



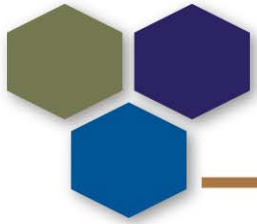
Actuarial Funding & TMRS

Building a Foundation for the Future
March 2, 2009
Hyatt Regency Austin

GRS

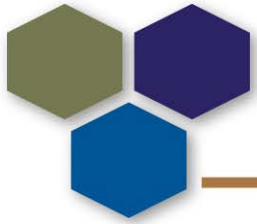
Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

Copyright © 2009 GRS – All rights reserved.



Introduction to GRS

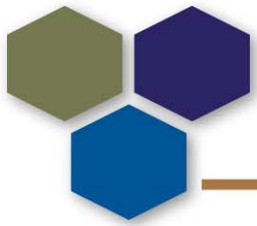
- ◆ GRS is the largest provider of pension and actuarial consulting services to the public sector in the United States
- ◆ We provide actuarial and benefit consulting services to over 600 public sector clients nationally
- ◆ We serve as the actuary to over 40 statewide retirement and healthcare plans
- ◆ The public sector is our niche in the marketplace
 - ▶ Over 90% of our client base is in the public sector
- ◆ Our Texas experience and client list is second to none



Texas Pension Experience

Along with TMRS, we serve Boards of Trustees that represent:

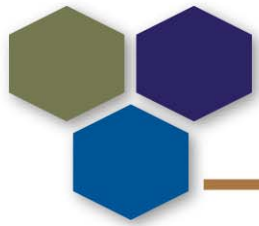
- ◆ Teachers Retirement System
- ◆ City of Houston
- ◆ City of Dallas
- ◆ City of Fort Worth
- ◆ San Antonio Transit VIA
- ◆ City of Austin
- ◆ DFW Airport
- ◆ City of Plano
- ◆ City of Irving



Bottom Line —

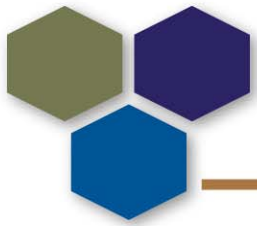
What Does GRS Want to Bring to TMRS?

- ◆ A sustainable benefits program for many years to come
 - ▶ Rate Stabilization
 - ▶ Transparency of Actuarial Assumptions
 - ▶ Helping to build and maintain a “Reserve” for the TMRS Fund



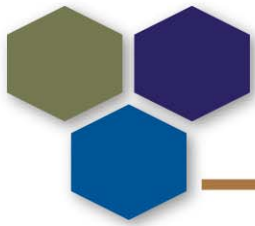
Our First Valuation — Three Known Items of Influence

1. Lag time between the valuation date and when the contribution actually gets paid
2. The 5.0% MAF crediting rate for 2008 vs. the 7.0% annual return – that was expected
3. GRS' recommended Assumption changes as of December 31, 2008
 - ▶ Approved in December 2008 by the Board



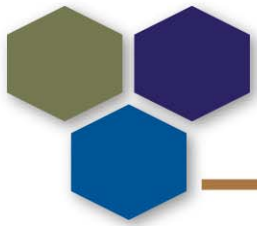
What is the “Lag”

- ◆ The “Lag” refers to the time delay between the actuarial valuation date and the date the contribution rate becomes effective
- ◆ For TMRS member cities, the “Lag” is one year
 - ▶ Actuarial Valuation as of December 31, 2007 set the rate effective for Calendar Year 2009
- ◆ It is a very common practice for there to be a lag between the valuation date and the effective period for contributions



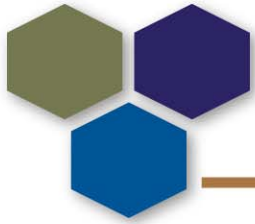
Real Example – a TMRS City

◆ Payroll during 2008	\$14,500,000	
◆ Rate determined by December 31, 2007 valuation (first year of projected unit credit cost method)	20.25%	
◆ Contributions in 2008 expected to be received based on 2007 valuation: ($\$14,500,000 \times 20.25\%$)		\$2,936,250
◆ Actual rate contributed in 2008 was determined by the December 31, 2006 valuation (last year of unit credit)	13.75%	
◆ Actual contributions received in 2008: ($\$14,500,000 \times 13.75\%$)		<u>\$1,993,750</u>
◆ This shortfall created by the “Lag”, added directly to the Unfunded Actuarial Accrued Liability (UAAL)		\$942,500
◆ Approximate increase in the rate determined by the December 31, 2008 valuation created by this “Lag” – as a percentage of payroll		0.35%



