



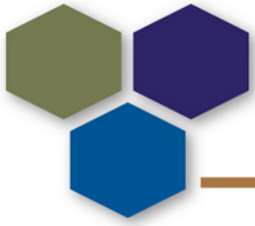
# Wisconsin Retirement System

34<sup>th</sup> Annual Actuarial Valuation as of  
December 31, 2014 and Gain/Loss  
Analysis

June 2015

**GRS**

Gabriel Roeder Smith & Company  
Consultants & Actuaries  
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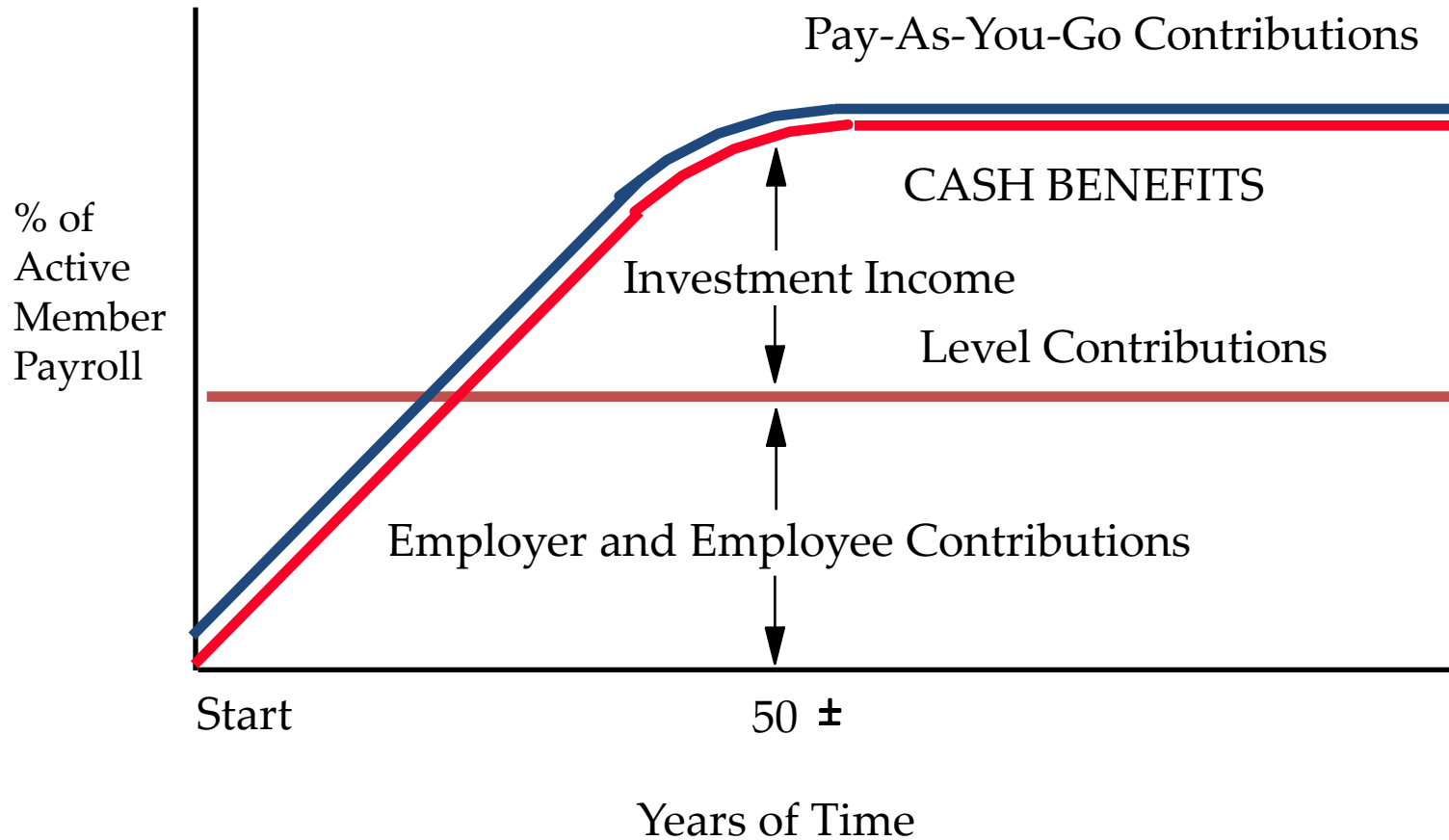
# Funding Objectives

