Gabriel Roeder Smith & Company
Consultants & Actuaries

# MINNESOTA STATE RETIREMENT SYSTEM

# CORRECTIONAL EMPLOYEES RETIREMENT FUND

## ACTUARIAL VALUATION REPORT AS OF JULY 1, 2014

GRS
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December 12, 2014

Minnesota State Retirement System
Correctional Employees Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

The results of the July 1, 2014 annual actuarial valuation of the Correctional Employees Retirement Fund are presented in this report. This report was prepared at the request of the Board and is intended for use by the Board and staff and those designated or approved by the Board. This report may be provided to parties other than the Fund only in its entirety. GRS is not responsible for the consequences of any unauthorized use of this report.

The purpose of the valuation is to measure the Fund's funding progress, to determine the required contribution rate for the fiscal year beginning July 1, 2014. Note that we have not attempted to quantify the impact of GASB Statements No. 67 and No. 68 in this report. Please see the separate report dated December 1, 2014.

The valuation was based upon information furnished by the Minnesota State Retirement System (MSRS), concerning benefits, financial transactions, plan provisions, active members, terminated members, retirees, and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by MSRS.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the Legislative Commission on Pensions and Retirement (LCPR), and the Board of Directors. These parties are responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the Actuarial Basis of this report. MSRS is solely responsible for communicating to GRS any changes required thereto.

Guidance regarding the selection of economic assumptions for measuring pension obligations is provided by Actuarial Standards of Practice (ASOP) No. 27. A revision of ASOP No. 27, applicable to valuation dates on or after September 30, 2014, will guide assumption setting for future valuations. A recent review of inflation and investment return assumptions for accounting and financial reporting purposes developed a recommended range of 6.99% to 7.92% for the assumed investment return. Additional review and discussion will be required before the next valuation.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

This report should not be relied on for any purpose other than the purpose described herein. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

Brian B. Murphy and Bonita J. Wurst are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. In addition, Mr. Murphy meets the requirements of "approved actuary" under Minnesota Statutes Section 356.215, Subdivision 1, Paragraph (c).

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge and belief the information contained in this report is accurate and fairly presents the actuarial position of the Correctional Employees Retirement Fund as of the valuation date and was performed in accordance with the requirements of Minnesota Statutes Section 356.215, and the requirements of the Standards for Actuarial Work established by the LCPR. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

Based on the current statutory contributions, the unfunded liability determined on an actuarial value of asset basis will not be eliminated if all actuarial assumptions are met.

We are available to answer any questions or provide further details.

Respectfully submitted,

Brian B. Murphy

Brian B. Murphy, FSA, EA, MAAA

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, MAAA

BBM/BJW:sc

# Contents

# Summary of Valuation Results

## Contributions

The following table summarizes important contribution information as described in the Development of Costs section.

| | Actuarial Valuation as of | |
|---|---|---|
| **Contributions** | **July 1, 2014** | **July 1, 2013** |
| Statutory Contributions - Chapter 352.92 (% of Payroll) | 21.95% | 20.70% |
| Required Contributions - Chapter 356 (% of Payroll) | 26.43% | 26.11% |
| Sufficiency / (Deficiency) | (4.48)% | (5.41)% |

The contribution deficiency decreased from (5.41)% of payroll to (4.48)% of payroll. The primary reasons for the decreased contribution deficiency are the recognition of investment gains from prior years in the actuarial value of assets and the increase in member and employer contributions. The 2014 required contribution reflects additional liability due to the assumption change that the post-retirement benefit increase rate will increase from 2.0% to 2.5% in 2034. A significant contribution deficiency remains.

Statutory contributions are not sufficient to fully amortize the unfunded actuarial accrued liability over the statutory amortization period of 24 years. Based on the current member and employer contribution rates, market value of assets, and other methods and assumptions described in this report, the unfunded liability will be eliminated in 47 years. Current contributions are not sufficient to cover interest on the unfunded liability, which will result in the unfunded liability growing in the short-term. On a market value of assets basis, contributions are deficient by 1.86% of payroll.

The Plan Assets section provides detail on the plan assets used for the valuation including a development of the actuarial value of assets (AVA). The market value of assets (MVA) earned approximately 18.6% for the plan year ending June 30, 2014. The AVA earned approximately 13.8% for the plan year ending June 30, 2014 as compared to the assumed rate of 8.0%. This assumed rate is a prescribed assumption mandated by Minnesota Statutes.

Participant reconciliation and statistics are detailed in the Membership Data section. The Actuarial Basis section includes a summary of plan provisions and actuarial methods and assumptions used for the calculations in this report.

Accounting and financial reporting information prepared according to GASB Statements No. 67 and No. 68 was provided to MSRS in a separate report dated December 1, 2014.

# Summary of Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in plan provisions, actuarial assumptions or valuation methods and procedures between the two valuations are described after the summary.

| | Actuarial Valuation as of | |
|---|---|---|
| | **July 1, 2014** | **July 1, 2013** |
| **Contributions** (*% of Payroll*) | | |
| Statutory - Chapter 352 | 21.95% | 20.70% |
| Required - Chapter 356 | 26.43% | 26.11% |
| Sufficiency / (Deficiency) | (4.48)% | (5.41)% |
| **Funding Ratios** (*dollars in thousands*) | | |
| Assets | | |
| - Current assets (AVA) | $ 790,304 | $ 701,091 |
| - Current assets (MVA) | 877,056 | 747,157 |
| Accrued Benefit Funding Ratio | | |
| - Current benefit obligations | $ 1,067,323 | $ 977,652 |
| - Funding ratio (AVA) | 74.05% | 71.71% |
| - Funding ratio (MVA) | 82.17% | 76.42% |
| Accrued Liability Funding Ratio | | |
| - Actuarial accrued liability | $ 1,122,474 | $ 1,026,098 |
| - Funding ratio (AVA) | 70.41% | 68.33% |
| - Funding ratio (MVA) | 78.14% | 72.82% |
| Projected Benefit Funding Ratio | | |
| - Current and expected future assets | $ 1,227,802 | $ 1,083,641 |
| - Current and expected future benefit obligations | 1,376,360 | 1,256,425 |
| - Projected benefit funding ratio (AVA) | 89.21% | 86.25% |
| **Participant Data** | | |
| Active members | | |
| - Number | 4,504 | 4,384 |
| - Projected annual earnings *(000s)* | 227,008 | 212,972 |
| - Average projected annual earnings | 50,401 | 48,579 |
| - Average age | 41.5 | 41.5 |
| - Average service | 8.7 | 8.8 |
| Service retirements | 2,075 | 1,920 |
| Survivors | 174 | 196 |
| Disability retirements | 268 | 258 |
| Deferred retirements | 1,232 | 1,196 |
| Terminated other non-vested | 384 | 413 |
| **Total** | **8,637** | **8,367** |

