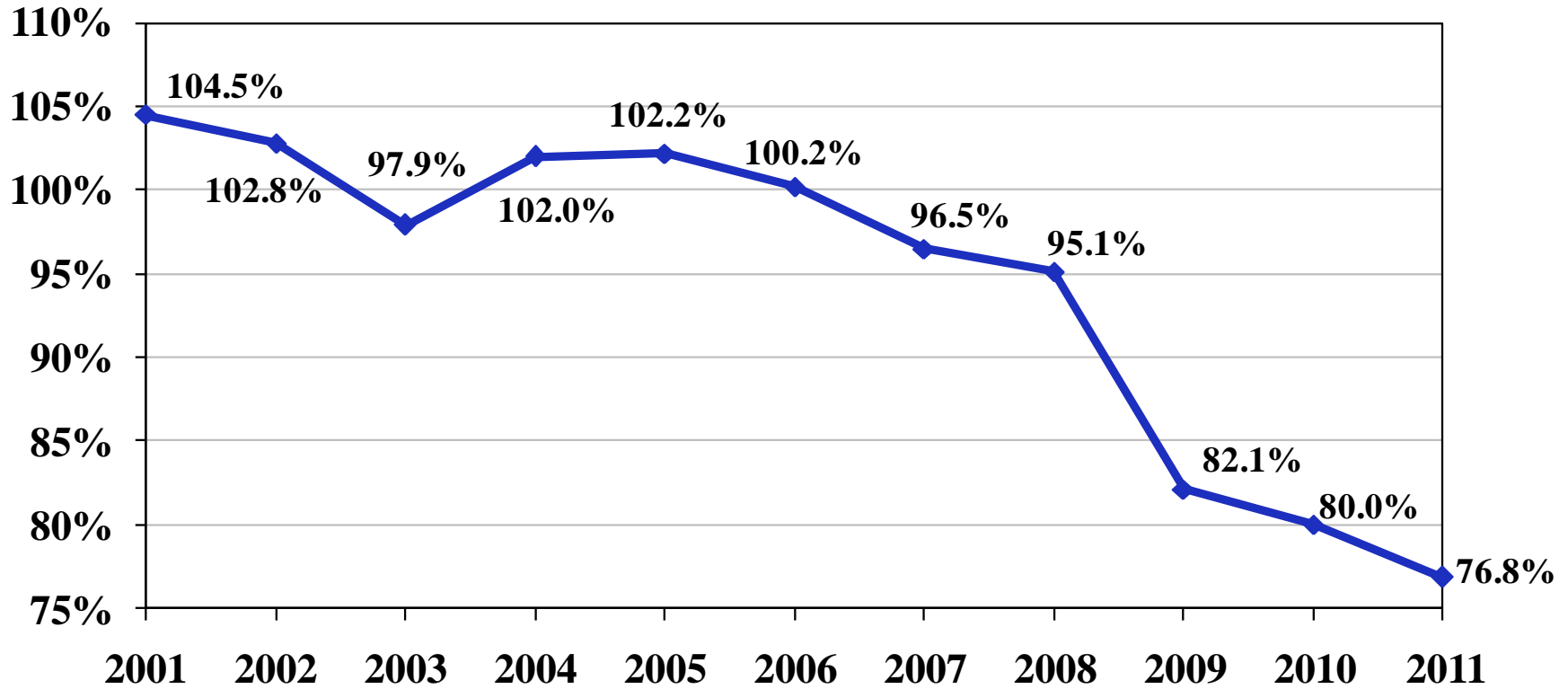
Valuation Results

	2009 Valuation	2010 Valuation	2011 Valuation
Normal Cost	9.00%	9.00%	10.48%
AAL (in millions)	\$437.5	\$457.2	\$484.7
AVA (in millions)	359.2	365.8	372.5
UAAL (in millions)	78.3	91.5	112.2
Funded Ratio	82.1%	80.0%	76.8%
30 Year ARC	8.99%	9.62%	12.12%
Funding Period based on 6.30% employer contribution	N/A	N/A	N/A
Projected Employer Contribution*	\$10,579,047	\$11,639,334	\$14,714,634