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- ◆ Intergenerational equity with respect to plan costs
- ◆ Stable or increasing ratio of assets to liabilities
- ◆ Stable pattern of contribution rates

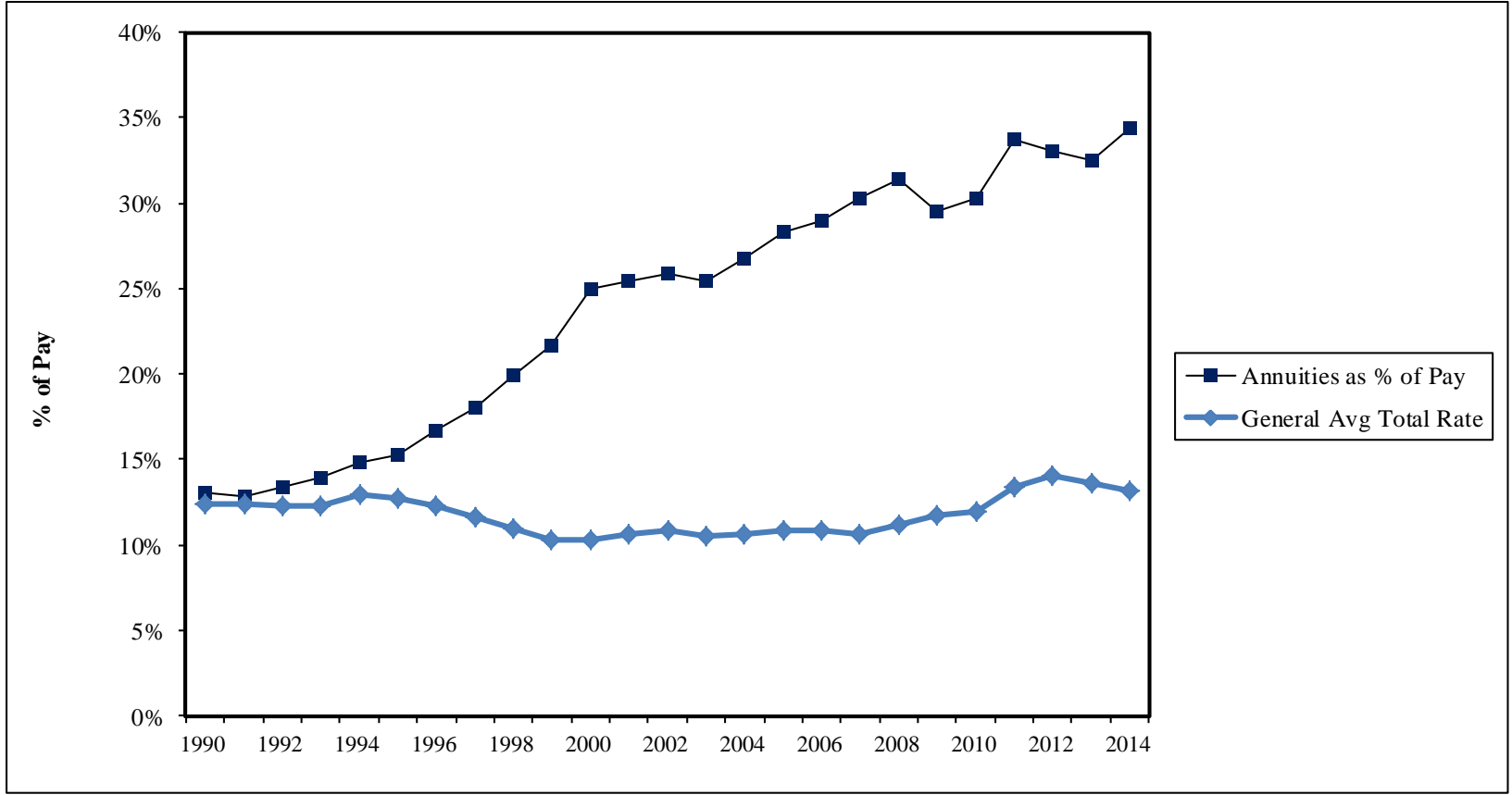


# Financing Diagram





# Annuities as a % of Payroll and WRS Average Total Contribution Rate\*



Annuities are expected to continue to increase as a percent of payroll for several more decades.