# Summary of Valuation Results

## Effects of Changes

The following changes in plan provisions, actuarial assumptions, and methods were recognized as of July 1, 2014:

- Effective July 1, 2014, the actuarial accrued liability funding ratio threshold, determined on a market value of assets basis, that must be attained to pay a 2.5% post-retirement benefit increase to benefit recipients was changed from 90% for one year to 90% for two consecutive years.
- The methodology for valuing future post-retirement benefit increases was clarified in statutes, and the assumed post-retirement benefit increase rate was changed from 2.0% per year indefinitely to 2.0% per year through 2033 and 2.5% per year thereafter.
- Separate pre-retirement and post-retirement investment return rates which implicitly valued the post-retirement benefit increases were changed to a single investment return assumption and an explicit assumption for post-retirement benefit increases.
- Member contribution rates increased from 8.60% to 9.10% of pay and employer contribution rates increased from 12.10% to 12.85% of pay effective the first day of the first full pay period beginning after July 1, 2014.

Refer to the Actuarial Basis section of this report for a complete description of these changes. The combined impact of the above changes was to increase the accrued liability by $31.9 million and increase the required contribution by 0.7% of pay, as follows:

| | Before Changes | Reflecting Plan Changes | Reflecting Plan and Assumption Changes |
|---|---|---|---|
| Normal Cost Rate, % of pay | 15.4% | 15.4% | 16.1% |
| Amortization of UAAL*, % of pay | 9.1% | 9.1% | 10.0% |
| Expenses (% of pay) | 0.3% | 0.3% | 0.3% |
| Total Required Contribution, % of pay | 24.8% | 24.8% | 26.4% |
| Accrued Liability Funding Ratio | 72.5% | 72.5% | 70.4% |
| Projected Benefit Funding Ratio | 89.8% | 92.9% | 89.2% |
| UAAL* (in millions) | $300.3 | $300.3 | $332.2 |

** Unfunded Actuarial Accrued Liability*

# Summary of Valuation Results

## Valuation of Future Annual Post-Retirement Benefit Increases

Benefit recipients receive a future annual compounding 2.0% post-retirement benefit increase. If the funding ratio, determined on a market value of assets basis, reaches 90% (based on a 2.5% post-retirement benefit increase assumption) for two consecutive years, the benefit increase will revert to 2.5%.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of liabilities and assets based on the following methods and assumptions:

- Future investment returns and liability discount rates of 8.00% through June 30, 2017; 8.50% thereafter;
- Open group; stable active population (new member profile based on average new members hired in recent years);
- The post-retirement benefit increase rate is assumed to be 2.0% per year until the funding ratio threshold required to pay a 2.5% post-retirement benefit increase is reached; and
- Current statutory contribution levels (i.e., not including potential contribution increases under the contribution stabilizer statutes).

Based on these assumptions and methods, the projection indicates that this plan is expected to attain the funding ratio threshold required to pay a 2.5% post-retirement benefit increase in the year 2033, and that the plan would begin paying 2.5% benefit increases on January 1, 2034. This assumption is reflected in our calculations. This is only an assumption; actual timing will depend on actual experience.

# Supplemental Information

The remainder of the report includes information supporting the results presented in the previous sections.

- **Plan assets** presents information about the plan's assets as reported by the Minnesota State Retirement System. The assets represent the portion of total fund liabilities that has been funded.

- **Membership data** presents and describes the membership data used in the valuation.

- **Development of costs** shows the liabilities for plan benefits and the derivation of the contribution amount.

- **Actuarial basis** describes the plan provisions, as well as the methods and assumptions used to value the plan. The valuation is based on the premise that the plan is ongoing.

- **Additional Schedules** includes a summary of funding progress over the long term.

- **Glossary** defines the terms used in this report.

# Plan Assets

## Statement of Fiduciary Net Position *(Dollars in Thousands)*

| | Market Value | |
|---|---|---|
| **Assets** | **June 30, 2014** | **June 30, 2013** |
| Cash, equivalents, short term securities | $ 24,460 | $ 20,772 |
| Fixed income | 204,488 | 171,241 |
| Equity | 647,977 | 554,719 |
| Other* | 94,843 | 72,738 |
| **Total cash, investments, and other assets** | **$ 971,768** | **$ 819,470** |
| Amounts Receivable | 1,607 | 1,346 |
| **Total Assets** | **$ 973,375** | **$ 820,816** |
| Amounts Payable* | (96,319) | (73,659) |
| **Net Position Restricted for Pensions** | **$ 877,056** | **$ 747,157** |

** Includes $94,843 in Securities Lending Collateral as of June 30, 2014 and $72,738 as of June 30, 2013.*

# Plan Assets

## Reconciliation of Plan Assets *(Dollars in Thousands)*

The following exhibit shows the revenue, expenses and resulting assets of the Fund as reported by the Minnesota State Retirement System for the prior two fiscal years.

| **Change in Assets** | **Market Value** | |
|---|---|---|
| **Year Ending** | **June 30, 2014** | **June 30, 2013** |
| **1. Fund balance at market value at beginning of year** | **$ 747,157** | **$ 659,523** |
| 2. Contributions | | |
| a. Member | 18,855 | 17,561 |
| b. Employer | 26,468 | 24,632 |
| c. Other sources | 0 | 0 |
| d. Total contributions | $ 45,323 | $ 42,193 |
| 3. Investment income | | |
| a. Investment income/(loss) | 138,740 | 94,414 |
| b. Investment expenses | (1,217) | (1,022) |
| c. Net investment income/(loss) | 137,523 | 93,392 |
| 4. Other | 0 | 0 |
| **5. Total income:** *(2.d.) + (3.c.) + (4.)* | **$ 182,846** | **$ 135,585** |
| 6. Benefits Paid | | |
| a. Annuity benefits | (50,842) | (46,226) |
| b. Refunds | (1,447) | (1,032) |
| c. Total benefits paid | (52,289) | (47,258) |
| 7. Expenses | | |
| a. Other | (1) | (1) |
| b. Administrative | (657) | (692) |
| c. Total expenses | (658) | (693) |
| **8. Total disbursements:** *(6.c.) + (7.c.)* | **(52,947)** | **(47,951)** |
| **9. Fund balance at market value at end of year:** *(1.) + (5.) + (8.)* | **$ 877,056** | **$ 747,157** |
| 10. State Board of Investment calculated investment return | 18.6% | 14.2% |