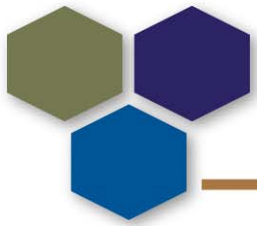
5.0% MAF Credit for 2008

- ◆ The actuarial assumption for the expected long term Municipality Accumulation Fund (MAF) crediting rate was 7.0% for 2008
- ◆ The actual crediting rate approved by the Board of Trustees was 5.0%
- ◆ This creates a loss on the UAAL, and this loss will be amortized beginning with the December 31, 2008 actuarial valuation



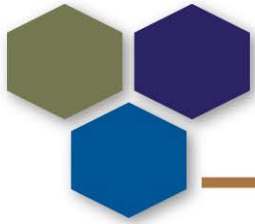
Real Example – a TMRS City

◆ MAF Asset Balance as of December 31, 2007	\$27,000,000	
◆ Actuarial Assumption	7.00%	
◆ Expected Investment Earnings		\$1,890,000
◆ Actual MAF crediting rate for 2008	5.00%	
◆ Actual Investment Earnings		<u>\$1,350,000</u>
◆ Actuarial Loss on assets, gets added directly to the UAAL		\$540,000
◆ Approximate increase in the rate determined by the December 31, 2008 valuation created by the asset loss – as a percentage of payroll		0.20%



Assumption Changes for 2008 Valuation

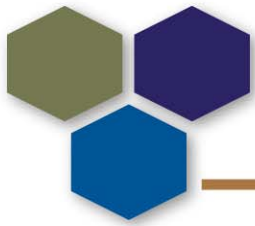
- ◆ The Board approved the following changes to the current actuarial assumption package to be implemented for the upcoming December 31, 2008 actuarial valuation:
 1. Salary scale assumption be applied immediately instead of a one year delay
 2. Explicitly recognize the COLA associated with the annuitization of the Employee Savings Fund (ESF) balances at retirement and accounting for occurrence of partial lump sum distributions
 3. Set the Municipality Accumulation Fund (MAF) discount rate at 7.50% to reflect the expectation of a reserving policy for the TMRS Fund



Sample Multi-City Estimated Cost Impact

Number of Employers	Employer Match	Repeating Enhancements	Rate based on Current Assumptions	Salary Scale Impact (Additive)	Cola/Discount Rate Impact (Additive)	Net Rate Impact (Additive)	Rate based on New Assumptions
186	1.0	No	4.09% 2.24%-5.51%	0.06% 0.02%-0.22%	(0.18%) (0.08%)-(0.28%)	(0.12%) (0.03%)-(0.17%)	3.97% 2.15%-5.44%
45	1.5	No	5.11% 3.48%-6.42%	0.14% 0.02%-0.32%	(0.23%) (0.39%)-(0.09%)	(0.09%) (0.17%)-0.03%	5.02% 3.44%-6.48%
108	2.0	No	7.88% 5.13%-9.49%	0.36% 0.08%-0.43%	(0.47%) (0.51%)-(0.22%)	(0.11%) (0.22%)-0.03%	7.76% 5.03%-9.56%
53	1.0	Yes	6.88% 5.17%-8.40%	0.20% 0.09%-0.38%	0.22% 0.06%-0.40%	0.42% 0.26%-0.69%	7.30% 5.50%-8.94%
72	1.5	Yes	9.22% 6.47%-12.32%	0.43% 0.29%-0.56%	0.05% (0.10%)-0.19%	0.48% 0.24%-0.71%	9.70% 6.72%-12.37%
356	2.0	Yes	14.87% 11.26%-18.27%	0.80% 0.63%-1.03%	(0.21%) (0.38%)-(0.05%)	0.59% 0.38%-0.82%	15.46% 11.74%-19.06%

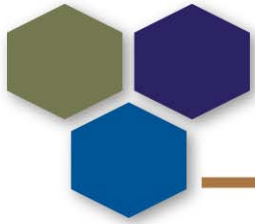
Based on December 31, 2007 valuation data
Range provided represents the 25th and 75th percentile



Projected Reconciliation of Contribution Rates

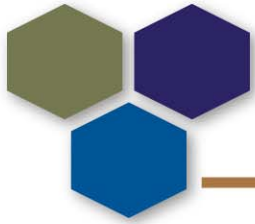
Group 1: 1:1 Employer Match, No repeating COLA

		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	1.80%	3.97%	7.03%
b.	Phase In Deferral (7 years)	<u>(0.01%)</u>	<u>(0.04%)</u>	<u>(0.21%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	1.79%	3.93%	6.82%
2. a.	Contribution "Lag"	(0.02%)	0.00%	0.07%
b.	5% MAF Crediting Rate Loss	0.05%	0.09%	0.09%
c.	Assumption Changes	<u>(0.06%)</u>	<u>(0.37%)</u>	<u>(0.35%)</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	1.77%	3.69%	6.84%
3. a.	Phase in Deferral (6 years)	<u>(0.01%)</u>	<u>(0.03%)</u>	<u>(0.18%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	1.76%	3.66%	6.66%