\*Average total rate shown is for General Participants

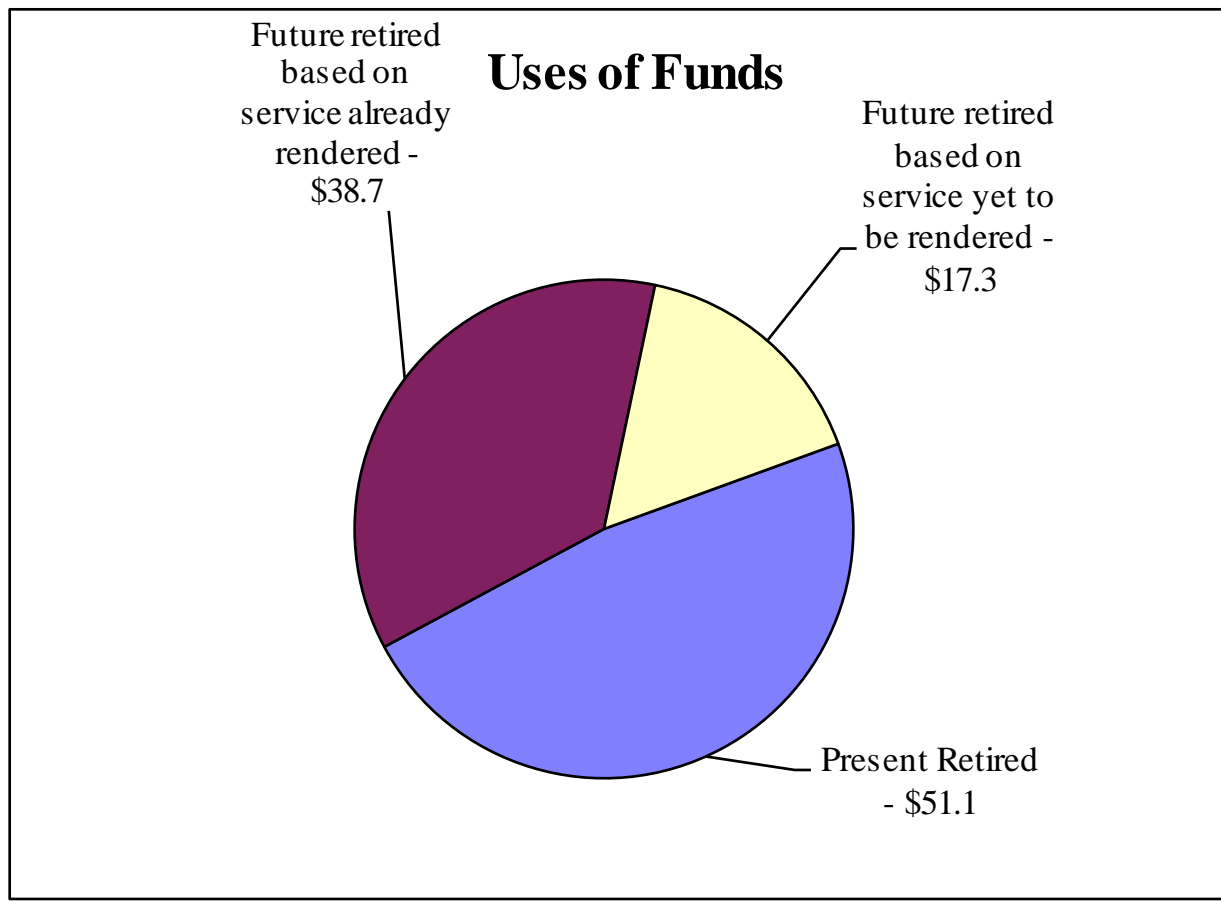


# Active Participants

Valuation Group	Number	Annual Earnings (\$Millions)	Group Averages			
			Earnings	Age	Years of Service	Contribs.
General	232,433	\$11,573.7	\$49,794	45.8	11.6	\$52,539
Executive Group & Elected Officials	1,401	109.3	77,998	55.2	13.8	98,497
Protective Occupation with Social Security	19,533	1,150.8	58,916	40.7	12.9	61,350
Protective Occupation without Social Security	2,733	203.6	74,487	41.4	14.4	77,665
<b>Total Active Participants</b>	<b>256,100</b>	<b>\$13,037.4</b>	<b>\$50,907</b>	<b>45.5</b>	<b>11.7</b>	<b>\$53,731</b>
Prior Year	255,396	\$12,694.6	\$49,706	45.6	11.8	\$51,082