# Plan Assets

## Actuarial Asset Value *(Dollars in Thousands)*

| | June 30, 2014 | June 30, 2013 |
|---|---|---|
| **1. Market value of assets available for benefits** | **$ 877,056** | **$ 747,157** |
| 2. Determination of average balance | | |
| a. Total assets available at beginning of year | 747,157 | 659,523 |
| b. Total assets available at end of year | 877,056 | 747,157 |
| c. Net investment income for fiscal year | 137,523 | 93,392 |
| d. Average balance *[a. + b. - c.] / 2* | 743,345 | 656,644 |
| 3. Expected return *[8.0% x 2.d.]* | 59,468 | 52,532 |
| 4. Actual return | 137,523 | 93,392 |
| 5. Current year asset gain/(loss) *[4. - 3.]* | 78,055 | 40,860 |

6. Unrecognized asset returns

| | Original Amount | Unrecognized Amount (June 30, 2014) % | Unrecognized Amount (June 30, 2014) Dollar | Unrecognized Amount (June 30, 2013) % | Unrecognized Amount (June 30, 2013) Dollar |
|---|---|---|---|---|---|
| a. Year ended June 30, 2014 | $ 78,055 | 80% | $ 62,445 | | N/A |
| b. Year ended June 30, 2013 | 40,860 | 60% | 24,516 | 80% | $ 32,688 |
| c. Year ended June 30, 2012 | (38,907) | 40% | (15,563) | 60% | (23,344) |
| d. Year ended June 30, 2011 | 76,770 | 20% | 15,354 | 40% | 30,708 |
| e. Year ended June 30, 2010 | 30,070 | | N/A | 20% | 6,014 |
| **f. Unrecognized return adjustment** | | | **$ 86,752** | | **$ 46,066** |

| | June 30, 2014 | June 30, 2013 |
|---|---|---|
| 7. **Actuarial value at end of year** *(1. - 6.f.)* | **$ 790,304** | **$ 701,091** |
| 8. Approximate return on actuarial value of assets during fiscal | 13.8% | 6.4% |
| 9. Ratio of actuarial value of assets to market value of assets | 0.90 | 0.94 |

# Membership Data

## Distribution of Active Members

| | Years of Service as of June 30, 2014 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Age** | **<3*** | **3 - 4** | **5 - 9** | **10 - 14** | **15 - 19** | **20 - 24** | **25 - 29** | **30 - 34** | **35+** | **Total** |
| < 25 | 121 | 8 | | | | | | | | **129** |
| Avg. Earnings | 30,629 | 38,660 | | | | | | | | **31,127** |
| 25 - 29 | 392 | 67 | 80 | | | | | | | **539** |
| Avg. Earnings | 35,111 | 40,591 | 42,634 | | | | | | | **36,909** |
| 30 - 34 | 240 | 104 | 377 | 50 | | | | | | **771** |
| Avg. Earnings | 35,747 | 42,580 | 45,295 | 49,877 | | | | | | **42,254** |
| 35 - 39 | 131 | 50 | 266 | 147 | 15 | | | | | **609** |
| Avg. Earnings | 36,478 | 44,520 | 46,526 | 53,200 | 59,222 | | | | | **46,123** |
| 40 - 44 | 100 | 29 | 198 | 154 | 120 | 10 | 1 | | | **612** |
| Avg. Earnings | 39,180 | 43,373 | 48,134 | 52,591 | 60,290 | 60,270 | 73,496 | | | **50,190** |
| 45 - 49 | 94 | 40 | 131 | 127 | 131 | 92 | 12 | | | **627** |
| Avg. Earnings | 40,862 | 43,537 | 49,640 | 52,523 | 60,652 | 62,968 | 69,756 | | | **53,160** |
| 50 - 54 | 86 | 27 | 178 | 118 | 105 | 92 | 71 | 20 | | **697** |
| Avg. Earnings | 42,403 | 51,091 | 53,005 | 54,929 | 60,511 | 61,458 | 66,082 | 70,277 | | **56,023** |
| 55 - 59 | 35 | 27 | 119 | 63 | 61 | 33 | 13 | 13 | 2 | **366** |
| Avg. Earnings | 48,787 | 52,841 | 54,081 | 57,039 | 59,555 | 59,826 | 63,936 | 65,921 | 54,844 | **56,197** |
| 60 - 64 | 17 | 8 | 41 | 27 | 21 | 9 | 2 | 3 | | **128** |
| Avg. Earnings | 43,399 | 43,608 | 55,690 | 60,180 | 55,701 | 63,498 | 70,477 | 64,606 | | **55,240** |
| 65 - 69 | 5 | 1 | 7 | 7 | 2 | | | 1 | | **23** |
| Avg. Earnings | 35,573 | 130,805 | 58,442 | 62,861 | 104,340 | | | 61,191 | | **62,072** |
| 70+ | | 1 | 1 | 1 | | | | | | **3** |
| Avg. Earnings | | 14,775 | 59,346 | 67,530 | | | | | | **47,217** |
| **Total** | **1,221** | **362** | **1,398** | **694** | **455** | **236** | **99** | **37** | **2** | **4,504** |
| **Avg. Earnings** | **36,737** | **44,152** | **48,296** | **53,733** | **60,293** | **61,846** | **66,410** | **68,041** | **54,844** | **48,153** |

* *This exhibit does not reflect service earned in other MSRS or Combined Service Annuity benefits. It should not be relied upon as an indicator of non-vested status.*

In each cell, the top number is the count of active participants for the age/service combination and the bottom number is average valuation earnings for the fiscal year ending on the valuation date.