* Based on greater of 6.30% or ARC



GASB 25 Funded Ratio





Changes in the UAAL

A.	UAAL at January 1, 2010	\$91.46
B.	Expected UAAL at January 1, 2011 (Interest, Normal Cost, Contributions, etc)	\$97.30
C.	Unanticipated Changes in UAAL:	
	Actuarial loss in assets -- smoothed	\$5.72
	Actuarial gain for demographic changes	(11.14)
	Actuarial loss for Experience Study	<u>20.34</u>
	Total increase (decrease) in UAAL	\$14.92
D.	UAAL at January 1, 2011 (B + C)	\$112.22



Demographic Gains/(Losses)

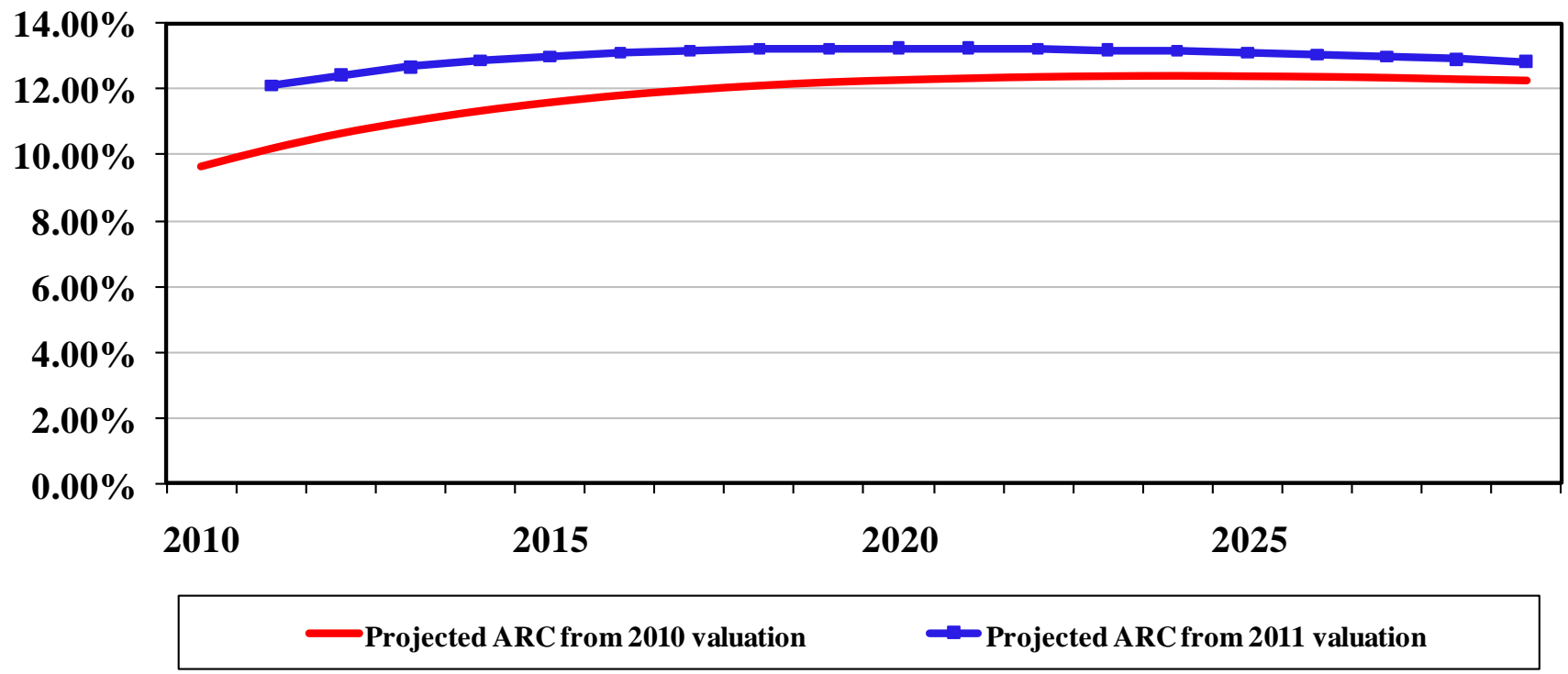
	G/(L)	Expected	Actual
Salary	\$12.29	6.46%	2.70%
Retirement	(0.80)	104	108
Termination *	1.31	170	203
Disability Retirements	(0.48)	10	4
Pre-retirement mortality	(0.39)	8	1
Post-retirement mortality	0.55	49	57
New Entrants/Rehires	(0.44)		
Other	<u>(0.90)</u>		
Total	\$11.14		