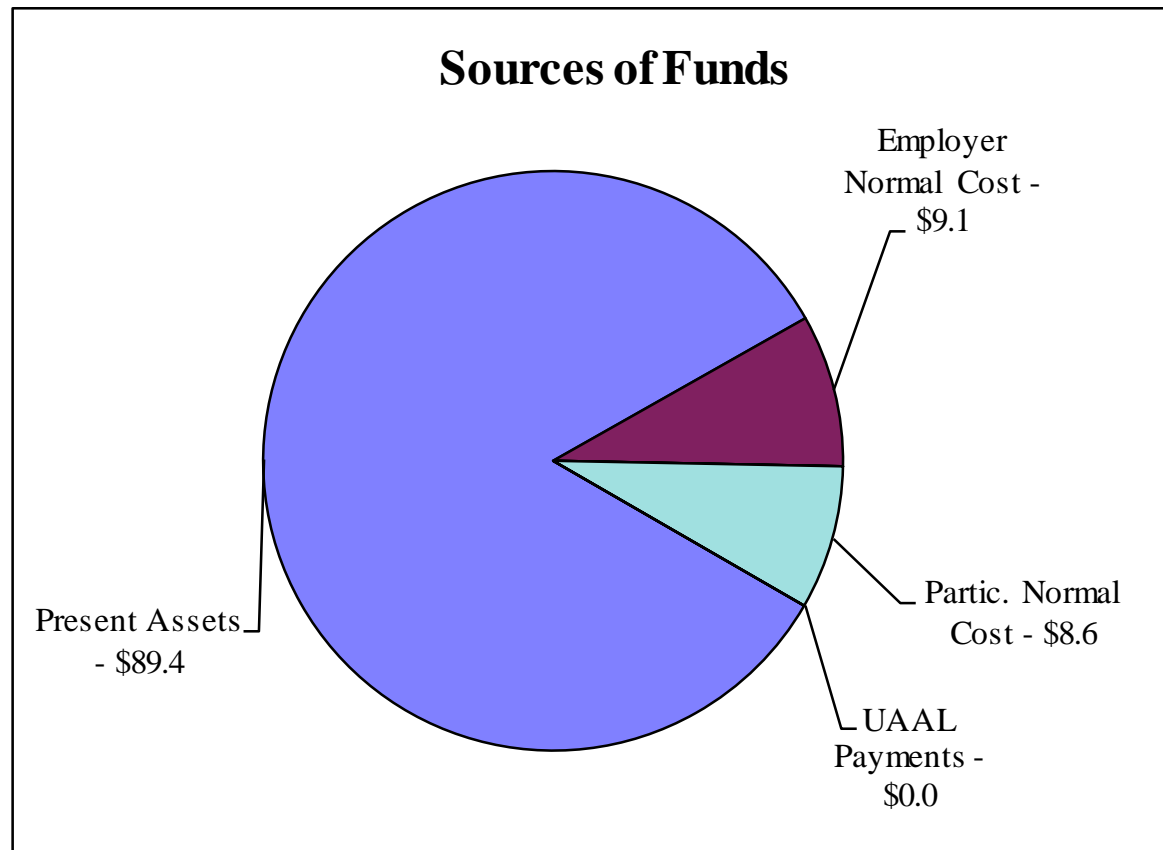
# \$107.1 Billion\* of Benefit Promises to Present Active and Retired Members



\* Present value of future benefits; all divisions combined.