# Membership Data

## Distribution of Service Retirements

| Age | Years Retired as of June 30, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **<1** | **1 - 4** | **5 - 9** | **10 - 14** | **15 - 19** | **20 - 24** | **25+** | **Total** |
| <50 | | 4 | | | | | | **4** |
| Avg. Benefit | | 5,400 | | | | | | **5,400** |
| 50 - 54 | 24 | 53 | 3 | 1 | | | | **81** |
| Avg. Benefit | 23,071 | 17,268 | 5,371 | 5,418 | | | | **18,400** |
| 55 - 59 | 77 | 305 | 48 | | 1 | | | **431** |
| Avg. Benefit | 24,005 | 24,873 | 25,902 | | 39,068 | | | **24,866** |
| 60 - 64 | 36 | 162 | 327 | 49 | | | | **574** |
| Avg. Benefit | 18,276 | 18,869 | 22,613 | 22,725 | | | | **21,294** |
| 65 - 69 | 7 | 93 | 96 | 299 | 12 | | | **507** |
| Avg. Benefit | 9,959 | 9,284 | 15,364 | 18,100 | 22,461 | | | **15,955** |
| 70 - 74 | 2 | 18 | 48 | 59 | 104 | 1 | | **232** |
| Avg. Benefit | 3,595 | 10,160 | 11,238 | 15,313 | 25,192 | 29,228 | | **18,457** |
| 75 - 79 | 1 | 2 | 10 | 33 | 44 | 44 | | **134** |
| Avg. Benefit | 8,737 | 27,536 | 10,847 | 17,282 | 24,098 | 29,262 | | **23,063** |
| 80 - 84 | | | | 5 | 12 | 15 | 34 | **66** |
| Avg. Benefit | | | | 9,014 | 21,811 | 32,255 | 24,664 | **24,685** |
| 85 - 89 | | | | | 1 | 8 | 18 | **27** |
| Avg. Benefit | | | | | 27,565 | 12,948 | 31,037 | **25,549** |
| 90+ | | | | | | | 19 | **19** |
| Avg. Benefit | | | | | | | 26,949 | **26,949** |
| **Total** | **147** | **637** | **532** | **446** | **174** | **68** | **71** | **2,075** |
| **Avg. Benefit** | **21,399** | **19,908** | **20,257** | **18,048** | **24,587** | **28,002** | **26,891** | **20,600** |

In each cell, the top number is the count of retired participants for the age/years retired combination and the bottom number is the average annual benefit amount.

# Membership Data

## Distribution of Survivors

| | Years Since Death as of June 30, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **<1** | **1 - 4** | **5 - 9** | **10 - 14** | **15 - 19** | **20 - 24** | **25+** | **Total** |
| <45 | 4 | 7 | 1 | 1 | | | | **13** |
| Avg. Benefit | 15,834 | 9,043 | 287 | 7,320 | | | | **10,326** |
| 45 - 49 | 2 | 3 | 3 | 1 | | | | **9** |
| Avg. Benefit | 22,969 | 8,875 | 8,154 | 16,512 | | | | **12,615** |
| 50 - 54 | | 1 | 2 | | | | | **3** |
| Avg. Benefit | | 5,573 | 8,990 | | | | | **7,851** |
| 55 - 59 | 2 | 8 | 8 | 6 | 3 | | | **27** |
| Avg. Benefit | 21,250 | 18,912 | 16,031 | 8,824 | 11,385 | | | **15,153** |
| 60 - 64 | 3 | 7 | 7 | 9 | 2 | 1 | | **29** |
| Avg. Benefit | 25,434 | 16,649 | 9,430 | 14,732 | 2,858 | 9,426 | | **14,020** |
| 65 - 69 | 3 | 7 | 10 | 10 | 7 | | | **37** |
| Avg. Benefit | 17,634 | 17,873 | 15,769 | 11,887 | 15,696 | | | **15,255** |
| 70 - 74 | | 7 | 4 | 2 | 2 | 1 | 1 | **17** |
| Avg. Benefit | | 17,889 | 14,112 | 8,113 | 14,211 | 9,743 | 6,654 | **14,277** |
| 75 - 79 | 1 | 1 | 5 | 3 | 7 | | | **17** |
| Avg. Benefit | 4,676 | 13,747 | 25,724 | 23,062 | 15,773 | | | **19,214** |
| 80 - 84 | | 6 | 1 | 1 | 1 | 1 | 1 | **11** |
| Avg. Benefit | | 20,344 | 37,150 | 24,808 | 8,477 | 13,513 | 6,717 | **19,339** |
| 85 - 89 | 1 | 2 | 2 | 2 | 1 | | | **8** |
| Avg. Benefit | 18,085 | 12,426 | 11,339 | 14,283 | 28,557 | | | **15,342** |
| 90+ | | 1 | | | 1 | | 1 | **3** |
| Avg. Benefit | | 11,787 | | | 1,741 | | 4,064 | **5,864** |
| **Total** | **16** | **50** | **43** | **35** | **24** | **3** | **3** | **174** |
| **Avg. Benefit** | **18,984** | **15,722** | **14,874** | **13,343** | **13,640** | **10,894** | **5,812** | **14,793** |

In each cell, the top number is the count of survivors for the age/years since death combination and the bottom number is the average annual benefit amount.

# Membership Data

## Distribution of Disability Retirements

| | Years Disabled as of June 30, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **<1** | **1 - 4** | **5 - 9** | **10 - 14** | **15 - 19** | **20 - 24** | **25+** | **Total** |
| < 45 | 1 | 17 | 6 | 7 | | | | **31** |
| Avg. Benefit | 14,507 | 16,094 | 14,649 | 18,113 | | | | **16,219** |
| 45 - 49 | 6 | 8 | 8 | 10 | 1 | | | **33** |
| Avg. Benefit | 14,911 | 17,297 | 17,059 | 18,540 | 30,198 | | | **17,573** |
| 50 - 54 | 4 | 13 | 15 | 9 | 5 | | | **46** |
| Avg. Benefit | 13,843 | 22,942 | 17,769 | 19,483 | 29,768 | | | **20,529** |
| 55 - 59 | 2 | 21 | 16 | 17 | 6 | 2 | | **64** |
| Avg. Benefit | 13,572 | 17,588 | 18,584 | 23,478 | 27,662 | 25,058 | | **20,454** |
| 60 - 64 | 3 | 9 | 13 | 20 | 9 | 1 | | **55** |
| Avg. Benefit | 17,784 | 17,511 | 17,214 | 20,261 | 23,978 | 29,059 | | **19,724** |
| 65 - 69 | | 6 | 3 | 9 | 7 | 1 | | **26** |
| Avg. Benefit | | 17,750 | 19,201 | 15,274 | 17,929 | 22,599 | | **17,295** |
| 70 - 74 | | | 3 | 4 | 2 | | | **9** |
| Avg. Benefit | | | 19,210 | 28,456 | 27,682 | | | **25,202** |
| 75+ | | | | 1 | | 2 | 1 | **4** |
| Avg. Benefit | | | | 20,088 | | 20,564 | 25,255 | **21,618** |
| **Total** | **16** | **74** | **64** | **77** | **30** | **6** | **1** | **268** |
| **Avg. Benefit** | **14,990** | **18,158** | **17,613** | **20,302** | **24,723** | **23,817** | **25,255** | **19,343** |

