Presentation of Actuarial Review of 2010 Valuations to Minnesota Legislative Commission on Pensions and Retirement

Presented by:

Bill Hogan, F.S.A.

Tim Herman, F.S.A.

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PRACTICE AREAS

- Employee benefits, investment, and compensation consulting services
- Health consulting services
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Project Team for Minnesota 2010 Valuation Review

- **Primary Actuaries and Consultants**
  - Bill Hogan, FSA, EA, MAAA
  - Tim Herman, FSA, EA, MAAA
- **Support Actuaries**
  - Allan Bittner, FSA, EA, MAAA
  - Tim Bleick, FSA, EA, MAAA
- **Peer Review Actuaries**
  - Glenn Bowen, FSA, EA, MAAA
  - Kathy Warren, FSA, EA, MAAA
- **Actuarial Staff**
  - Jack Chmielewski, ASA, EA, MAAA
  - Nicolas Lahaye, ASA, MAAA
  - Guy Blazei
  - Audrey Bellot

Plans Reviewed

Minnesota State Retirement System (MSRS)	Public Employees Retirement Association (PERA)	Teachers Retirement Association (TRA)	Duluth Teachers Retirement Fund Association (DTRFA)	St. Paul Teachers Retirement Fund Association (St.PTRFA)
• General • Correctional • State Patrol • Elective State Officials • Legislature • Judges	• General • Correctional • Police and Fire • MERF Division			

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Purpose and Scope of Review

- Types of actuarial audits
  - Replication
  - Limited scope or Peer Review
- Both address the key components in the valuation process, but in different ways
  - Membership data
  - Financial data
  - Benefits valued
  - Actuarial assumptions
  - Actuarial methods

Replication vs. Limited Scope Audit

- Replication:
  - Commission actuary reproduces all of the steps in the valuation and attempts to reconcile the total valuation results to that of the fund actuary.

7/1/2010
Replication Audit:
PERA General
MSRS General
PERA MERF

- Limited Scope:
  - Detailed review of a small group of test lives which are specifically selected to address key valuation calculations
  - Cannot quantify the cost impact of any issues raised other than in general terms
- Goal of either type of audit is to provide assurance that the liabilities and costs are reasonable.
  - Replication gives higher degree of confidence level.

Audit Guidelines

- No formal or published guidance
- Differences are generally analyzed as percentages
  - Small percentages of very large numbers can be large numbers
- Reasonable differences exist
  - Valuation software have inherent differences
  - Different approaches may be reasonable and acceptable
- Actuarial valuation process is not an exact science. Variability exists and small percentage changes do not change the overall financial results.

Example of a small percentage difference for TRA:

0.5% difference on $22 B of TRA accrued liability is $110 M

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Highlights of Changes Reflected in 7/1/2010 Valuations: Plan Provisions

- **Plan provisions**
  - Post-retirement increase reduced until 90% funded ratio reached
  - Contribution rate increases
  - Reduced augmentation on deferred benefits
  - Increased years of service required for vested pension benefit
  - Lowered interest rate on refund of member contributions to future terminated members
  - Specific changes vary on a fund-by-fund basis

Approximately $6 B decrease in accrued liability due to plan changes

Highlights of Changes Reflected in 7/1/2010 Valuations: Actuarial Assumptions and Methods

- **Actuarial assumptions**
  - MSRS-General, PERA-General, PERA MERF, St.PTRFA and TRA
  - Mortality tables updated
  - Fine tuning of other demographic assumptions
  - Future salary increases and payroll growth assumption set by statute. Proposed changes were not reflected in July 1, 2010 valuation results

- **Actuarial Methods**
  - Amortization date extension

IMPACT:

- **Modest increase in accrued liability due to assumption changes**
- **More time to amortize unfunded accrued liability with method change**

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Key Findings

- Actuarial calculations generally accurate, appropriate and consistent with LCPR standards of work.
- Any exceptions noted are not expected to substantively alter the valuation results.
- Focus on year-to-year consistency of reporting results.