# Sources of Funds for Financing \$107.1 Billion of Benefit Promises





# Summary of December 31, 2014 Valuation Results

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	General Participants		Executives & Elected Officials	
	2016	2015	2016	2015
Employer Normal Cost	6.60%	6.80%	7.80%	7.70%
Participant Normal Cost	6.60%	6.80%	7.80%	7.70%
Total Normal Cost	13.2%	13.6%	15.6%	15.4%
Unfunded Actuarial Accrued Liability (UAAL)	0.0%	0.0%	0.0%	0.0%
<b>WRS Average Total</b>	<b>13.2%</b>	<b>13.6%</b>	<b>15.6%</b>	<b>15.4%</b>





# Summary of December 31, 2014 Valuation Results

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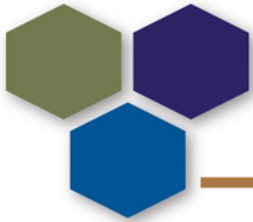
	<b>Protective Occupation</b>			
	<b>With Soc. Sec.</b>		<b>Without Soc. Sec.</b>	
	<b>2016</b>	<b>2015</b>	<b>2016</b>	<b>2015</b>
Employer Normal Cost	9.40%	9.50%	13.20%	13.10%
Participant Normal Cost	6.60%	6.80%	6.60%	6.80%
Total Normal Cost	16.0%	16.3%	19.8%	19.9%
Unfunded Actuarial Accrued Liability (UAAL)	0.0%	0.0%	0.2%	0.3%
<b>WRS Average Total</b>	<b>16.0%</b>	<b>16.3%</b>	<b>20.0%</b>	<b>20.2%</b>



# Comparative Statement of Total Average Contribution Rates

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<b>Valuation 12/31</b>	<b>General</b>	<b>Executive &amp; Elected</b>	<b>Protective with Soc. Sec.</b>	<b>Protective without Soc. Sec.</b>
1990	12.4%	17.6%	17.6%	23.9%
1995	12.7%	15.9%	15.6%	21.3%
2000	10.3%	12.7%	11.8%	14.9%
2005	10.8%	11.6%	13.4%	14.6%
2010	11.9%	14.1%	14.9%	17.5%
2011	13.4%	14.0%	16.4%	19.3%
2012	14.0%	15.5%	17.1%	21.0%
2013	13.6%	15.4%	16.3%	20.2%
2014	13.2%	15.6%	16.0%	20.0%



# Reasons for Contribution Changes

	<b>General</b>	<b>Executive &amp; Elected</b>	<b>Protective with Soc. Sec.</b>	<b>Protective without Soc. Sec.</b>
2014 Normal Cost Rate	13.60%	15.40%	16.30%	20.20%
Effect of Asset Performance	(0.15)%	(0.10)%	(0.20)%	(0.30)%
Effect of Assumption Change	0.00%	0.00%	0.00%	0.00%
Effect of Salary Experience	(0.05)%	0.10%	(0.10)%	0.10%
Demographic and Other Experience	(0.15)%	0.20%	0.00%	0.00%
Member Rate Effect	(0.05)%	0.00%	0.00%	0.00%
2015 Normal Cost Rate	13.20%	15.60%	16.00%	20.00%

The effect of Asset Performance is different for each group because the ratio of assets to payroll is different for each group.



# Impact of Asset Gains/Losses

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- ◆ Asset gains and losses above or below the assumed rate of return are smoothed in over the current year, and four future years
- ◆ Four years after a valuation date, all asset gains or losses known at valuation date are fully recognized
- ◆ Smoothing method in WRS is referred to as the Market Recognition Account (MRA)