In each cell, the top number is the count of disabled participants for the age/years since disability combination and the bottom number is the average annual benefit amount.

# Membership Data

## Reconciliation of Members

| | | Terminated | | Recipients | | | |
|---|---|---|---|---|---|---|---|
| | Actives | Deferred Retirement | Other Non-Vested | Service Retirement | Disability Retirement | Survivor | Total |
| **Members on 7/1/2013** | **4,384** | **1,196** | **413** | **1,920** | **258** | **196** | **8,367** |
| New members | 510 | 0 | 0 | 0 | 0 | 0 | **510** |
| Return to active | 32 | (20) | (12) | 0 | 0 | 0 | **0** |
| Terminated non-vested | (99) | 0 | 99 | 0 | 0 | 0 | **0** |
| Service retirements | (115) | (27) | 0 | 142 | 0 | 0 | **0** |
| Terminated deferred | (105) | 105 | 0 | 0 | 0 | 0 | **0** |
| Terminated refund/transfer | (77) | (18) | (144) | 0 | 0 | 0 | **(239)** |
| Deaths | (9) | (2) | 0 | (21) | (3) | (2) | **(37)** |
| New beneficiary | 0 | 0 | 0 | 0 | 0 | 19 | **19** |
| Disabled | (12) | 0 | 0 | 0 | 12 | 0 | **0** |
| Unexpected status changes | (5) | (2) | 28 | 34 | 1 | (39) | **17** |
| Net change | 120 | 36 | (29) | 155 | 10 | (22) | **270** |
| **Members on 6/30/2014** | **4,504** | **1,232** | **384** | **2,075** | **268** | **174** | **8,637** |

| Terminated Member Statistics | Deferred Retirement | Other Non-Vested | Total |
|---|---|---|---|
| Number | 1,232 | 384 | 1,616 |
| Average age | 45.3 | 37.2 | 43.4 |
| Average service | 5.7 | 0.9 | 4.6 |
| Average annual benefit, with augmentation to Normal Retirement Date and 30% CSA load | $ 11,548 | N/A | $11,548 |
| Average refund value, with 30% CSA load | $ 28,300 | $ 4,405 | $22,622 |

# Development of Costs

## Actuarial Valuation Balance Sheet *(Dollars in Thousands)*

The actuarial balance sheet is based on the principle that the long-term projected benefit obligations of the plan should be ideally equal to the long-term resources available to fund those obligations. The resources available to meet projected obligations for current members consist of current fund assets plus the present value of anticipated future contributions intended to fund benefits for current members. In the exhibit below, B.2 is the estimated present value of contributions to fund the normal cost rate for current members until their respective termination dates. Item B.1 is the present value of the total 21.95% statutory contribution net of normal cost and anticipated plan expenses during the period from the valuation date to the statutory unfunded amortization date.

The contributions made in excess of amounts required for current benefit payments are accumulated as a reserve to help meet benefit payments in later years. It is this reserve system which permits the establishment of a level rate of contribution each year.

| | | | June 30, 2014 |
|---|---|---|---|
| A. Actuarial Value of Assets | | | $ 790,304 |
| B. Expected Future Assets | | | |
| 1. Present value of expected future statutory supplemental contributions | | | $ 183,612 |
| 2. Present value of future normal cost contributions | | | 253,886 |
| 3. Total expected future assets: *(1.) + (2.)* | | | 437,498 |
| C. Total Current and Expected Future Assets | | | $ 1,227,802 |
| D. Current Benefit Obligations* | | | |
| 1. Benefit recipients | **Non-Vested** | **Vested** | **Total** |
| a. Service retirements | $ 0 | $ 459,868 | $ 459,868 |
| b. Disability retirements | 0 | 56,434 | 56,434 |
| c. Survivors | 0 | 26,747 | 26,747 |
| 2. Deferred retirements with augmentation | 0 | 104,863 | 104,863 |
| 3. Former members without vested rights** | 902 | 0 | 902 |
| 4. Active members | 14,167 | 404,342 | 418,509 |
| 5. Total Current Benefit Obligations | $ 15,069 | $ 1,052,254 | $ 1,067,323 |
| E. Expected Future Benefit Obligations | | | $ 309,037 |
| F. Total Current and Expected Future Benefit Obligations*** | | | $ 1,376,360 |
| G. Unfunded Current Benefit Obligations: *(D.5.) - (A.)* | | | $ 277,019 |
| H. Unfunded Current and Future Benefit Obligations: *(F.) - (C.)* | | | $ 148,558 |
| I. Accrued Benefit Funding Ratio: *(A.)/(D.5.)* | | | 74.05% |
| J. Projected Benefit Funding Ratio: *(C.)/(F.)* | | | 89.21% |

* *Present value of credited projected benefits (projected compensation, current service).*

** *Former members who have not satisfied vesting requirements and have not collected a refund of member contributions as of the valuation date.*