\$ in millions

* Expected 27 vested terminations, actual was 15



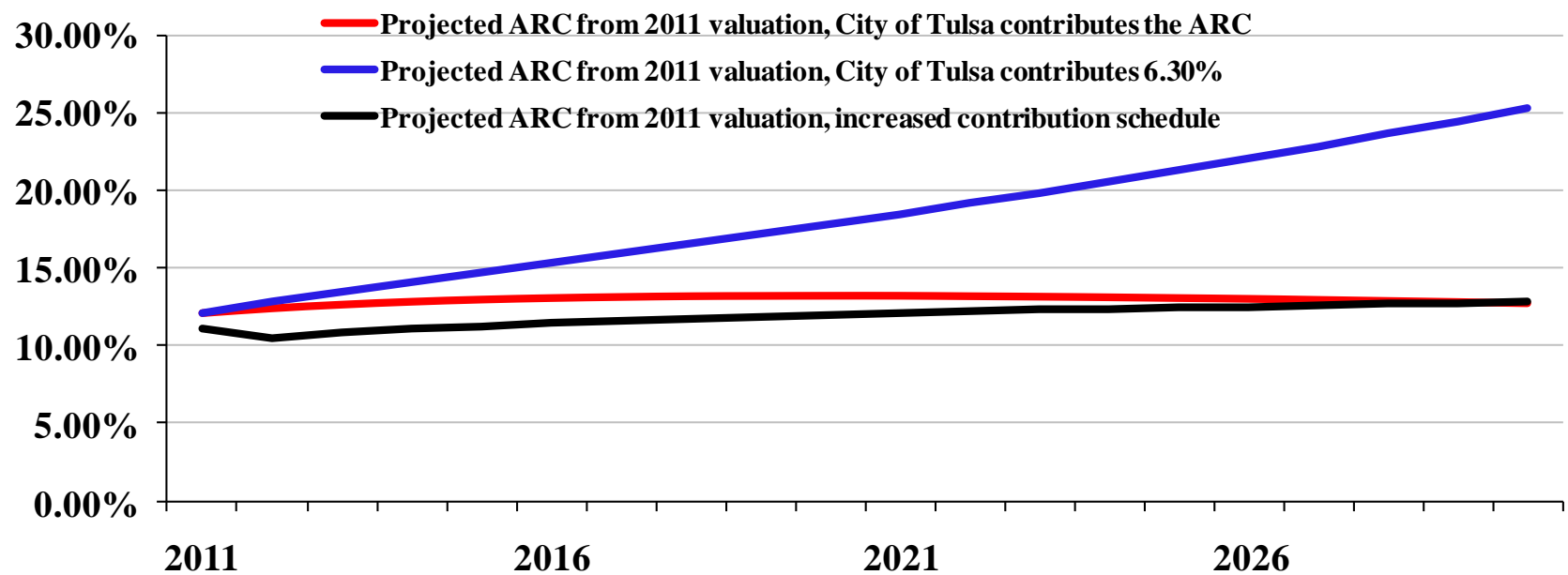
Projection of Employer Contribution Rate from 2011 Valuation



8.0% return each year for 2010 valuation
7.75% return each year for 2011 valuation
Assumes contributions equal to the ARC