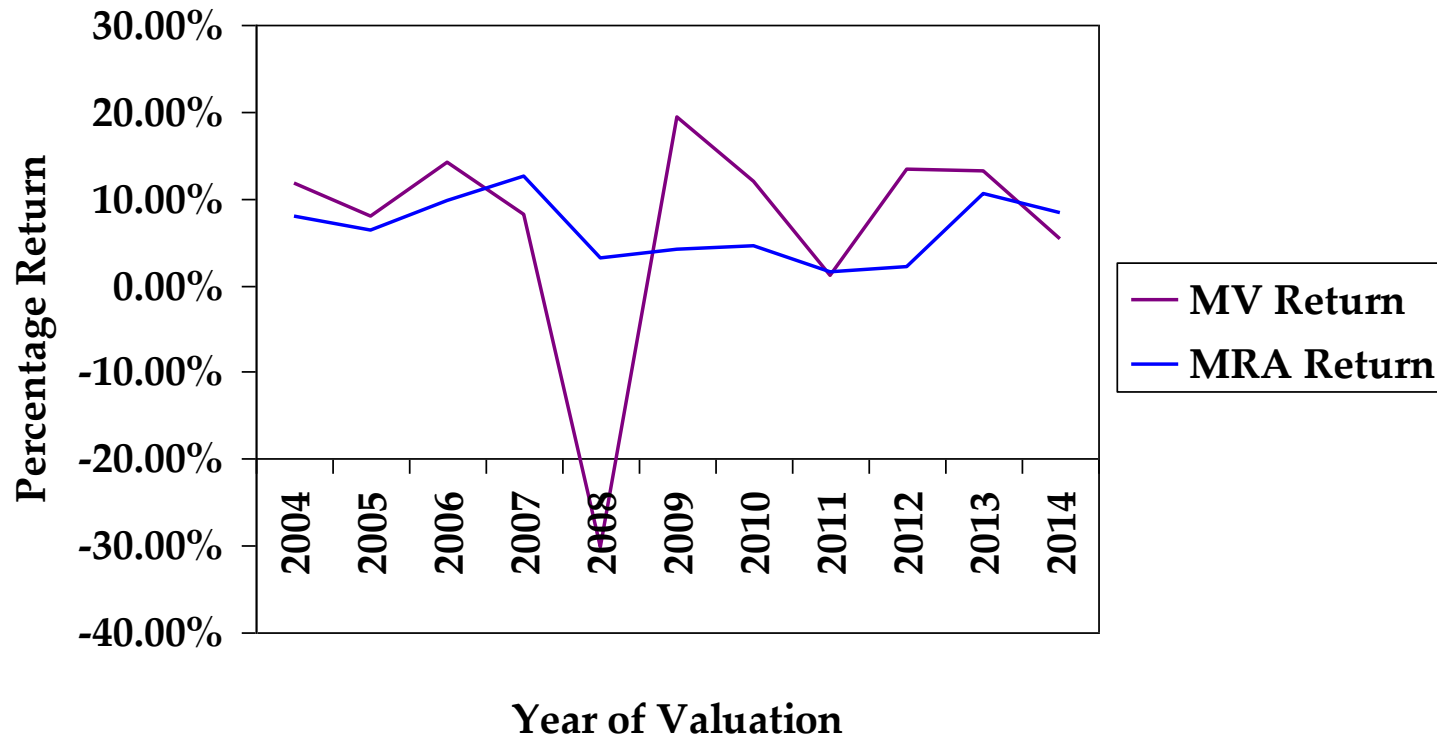
# Operation of Market Recognition Account (MRA) - \$ Millions

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	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Actual Investment Return	\$4,582				
Assumed Investment Return	5,795				
Gain/(Loss) to be phased in	(1,213)				
Phased-in recognition					
• Current year	(243)	?	?	?	?
• First prior year	953	\$(243)	?	?	?
• Second prior year	793	953	\$(243)	?	?
• Third prior year	(936)	793	953	\$(243)	?
• Fourth prior year	399	(936)	793	953	\$(243)
Total recognized gain (loss)	\$ 966	\$ 567	\$1,503	\$710	\$(243)



# Market Value Return vs. Market Recognition (Actuarial) Return





# Concluding Remarks

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- ◆ There are \$2.5 billion of unrecognized gains in the MRA
- ◆ These gains will be recognized over the next 4 years through:
  - ▶ Reductions in contribution rates
  - ▶ A buffer for unfavorable investment performance
  - ▶ Dividends



# Gain/Loss Analysis

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# 2014 Gain/Loss Analysis

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A Gain/Loss Analysis measures differences between actual and assumed experience in each Risk Area.