*** *Present value of projected benefits (projected compensation, projected service).*

# Development of Costs

## Determination of Unfunded Actuarial Accrued Liability and Supplemental Contribution Rate (*Dollars in Thousands)*

| | Actuarial Present Value of Projected Benefits | Actuarial Present Value of Future Normal Costs | Actuarial Accrued Liability |
|---|---|---|---|
| A. Determination of Actuarial Accrued Liability (AAL) | | | |
| 1. Active members | | | |
| a. Retirement annuities | $ 607,525 | $ 172,374 | $ 435,151 |
| b. Disability benefits | 57,479 | 32,756 | 24,723 |
| c. Survivor's benefits | 8,212 | 2,816 | 5,396 |
| d. Deferred retirements | 51,829 | 36,908 | 14,921 |
| e. Refunds* | 2,501 | 9,032 | (6,531) |
| f. Total | $ 727,546 | $ 253,886 | $ 473,660 |
| 2. Deferred retirements with future augmentation | 104,863 | 0 | 104,863 |
| 3. Former members without vested rights | 902 | 0 | 902 |
| 4. Benefit recipients | 543,049 | 0 | 543,049 |
| 5. Total | $1,376,360 | $ 253,886 | $ 1,122,474 |
| B. Determination of Unfunded Actuarial Accrued Liability (UAAL) | | | |
| 1. Actuarial accrued liability | | | $ 1,122,474 |
| 2. Current assets (AVA) | | | 790,304 |
| 3. Unfunded actuarial accrued liability | | | $ 332,170 |
| C. Determination of Supplemental Contribution Rate** | | | |
| 1. Present value of future payrolls through the amortization date of June 30, 2038 | | | $ 3,314,292 |
| 2. Supplemental contribution rate: *(B.3.) / (C.1.)* | | | 10.02% *** |

* *Includes non-vested refunds and non-married survivor benefits only.*

** *The amortization of the unfunded actuarial accrued liability (UAAL) using the current amortization method results in initial payments less than the "interest only" payment on the UAAL. Payments less than the interest only amount will result in the UAAL increasing for an initial period of time.*

*** *The amortization factor as of July 1, 2014 is 14.59989.*

# Development of Costs

## Changes in Unfunded Actuarial Accrued Liability (UAAL) *(Dollars in Thousands)*

| | Year Ending June 30, 2014 | | |
|---|---|---|---|
| | **Actuarial Accrued Liability** | **Current Assets** | **Unfunded Actuarial Accrued Liability** |
| A. Unfunded actuarial accrued liability at beginning of year | $ 1,026,098 | $ 701,091 | $ 325,007 |
| B. Changes due to interest requirements and current rate of funding | | | |
| 1. Normal cost, including expenses | $ 33,880 | $ 0 | $ 33,880 |
| 2. Benefit payments | (52,289) | (52,289) | 0 |
| 3. Contributions | 0 | 45,323 | (45,323) |
| 4. Interest on A., B.1., B.2. and B.3. | 85,317 | 55,809 | 29,508 |
| 5. Total *(B.1. + B.2. + B.3. + B.4.)* | 66,908 | 48,843 | 18,065 |
| C. Expected unfunded actuarial accrued liability at end of year *(A. + B.5.)* | | | $ 343,072 |
| D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected | | | |
| 1. Age and Service retirements | | | $ 13 |
| 2. Disability retirements | | | (750) |
| 3. Death-in-Service benefits | | | (105) |
| 4. Withdrawals | | | (1,472) |
| 5. Salary increases | | | 1,933 |
| 6. Investment income | | | (40,370) |
| 7. Mortality of annuitants | | | 1,505 |
| 8. Other items | | | (3,532) |
| 9. Total | | | (42,778) |
| E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions *(C. + D.9.)* | | | $ 300,294 |
| F. Change in unfunded actuarial accrued liability due to changes in plan provisions | | | 0 |
| G. Change in unfunded actuarial accrued liability due to changes in actuarial assumptions | | | 31,876 |
| H. Change in unfunded actuarial accrued liability due to changes in actuarial methods | | | 0 |
| I. Unfunded actuarial accrued liability at end of year *(E. + F. + G. + H.)** | | | $ 332,170 |

** The unfunded actuarial accrued liability on a market value of assets basis is $245,418.*

# Development of Costs

## Determination of Contribution Sufficiency/(Deficiency) *(Dollars in Thousands)*

The required contribution is defined in Minnesota Statutes as the sum of normal cost, a supplemental contribution to amortize the UAAL, and an allowance for expenses.

| | Percent of Payroll | Dollar Amount |
|---|---|---|
| A. Statutory contributions - Chapter 352 | | |
| 1. Employee contributions | 9.10% | $ 20,658 |
| 2. Employer contributions | 12.85% | 29,171 |
| 3. Total | 21.95% | $ 49,829 |
| | | |
| B. Required contributions - Chapter 356 | | |
| 1. Normal cost | | |
| a. Retirement benefits | 11.17% | $ 25,356 |
| b. Disability benefits | 2.23% | 5,062 |
| c. Survivors | 0.18% | 409 |
| d. Deferred retirement benefits | 1.97% | 4,472 |
| e. Refunds* | 0.55% | 1,249 |
| f. Total | 16.10% | $ 36,548 |
| | | |
| 2. Supplemental contribution amortization of Unfunded Actuarial Accrued Liability by June 30, 2038 | 10.02% | $ 22,746 |
| | | |
| 3. Allowance for expenses | 0.31% | 704 |
| | | |
| 4. Total | 26.43% ** | $ 59,998 |
| | | |
| C. Contribution sufficiency/(deficiency) *(A.3. - B.4.)* | (4.48%) | $ (10,169) |

Note: Projected annual payroll for fiscal year beginning on the valuation date: $227,008.

* *Includes non-vested refunds and non-married survivor benefits only.*

** *The required contribution on a market value of assets basis is 23.81% of payroll.*

# Actuarial Basis

## Actuarial Methods

All actuarial methods are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement, or the MSRS Board of Directors. Different methodologies may also be reasonable and results based on other methodologies would be different.

**Actuarial Cost Method**

Actuarial accrued liability and required contributions in this report are computed using the Entry Age Normal Cost method. This method is prescribed by Minnesota Statute. Under this method, a normal cost is developed by amortizing the actuarial value of benefits expected to be received by each active participant (as a level percentage of pay) over the total working lifetime of that participant, from hire to termination. Age as of the valuation date was calculated based on the dates of birth provided by the Fund. Entry age for valuation purposes was calculated as the age on the valuation date minus the provided years of service on the valuation date.

To the extent that current assets and future normal costs do not support participants' expected future benefits, an unfunded actuarial accrued liability ("UAAL") develops. The UAAL is amortized over the statutory amortization period using level percent of payroll assuming payroll increases. The total contribution developed under this method is the sum of normal cost, expenses, and the payment toward the UAAL.