General Comments

- Most funds experienced increases in funded ratio and decrease in contribution deficiency
- Modest difference in actuarial and market value of assets
  - Most around 15% difference
  - Unrecognized investment losses
    - Even with 8.5% return on market value, there will be investment losses on actuarial value of assets.
    - Can you “earn your way out”?
- Evaluate long-term funding of the plans
  - Recent changes have helped
  - Monitor results and trends

General Comments

- Cost of Living Adjustment (COLA) after the 2010 Omnibus Pension Legislation
  - Fund pays a lower COLA until "financial stability" is restored for fund
  - "Financial Stability": $\dfrac{\text{Market Value of Assets}}{\text{Actuarial Accrued Liabilities}} \geq 90\%$
  - Based on fund actuaries' analysis, 2010 actuarial valuation for most funds assume lower COLA paid for all future years
  - Issues
    - Further changes to address long-term funding
      - Should COLA go up first?
    - Technical issues
      - How much COLA should be paid if the full COLA reduces "financial stability" measure below 90%?
      - How should an actuarial valuation model a fund where "financial stability" is projected in future years?

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General Comments

- Experience Study/Actuarial Assumptions
  - Revised actuarial assumptions used at July 1, 2010 for 5 funds
  - We recommend experience study for remaining funds with new assumptions reflected as warranted
    - Revised edition of Actuarial Standards of Practice governing selection of demographic assumptions
      - Adopted by Actuarial Standards Board of American Academy of Actuaries in Sept. 2010
      - Will first apply to July 1, 2011 actuarial valuations
    - Requirements for “Mortality Improvement” assumption with revised edition:
      - Adjust mortality rates for mortality improvement prior to measurement date
      - Include assumption for expected mortality improvement after measurement date
  - Bases for mortality assumption if warranted
    - Experience Study
    - Assumption for a Minnesota fund expected to produce similar results (e.g. DTRFA/StPTRFA use same assumptions as TRA?)
    - Standard published table

Specific Comments: MERF Division of PERA

2010 Omnibus Pension Bill

CURRENT STATE

7/01/2010 Valuation Results *

DOLLARS IN THOUSANDS

A. Unfunded Accrued Liability	$ 442,118
B. Statutory Contributions	
1. Member contributions	866
2. Regular employer contributions	866
3. Additional employer contributions	4,138
4. State contributions	22,750
5. TOTAL	$ 28,620
C. Actuarially required contribution	
1. Normal cost	520
2. Amortize unfunded accrued liability by July 1, 2031	45,846
3. Expenses	1,492
4. TOTAL	$ 47,858
D. Contribution Sufficiency/(Deficiency)	$(19,238)

* *Includes changes in plan provisions, actuarial assumptions, and actuarial methods*

FUTURE CHANGES

Additional Statutory Funding after 6/30/2012

- Increased state contributions
- Increased additional employer contributions
- Added layer of employer contributions if needed to pay benefits

MERF Division merged into PERA General

- Trigger:
  MERF reaches 80% funding
- Minneapolis employing units make fixed payments to retire any remaining unfunded accrued liability at date of merger

Specific Comments: DTRFA

- Fund actuary should modify active member valuation to consider all statutory benefits
  - May increase liabilities
  - Due to limited scope audit, we are unable to quantify impact
- Mature fund with over 60% of Actuarial Accrued Liability for in-pay members
  - Cash flow solvency test added to valuation process
  - Test results: Sufficient resources to pay benefits plus expenses over 10-year projection period.
- Significant asset losses yet to be recognized
  - Contribution rate deficiency expected to increase when these losses are recognized in future valuations

LCPR Standards for Actuarial Work

- Assumed timing of demographic events

	PERA General		MSRS General	
	Milliman Beginning of Year	Milliman Mid-Year	Milliman Beginning of Year	Milliman Mid-Year
Accrued Liability Funding Ratio	75.40%	76.86%	87.06%	88.23%
Actuarially Required Contribution Rate				
– Normal Cost	6.55%	6.65%	7.20%	7.95%
– Amortization of Unfunded Accrued Liability	6.16	5.69	3.04	2.73
– Expenses	0.18	0.18	0.23	0.23
– TOTAL	12.89%	12.52%	10.47%	10.91%

The results from the replication valuation of the MERF Division of PERA have been intentionally omitted. The decrement timing issue is not expected to significantly impact the actuarial valuation of the MERF Division because the remaining 143 active members are expected to retire in the next few years.

LCPR Standards for Actuarial Work

- Projected benefit funded ratio
  - Treatment of statutory contribution rate increases not consistently applied

Actuarial Standards of Practice

- Issued by American Academy of Actuaries
  - Identify what actuary should consider, document and disclose for an actuarial assignment
  - Assures public that actuaries are professionally accountable
  - Provides actuaries with basis to assure work conforms to appropriate practice
- Improve disclosure of certain assumptions and methods
  - Technical details of process
  - Not expected to materially affect <u>any</u> valuation results