# WRS Assumption Risk Areas

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## Primary Risks

### Demographic

Normal retirement

Early retirement

Death-in-service

Disability

Other separations

### Economic

Salary increases

Investment return



# Why Have A Gain/Loss Analysis?

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- ◆ To gain an understanding of reasons for contribution rate changes
- ◆ It is a year-by-year measure of the operation of assumptions
- ◆ To determine when assumption changes are needed
- ◆ To understand the nature of risk



# Population Development During 2014

	<u>Actual</u>	<u>Expected</u>
<b>Beginning Census</b>	255,396	
(-) Normal Retirement	3,610	3,910
(-) Early Retirement	3,632	3,883
(-) Death	170	280
(-) Disability Retirement		
- Total Approved	144	246
- Less Pending	47	
- Net New	97	
(-) Other Separations	13,274	11,082
(-) Transfers Out	1,975	
(+) Transfers In	1,975	
(+) New Entrants	21,487	
<b>Ending Census</b>	256,100	



# Population Development During 2014

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**Normal Retirements:** Varied by group and gender. Overall, fewer than expected, but net result on liabilities is a small loss.

**Early Retirements:** Lower than expected, overall producing a small loss.

**Deaths:** Among active participants were lower than expected. The net result for the past year was a small gain.

**Disabilities:** Higher than expected, producing a gain.

**Other Separations:** Varied by group, gender and service. The net result was a small gain.



# Components of Total Gain/Loss

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	<u>Gain/(Loss) in Millions</u>	
	<u>2013</u>	<u>2014</u>
Economic Risk Areas	\$1,072	\$349
Decrement Risk Areas	1	14
Other Activity	<u>(137)</u>	<u>(140)</u>
Total Gain (Loss)	\$ 936	\$ 223
Effect of Assumption Changes	<u>0</u>	<u>0</u>
Net Gain/(Loss)	\$ 936	\$ 223



# Investment Earnings in 2014 (Active Participants)

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	<u>\$ Millions</u>
A. Average balance on Participant and Employer Accumulation Reserves	\$35,940
B. Expected earnings: 7.2%	2,588
C. Earnings credited to Participant and Employer Accumulation Reserves	2,993
D. Gain (loss) from earnings: C - B	\$ 405



# Investment Earnings in 2014 (Active Participants)

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- ◆ \$405 million is the total recognized asset gain for the year
- ◆ However, part of the total gain/loss is allocated to Variable Excess accounts
- ◆ Some of the gain flows through to members via the operation of Money Purchase minimum benefits
- ◆ Must net these out to determine remaining core fund gain or loss
- ◆ Remaining portion affects contribution rates





# Investment Earnings in 2014 (Active Participants)

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	<u>\$ Millions</u>
Gross Gain/(Loss) for the Year	\$405
Less Estimate Gain/(Loss) due to Money Purchase	154
Less Estimated Gain/(Loss) due to Variable Excess	<u>(74)</u>
Net Core Fund Asset Gain/(Loss)	\$ 325



# Comparative Schedule of Experience Gains/Losses by Decrement

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## Divisions Combined (Millions)

	<u>2013</u>	<u>2014</u>
Normal Retirement	\$ (12.0)	\$ (10.4)
Early Retirement	(32.5)	(19.7)
Disability Retirement	19.1	20.3
Death with Benefit	(5.3)	0.2
Other Separations	31.8	23.2
	<u>          </u>	<u>          </u>
Total	\$ 1.1	\$ 13.6
As % of Liabilities	<0.01%	<0.04%



# Salary Related Gain/Loss

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- ◆ Pay increases were overall less than expected, resulting in a gain

	<b>Gain/Loss</b>	<b>% of Group</b>
	<b>\$ Millions</b>	<b>Liabilities</b>
General	\$14.5	0.0 %
Executive & Elected	(0.7)	(0.3)%
Protective w/Soc. Sec.	13.0	0.3 %
Protective w/o Soc. Sec.	(3.3)	(0.4)%
	<u>\$23.5</u>	<u>0.1 %</u>



# Concluding Remarks

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- ◆ Recognition of remaining prior asset gains are expected over the next few years
- ◆ This Gain/Loss Analysis is the third in a regular 3-year experience cycle
- ◆ This study together with the 2012 and 2013 results will form the basis for the next experience study



# Headlines

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# Recent Headlines

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- ◆ New Mortality Tables will impact Pension Plan Management
- ◆ Actuarial Standards Board to hold hearing on Public Pension Funding
- ◆ GASB releases new standards for Other Postemployment Benefit plans (OPEBs)



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- This is one of multiple documents comprising the actuarial report. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the full report entitled "Thirty-Fourth Annual Actuarial Valuation and Gain Loss Analysis".
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