**Select and Ultimate Discount Rate Methodology**

Based on direction from the LCPR's actuary, the select and ultimate discount rate methodology is applied to the entry age normal results as follows:

1. The present value of projected benefits is calculated using the prescribed select and ultimate discount rates.
2. An equivalent single interest rate that produces approximately the same present value of projected benefits is determined.
3. The equivalent single interest rate is used to determine the entry age normal accrued liability and normal cost.

The equivalent single interest rate used in this valuation is 8.41% (8.39% last year).

**Valuation of Future Post-Retirement Benefit Increases**

If the plan has reached the funding ratio threshold required to pay a 2.5% benefit increase, Minnesota Statutes require the 2.5% benefit increase rate to be reflected in the liability calculations. If the plan has not yet reached the funding ratio threshold required to pay a 2.5% benefit increase, Minnesota Statutes require a projection to be performed to determine the expected attainment of the funding ratio threshold, and the expected reversion to a 2.5% benefit increase rate must be reflected in the liability calculations.

# Actuarial Basis

## Actuarial Methods (Concluded)

**Funding Objective**

The fundamental financing objective of the fund is to establish contribution rates which, when expressed as a percentage of active member payroll, will remain approximately level from generation to generation and meet the required deadline for full funding.

**Decrement Timing**

All decrements are assumed to occur mid-fiscal year.

**Asset Valuation Method**

The assets are valued based on a five-year moving average of expected and market values (five-year average actuarial value) determined as follows:

- At the end of each plan year, an average asset value is calculated as the average of the market asset value at the beginning and end of the fiscal year net of investment income for the fiscal year;
- The investment gain or (loss) is taken as the excess of actual investment income over the expected investment income based on the average asset value as calculated above;
- The investment gain or (loss) so determined is recognized over five years at 20% per year;
- The asset value is the sum of the market asset value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four fiscal years.

**Payment on the Unfunded Actuarial Accrued Liability**

Payment equals a level percentage of payroll each year to the statutory amortization date of June 30, 2038 assuming payroll increases of 3.75% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount is amortized over 30 years as a level percentage of payroll. If the unfunded liability increases due to changes in benefits, assumptions, or methods, the statutory amortization date will be re-determined. Projected payroll is multiplied by 0.959 in the determination of the present value of future payroll to account for timing differences (as required by the Standards for Actuarial Work).

**Changes in Methods since Prior Valuation**

The methodology for valuing future post-retirement increases was clarified in Minnesota Statutes.

# Actuarial Basis

## Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the MSRS Board of Directors. These parties are responsible for selecting the assumptions used for this valuation. The assumptions prescribed are based on the last experience study, dated February 2012, prepared by a former actuary.

The Allowance for Combined Service Annuity was also based on a recommendation by a former actuary. We are unable to judge the reasonableness of this assumption without performing a substantial amount of additional work beyond the scope of the assignment.

| | |
|---|---|
| Investment return | Select and Ultimate Rates:<br>July 1, 2014 to June 30, 2017 8.00% per annum<br>July 1, 2017 and later 8.50% per annum |
| Benefit increases after retirement | 2.00% per annum through 2033 and 2.5% per annum thereafter. |
| Salary increases | Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service. |
| Payroll growth | 3.75% per year. |
| Inflation | 3.00% per year. |
| Mortality rates | |
| Healthy Pre-retirement | RP-2000 employee generational mortality table projected with mortality improvement scale AA, white collar adjustment. |
| Healthy Post-retirement | RP-2000 annuitant generational mortality table projected with mortality improvement scale AA, white collar adjustment, set forward one year for males and set back one year for females.<br><br>The RP-2000 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 15 to 70 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have applied the annuitant mortality table for active members beyond age 70 until the assumed retirement age and the employee mortality table for annuitants younger than age 50. |
| Disabled | RP-2000 disabled mortality table. |
| Retirement | Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year. |
| Withdrawal | Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in rate table. Select rates in the first three years are:<br>Year — Select Withdrawal Rates<br>1 — 20%<br>2 — 15%<br>3 — 8% |

# Actuarial Basis

## Summary of Actuarial Assumptions (Continued)

| | |
|---|---|
| Disability | Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related. |
| Allowance for combined service annuity | Liabilities for former members are increased by 30.00% to account for the effect of some participants having eligibility for a Combined Service Annuity. |
| Administrative expenses | Prior year administrative expenses expressed as percentage of prior year projected payroll. |
| Refund of contributions | Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit. |
| Commencement of deferred benefits | Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55. |
| Percentage married | 85% of active members are assumed to be married. Actual marital status is used for members in payment status. |
| Age of spouse | Females are assumed to be three years younger than their male spouses. |
| Form of payment | Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows:<br><br>Males: 10% elect 50% Joint & Survivor option<br>10% elect 75% Joint & Survivor option<br>40% elect 100% Joint & Survivor option<br>Females: 10% elect 50% Joint & Survivor option<br>10% elect 75% Joint & Survivor option<br>30% elect 100% Joint & Survivor option<br><br>Remaining married members and unmarried members are assumed to elect the Straight Life option.<br><br>Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity, except that current terminated deferred members who terminated prior to July 1, 1997 are assumed to receive the Level Social Security option to age 62. |
| Eligibility testing | Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur. |
| Decrement operation | Withdrawal decrements do not operate during retirement eligibility. |
| Service credit accruals | It is assumed that members accrue one year of service credit per year. |

# Actuarial Basis

## Summary of Actuarial Assumptions (Continued)

| | |
|---|---|
| Unknown data for certain members | To prepare this report, GRS has used and relied on participant data supplied by MSRS. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided.<br><br>In cases where submitted data was missing or incomplete, the following assumptions were applied:<br><br><u>Data for active members</u>:<br>There were 11 members reported with zero or invalid salary. We used prior year salary (11 members).<br><br>There were no members reported with missing service.<br><br>There were no members reported with missing or invalid gender or birth dates.<br><br><u>Data for terminated members</u>:<br>There were 54 members reported without a benefit. If available, we calculated benefits for these members using the reported Average Salary, Credited Service and Termination Date provided. If Average Salary was not reported (26 members), we assumed a value of $30,000. If Credited Service was not reported (3 members), we assumed a value of 7.5 years. There were no members reported without a Termination Date.<br><br>There were 66 members who terminated after June 30, 1997 and who were reported with a benefit in the Accelerated to Age 62 option. Based on direction from MSRS, we adjusted benefits for these members to reflect the assumed life annuity election.<br><br>There were no members reported with missing or invalid gender or birth dates.<br><br><u>Data for members receiving benefits</u>:<br>There were no members reported with missing or invalid birth dates. There were 5 members reported with an invalid gender. We assumed male gender for the valuation.<br><br>There were retired members reported with a survivor option and an invalid or missing survivor gender (379 members) and/or survivor date of birth (322 members). We used the valuation assumptions if the survivor gender or date of birth was missing or invalid.<br><br>There were 2 members reported without a benefit. Due to the small number of members with missing benefits, we made no adjustment to the reported data for members receiving benefits. |