Projected Reconciliation of Contribution Rates Group 2: 1.5:1 Employer Match, No repeating COLA

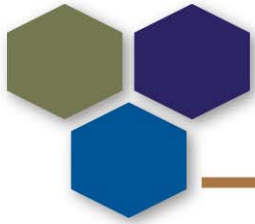
		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	2.89%	4.88%	7.38%
b.	Phase In Deferral (7 years)	<u>0.00%</u>	<u>0.00%</u>	<u>(0.27%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	2.89%	4.88%	7.11%
2. a.	Contribution "Lag"	(0.06%)	(0.01%)	0.02%
b.	5% MAF Crediting Rate Loss	0.07%	0.07%	0.14%
c.	Assumption Changes	<u>(0.11%)</u>	<u>(0.16%)</u>	<u>0.01%</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	2.79%	4.78%	7.55%
3. a.	Phase in Deferral (6 years)	<u>0.00%</u>	<u>0.00%</u>	<u>(0.23%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	2.79%	4.78%	7.32%



Projected Reconciliation of Contribution Rates

Group 3: 2:1 Employer Match, No repeating COLA

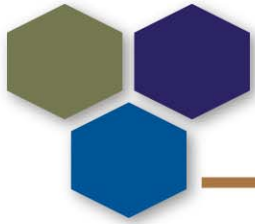
		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	4.19%	7.02%	10.93%
b.	Phase In Deferral (7 years)	<u>0.00%</u>	<u>(0.01%)</u>	<u>(0.05%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	4.19%	7.01%	10.88%
2. a.	Contribution "Lag"	(0.09%)	(0.08%)	(0.05%)
b.	5% MAF Crediting Rate Loss	0.09%	0.09%	0.15%
c.	Assumption Changes	<u>(0.15%)</u>	<u>(0.07%)</u>	<u>0.04%</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	4.04%	6.96%	11.07%
3. a.	Phase in Deferral (6 years)	<u>0.00%</u>	<u>(0.01%)</u>	<u>(0.04%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	4.04%	6.95%	11.03%



Projected Reconciliation of Contribution Rates

Group 4: 1:1 Employer Match, Repeating COLA

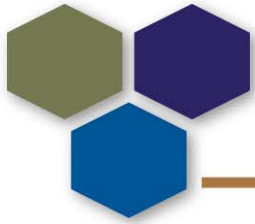
		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	4.30%	6.65%	9.78%
b.	Phase In Deferral (7 years)	<u>(0.89%)</u>	<u>(1.72%)</u>	<u>(2.35%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	3.41%	4.93%	7.43%
2. a.	Contribution "Lag"	0.11%	0.12%	0.14%
b.	5% MAF Crediting Rate Loss	0.09%	0.07%	0.07%
c.	Assumption Changes	<u>0.10%</u>	<u>0.51%</u>	<u>0.62%</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	4.60%	7.35%	10.61%
3. a.	Phase in Deferral (6 years)	<u>(0.85%)</u>	<u>(1.91%)</u>	<u>(2.54%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	3.75%	5.44%	8.07%



Projected Reconciliation of Contribution Rates

Group 5: 1.5:1 Employer Match, Repeating COLA

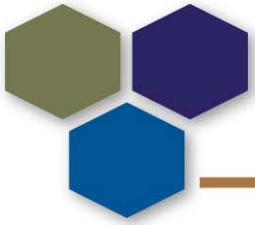
		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	5.46%	8.28%	13.49%
b.	Phase In Deferral (7 years)	<u>(1.10%)</u>	<u>(1.78%)</u>	<u>(3.20%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	4.36%	6.50%	10.29%
2. a.	Contribution "Lag"	0.07%	0.11%	0.20%
b.	5% MAF Crediting Rate Loss	0.09%	0.09%	0.13%
c.	Assumption Changes	<u>0.22%</u>	<u>0.52%</u>	<u>0.73%</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	5.84%	9.00%	14.55%
3. a.	Phase in Deferral (6 years)	<u>(1.13%)</u>	<u>(1.97%)</u>	<u>(3.37%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	4.71%	7.03%	11.18%



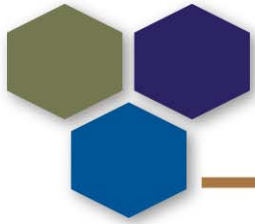
Projected Reconciliation of Contribution Rates