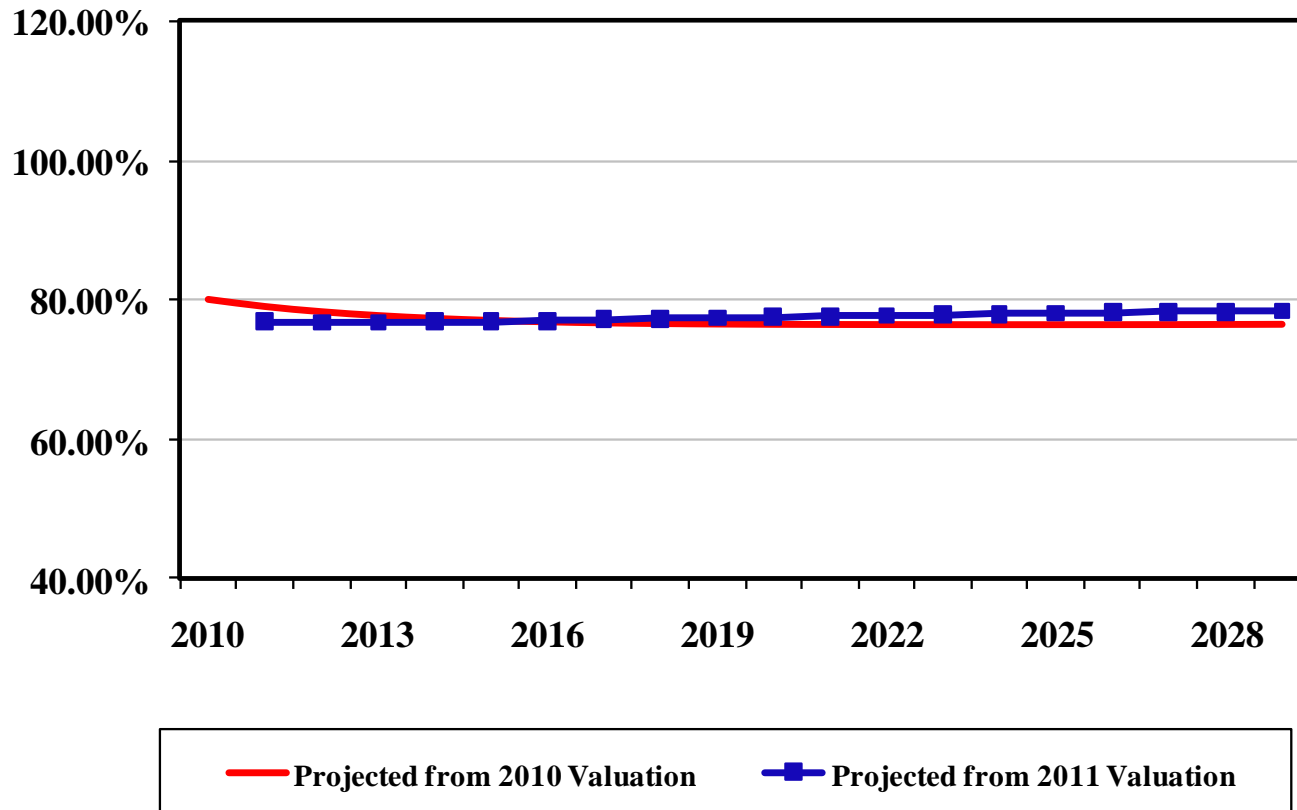
Projection of Employer Contribution Rate from 2011 Valuation



Black line -City of Tulsa contribution increase to 9.4% on 7/1/2011 and 10% on 7/1/2012
Black line- Employee contribution increase to 5% on 7/1/2011 and 6% on 7/1/2012
7.75% return each year



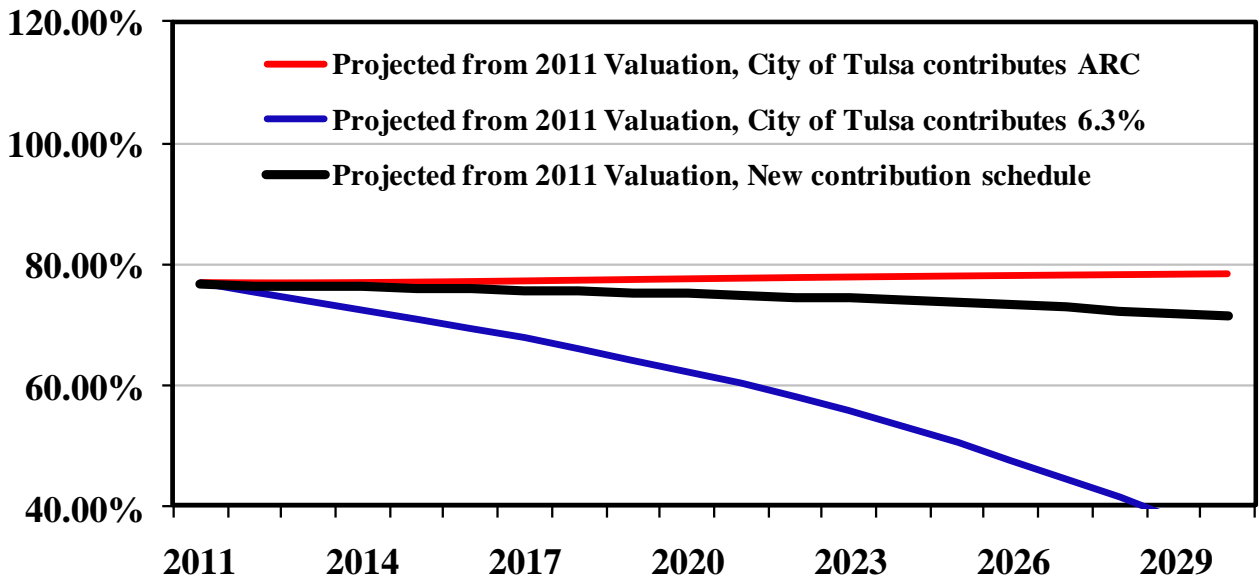
Projection of Funded Ratio from 2011 Valuation



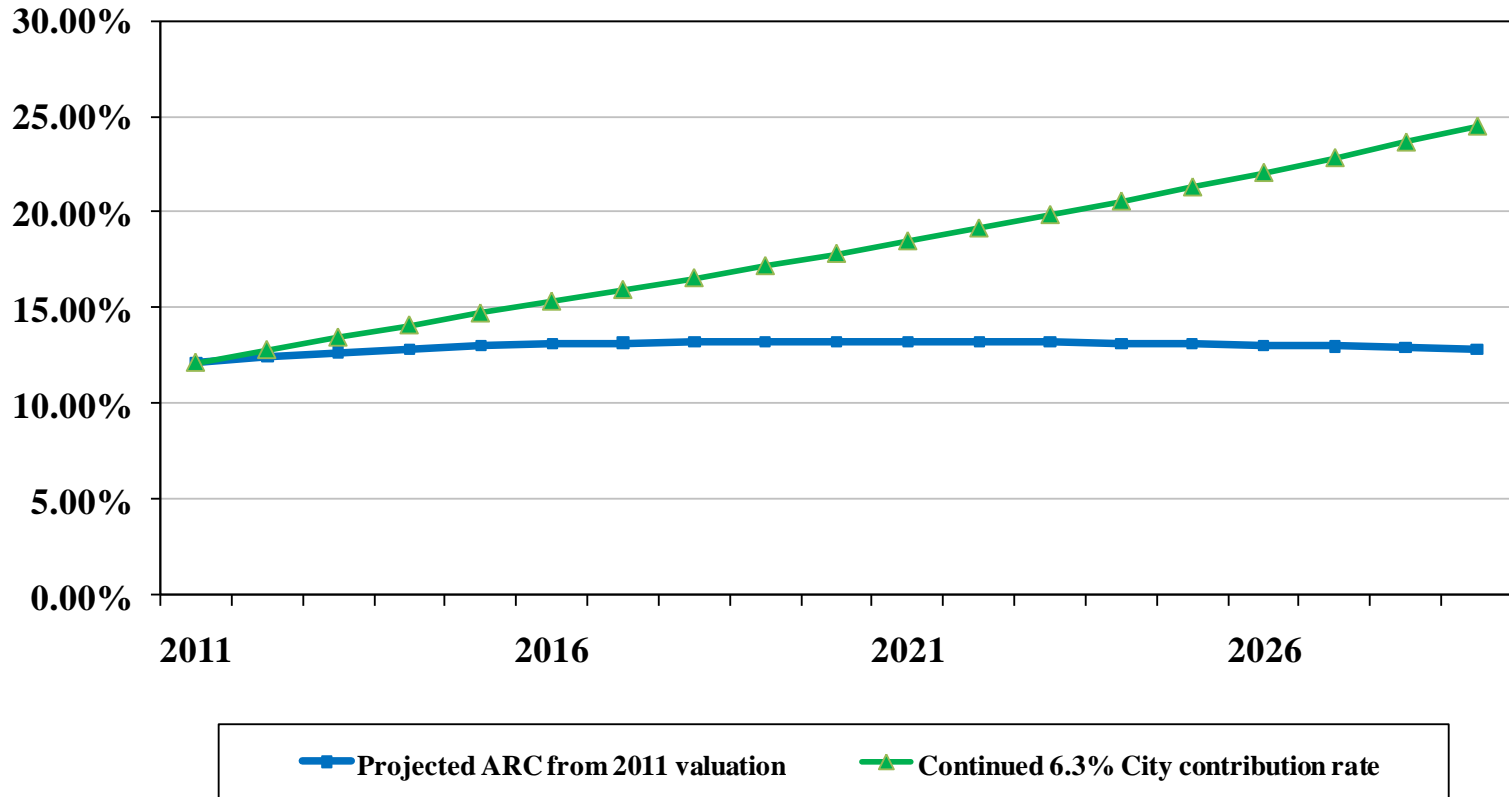
Assumes 8.00% return per year for 2010 Valuation
Assumes 7.75% return per year for 2011 Valuation
Assumes ARC is met each year