Group 6: 2:1 Employer Match, Repeating COLA

		<u>Lower Third</u>	<u>Middle Third</u>	<u>Higher Third</u>
		I.	II.	III.
1. a.	Full Rate from December 31, 2007 Valuation	9.55%	14.77%	20.11%
b.	Phase In Deferral (7 years)	<u>(1.49%)</u>	<u>(2.77%)</u>	<u>(4.51%)</u>
c.	Minimum Required Contribution for 2009 (1a + 1b)	8.06%	12.00%	15.60%
2. a.	Contribution "Lag"	0.11%	0.19%	0.30%
b.	5% MAF Crediting Rate Loss	0.09%	0.12%	0.16%
c.	Assumption Changes	<u>0.40%</u>	<u>0.63%</u>	<u>0.83%</u>
d.	Projected Full Rate from December 31, 2008 Valuation (1a + 2a + 2b + 2c)	10.15%	15.71%	21.40%
3. a.	Phase in Deferral (6 years)	<u>(1.62%)</u>	<u>(2.91%)</u>	<u>(4.58%)</u>
b.	Minimum Required Contribution for 2010 (2d + 3a)	8.53%	12.80%	16.82%



What about December 31, 2009?

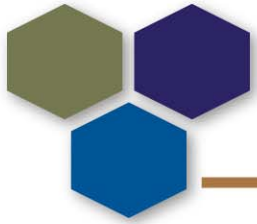


Projected Contribution Rates for 2011

For Group 6: 2:1 Employer Match, Repeating COLA

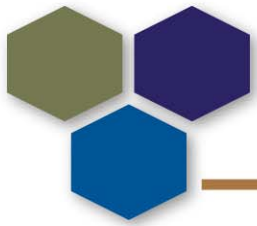
		<u>No Phase-in during 2009</u>		<u>With Phase-in</u>	
		<u>5% CR</u>	<u>7.5% CR</u>	<u>5% CR</u>	<u>7.5% CR</u>
MAF Crediting for 2009:					
1.	Projected Full Rate from December 31, 2008 Valuation	21.40%	21.40%	21.40%	21.40%
b.	Phase In Deferral (6 years)	<u>(3.86%)</u>	<u>(3.86%)</u>	<u>(3.86%)</u>	<u>(3.86%)</u>
c.	Minimum Required Contribution for 2010 (1a + 1b)	17.54%	17.54%	17.54%	17.54%
2. a.	Contribution "Lag" (20.11% vs. 21.40%)	0.07%	0.07%	0.07%	0.07%
b.	Paying Phase-In Rate in 2009			0.27%	0.27%
c.	5% MAF Crediting Rate Loss	<u>0.22%</u>	_____	<u>0.22%</u>	_____
d.	Projected Full Rate from December 31, 2009 Valuation (1a + 2a + 2b + 2c)	21.69%	21.47%	21.96%	21.74%
3. a.	Phase in Deferral (5 years)	<u>(3.22%)</u>	<u>(3.22%)</u>	<u>(3.22%)</u>	<u>(3.22%)</u>
b.	Minimum Required Contribution for 2011 (2d + 3a)	18.47%	18.25%	18.74%	18.52%

19 Note: includes no unexpected plan experience



Goal of the Reserve Fund

- ◆ What makes TMRS structure unique?
 - ▶ Guaranteed asset pools
- ◆ The Reserve Fund needs to be large enough to absorb the “additional” volatility created by the guaranteed asset pools, not the entire volatility of the TMRS fund



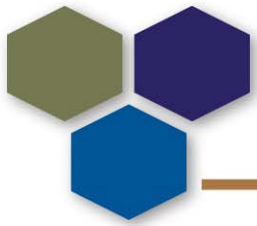
The Need for a Reserve Account within TMRS

◆ Without a Reserve

- ▶ Very high volatility for the MAF fund
- ▶ Volatility of the MAF fund will put a “drag” on the returns, lowering the effective annual crediting rate
- ▶ High probability of increasing employer contribution rates

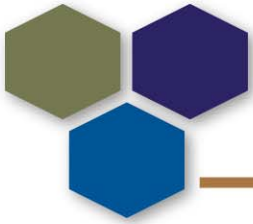
◆ With a Reserve

- ▶ The volatility to MAF fund drops significantly
- ▶ Probability of decreasing employer contribution rates over time
- ▶ Some form of gain-sharing may be acceptable after Reserve is established

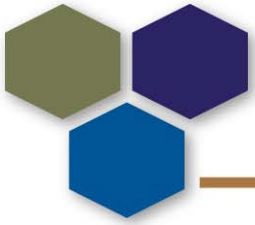


What Happens if 2009 Legislation (HB360/SB908) Does Not Pass?

- ◆ Costs will go up and benefits will likely go down



- ◆ 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.
- ◆ This presentation expresses the views of the author and does not necessarily express the views of the employer, Gabriel, Roeder, Smith & Company.



Questions?

GRS