Projection of Funded Ratio from 2011 Valuation



What if 6.30% is continued?



7.75% return each year



What does this all mean?

- ◆ While the 2009 “recovery” has decreased the projected contribution requirements, the overall asset returns over the past 10 years have significantly hindered the ongoing sustainability of the current contribution policy (6.30%/4.00%) and Plan benefit structure



What does this all mean?

- ◆ Sustainability can only be improved from three areas based on the actuarial funding equation:

$$C + I = B$$

► Where:

- C = Contributions
- I = Investment Earnings
- B = Benefits

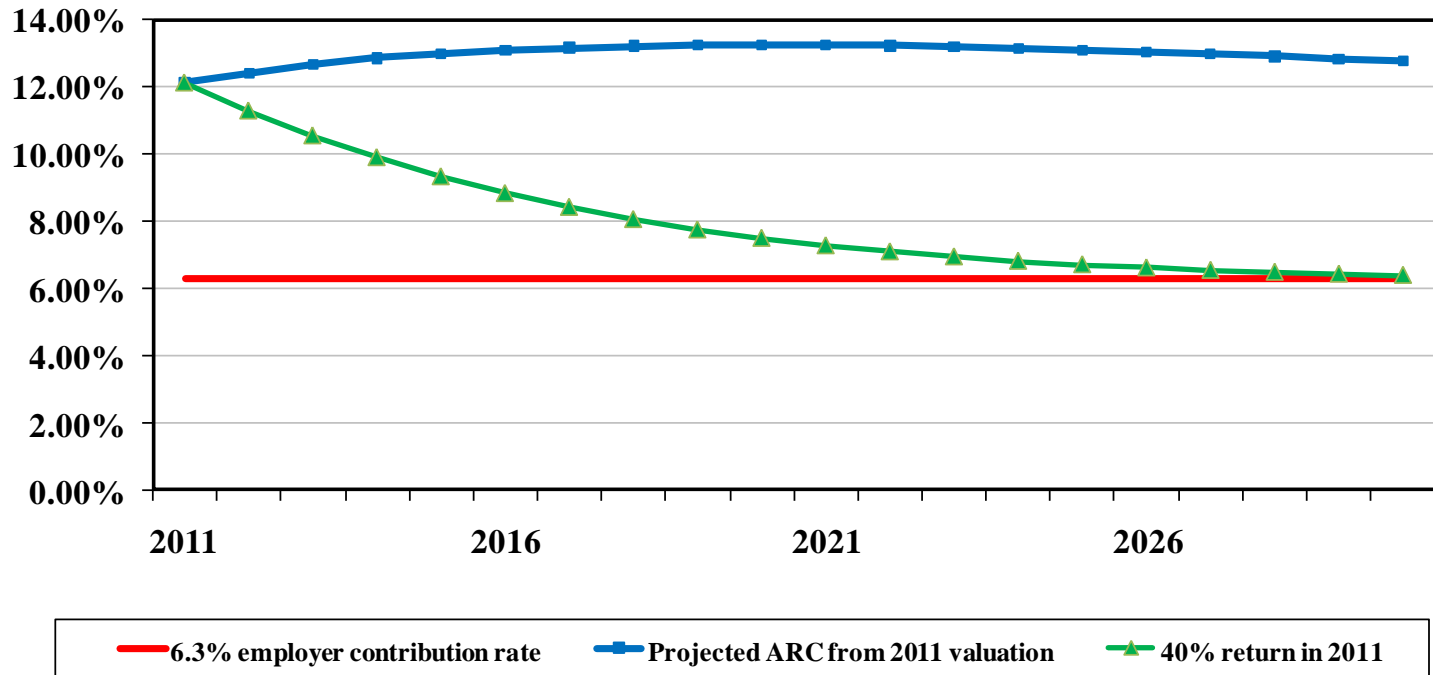


What is the likelihood it comes from investment earnings?

- ◆ It is possible for the investment earnings to recover over the long-term in order to place the Plan back into a sound funded position
 - ▶ But, unlikely



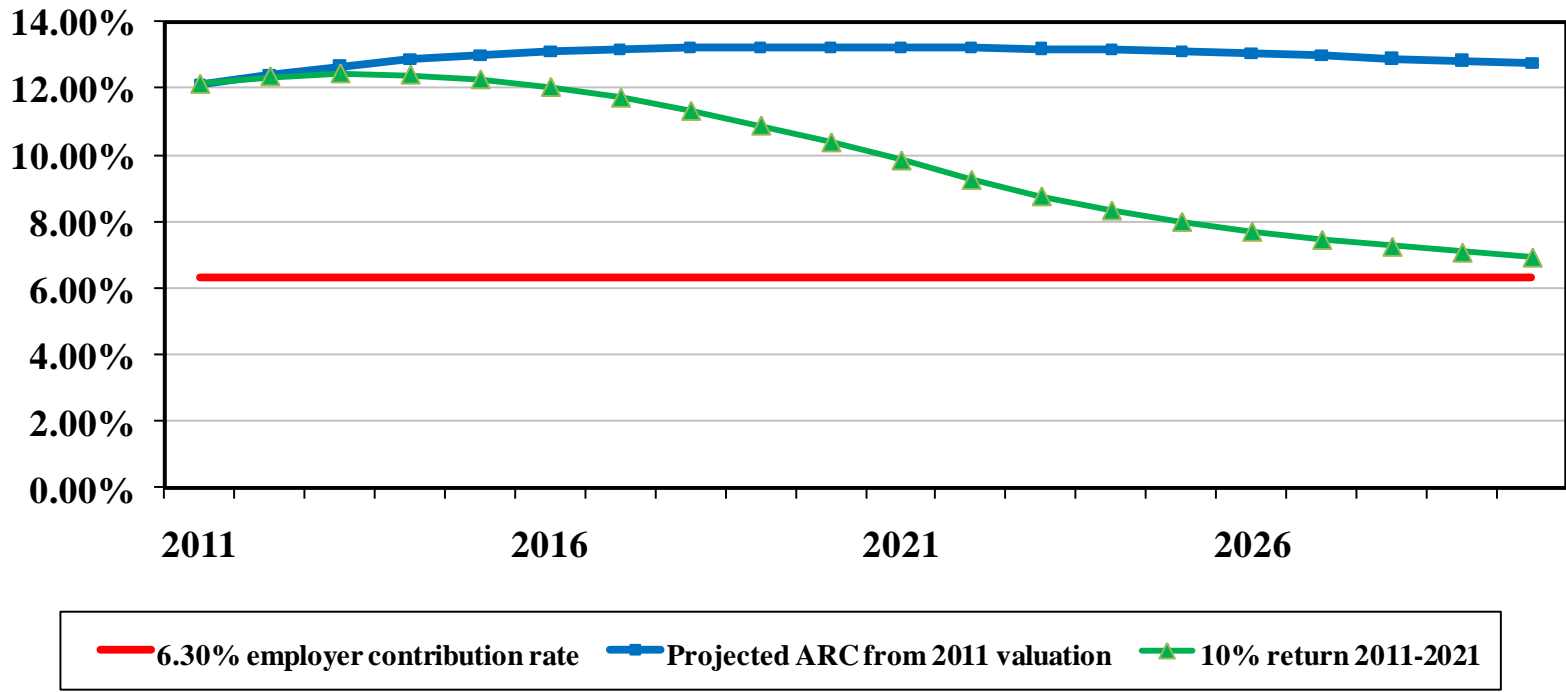
What return is needed to return to 6.30% employer contribution rate?



40% return in 2011, 7.75% return each year thereafter
Assumes contributions equal to the ARC



What return is needed to return to 6.30% employer contribution rate?



10% return in years 2011 through 2021, 7.75% return each year thereafter
Assumes contributions equal to the ARC



Contribution Increases

- ◆ The funding of the Plan is a long-term process, the employer contribution rate does not have to immediately jump to the 30 year “ARC”
- ◆ Incremental increases (0.50% to 1.00% increases per year) will likely increase the sustainability of the Plan and allow the City time to adjust to the long-term higher contribution rate



Experience Study

Summary of changes

◆ Principal economic assumptions:

- » 3.25% inflation rate (currently 3.50%)
- » 4.50% net real rate of investment return (7.75% nominal investment return net of expenses)
- » Current overall assumption is 8.00%

◆ Compensation increases:

- Decrease the overall rate of compensation increases
- Extend the select period for the step-rate promotional/merit increases from 15 to 20 years of service
- Add a 3 year smoothing to the valuation salary



Experience Study

Summary of changes

- ◆ **Non-Economic assumption recommendations:**

- ▶ Slightly increase the rates of termination
- ▶ Update the mortality assumption for active and disabled members plus female annuitants, to reflect the anticipated improvements in life expectancy
- ▶ Reduce the expectation of future disability incidences
- ▶ Slightly reduce the retirement probabilities, particularly at early retirement ages
- ▶ Change the Entry Age Normal Funding Methodology to reflect the probability the employee may leave active employment during the year



Experience Study

Summary of changes

	2011 Valuation Old Assumptions	2011 Valuation New Assumptions
Total Normal Cost %	9.01%	10.48%
AAL (in millions)	\$464.4	\$484.7
AVA (in millions)	372.5	372.5
UAAL (in millions)	91.9	112.2
Funded Ratio	80.2%	76.8%
30 Year ARC	9.91%	12.12%
Projected Employer Contribution*	\$12,031,520	\$14,714,634



Demographic Gains/(Losses) Since 2006 Experience Study

	FY 2010	FY 2009	FY 2008	FY 2007	FY 2006	Average
Salary	\$12.29	\$5.26	\$(0.37)	\$(6.60)	\$(7.16)	\$0.68
Retirement	(0.80)	(1.18)	(0.42)	(0.83)	0.28	(0.59)
Termination	1.31	(2.41)	(0.35)	0.59	(0.90)	(0.35)
Disability Retirements	(0.48)	(0.61)	(0.49)	(0.41)	(0.34)	(0.47)
Pre-retirement mortality	(0.39)	(0.38)	(0.50)	(0.24)	(0.25)	(0.35)
Post-retirement mortality	0.55	1.11	(1.29)	(0.39)	0.57	0.11
New Entrants/Rehires	<u>(0.44)</u>	<u>(0.42)</u>	<u>(1.21)</u>	<u>(0.64)</u>	<u>(0.97)</u>	<u>(0.74)</u>
Total	\$12.04	\$1.37	\$(4.63)	\$(8.52)	\$(8.77)	\$(1.70)
Total excluding Salary	\$(0.25)	\$(3.89)	\$(4.26)	\$(1.92)	\$(1.61)	\$(2.38)

\$ in millions



Summary

- ◆ As shown, the projected funded position has changed dramatically
- ◆ Without a very significant and continued economic recovery, Plan contributions will need to increase to sustain the current level of benefits



Patience

- ◆ Pension Plan Funding is a long-term financial arrangement, so the issue does not have to be solved immediately
 - ▶ Do we even know if the worst is over?
- ◆ Negotiations for a sustainable Plan contribution/benefit strategy should be based on longer term horizons
- ◆ However, something needs to be done



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