# Actuarial Basis

## Summary of Actuarial Assumptions (Continued)

| | |
|---|---|
| Unknown data for certain members | Data for members receiving benefits:<br>There were 19 retirees reported with a survivor option and a survivor date of death. We assumed no benefit was payable to the survivor, and the member benefit already reflected the increase to the life annuity value (i.e. "bounce back"), if applicable.<br><br>There were 44 retirees reported with a bounce back annuity but were not reported with a reasonable reduction factor. A factor of 0.80, 0.85 and 0.90 was assumed for the 100%, 75% and 50% joint and survivor annuity, respectively.<br><br>There was 1 retired member with an accelerated benefit election and an invalid end date. We assumed the benefit ends on the member's 62nd birthday.<br><br>There were no survivors reported on the data file with an expired benefit.<br><br>At MSRS' direction, we changed the status of 40 members who were reported with a disabled status at the beginning of the year and a retired status at the end of the year back to disabled status. |
| Changes in actuarial assumptions | Separate pre-retirement and post-retirement investment return rates which implicitly valued the post-retirement benefit increases were changed to a single investment return assumption and an explicit assumption for post-retirement benefit increases.<br><br>The assumed post-retirement benefit increase rate was changed from 2.0% per year to 2.0% per year through 2033 and 2.5% per year thereafter. See page 4 for additional detail about this assumption. |

# Actuarial Basis

## Summary of Actuarial Assumptions (Continued)

| | Rate (%)* | | | | | |
|---|---|---|---|---|---|---|
| | Healthy Post-Retirement Mortality** | | Healthy Pre-Retirement Mortality** | | Disability Mortality | |
| **Age** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** |
| 20 | 0.04% | 0.02% | 0.03% | 0.02% | 2.26% | 0.75% |
| 25 | 0.04 | 0.02 | 0.04 | 0.02 | 2.26 | 0.75 |
| 30 | 0.04 | 0.02 | 0.04 | 0.03 | 2.26 | 0.75 |
| 35 | 0.06 | 0.04 | 0.06 | 0.05 | 2.26 | 0.75 |
| 40 | 0.10 | 0.06 | 0.09 | 0.06 | 2.26 | 0.75 |
| 45 | 0.15 | 0.09 | 0.13 | 0.10 | 2.26 | 0.75 |
| 50 | 0.60 | 0.15 | 0.20 | 0.16 | 2.90 | 1.15 |
| 55 | 0.54 | 0.32 | 0.27 | 0.24 | 3.54 | 1.65 |
| 60 | 0.73 | 0.51 | 0.43 | 0.38 | 4.20 | 2.18 |
| 65 | 1.30 | 0.82 | 0.67 | 0.59 | 5.02 | 2.80 |
| 70 | 2.14 | 1.37 | 0.98 | 0.88 | 6.26 | 3.76 |

* *Generally, mortality rates are expected to increase as age increases. Due to the combination of pre-retirement rates, post-retirement rates, the white collar adjustment, and Projection Scale AA, the prescribed mortality tables have a few ages where assumed mortality decreases slightly instead of increases. We have used the rates as prescribed, but note that the prescribed assumption may not be reasonable at every age. If the rates were reasonably adjusted so that they decreased at all ages, we would not expect the valuation results to be materially different.*

** *These rates were adjusted for mortality improvements using projection scale AA.*

| | Withdrawal Rates After Third Year | | Disability Retirement | |
|---|---|---|---|---|
| **Age** | **Male** | **Female** | **Male** | **Female** |
| 20 | 13.20% | 8.80% | 0.05% | 0.05% |
| 25 | 8.10 | 7.80 | 0.08 | 0.08 |
| 30 | 5.00 | 7.45 | 0.11 | 0.11 |
| 35 | 3.45 | 7.10 | 0.15 | 0.15 |
| 40 | 2.55 | 5.70 | 0.24 | 0.24 |
| 45 | 1.95 | 3.50 | 0.39 | 0.39 |
| 50 | 0.00 | 0.00 | 0.67 | 0.67 |
| 55 | 0.00 | 0.00 | 1.17 | 1.17 |
| 60 | 0.00 | 0.00 | 1.88 | 1.88 |
| 65 | 0.00 | 0.00 | 0.00 | 0.00 |

# Actuarial Basis

## Summary of Actuarial Assumptions (Concluded)

| Age | Percent Retiring |
|---|---|
| 50 | 5% |
| 51 | 3 |
| 52 | 3 |
| 53 | 3 |
| 54 | 5 |
| 55 | 55 |
| 56 | 12 |
| 57 | 12 |
| 58 | 10 |
| 59 | 10 |
| 60 | 10 |
| 61 | 10 |
| 62 | 30 |
| 63 | 30 |
| 64 | 30 |
| 65 | 50 |
| 66 | 50 |
| 67 | 50 |
| 68 | 50 |
| 69 | 50 |
| 70+ | 100 |

| Salary Scale | |
|---|---|
| Year | Increase |
| 1 | 6.00% |
| 2 | 5.85 |
| 3 | 5.70 |
| 4 | 5.55 |
| 5 | 5.40 |
| 6 | 5.25 |
| 7 | 5.10 |
| 8 | 4.95 |
| 9 | 4.80 |
| 10 | 4.65 |
| 11 | 4.55 |
| 12 | 4.45 |
| 13 | 4.35 |
| 14 | 4.25 |
| 15 | 4.15 |
| 16 | 4.05 |
| 17 | 3.95 |
| 18 | 3.85 |
| 19+ | 3.75 |

# Actuarial Basis

## Summary of Plan Provisions

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

| | | |
|---|---|---|
| Plan year | July 1 through June 30 | |
| Eligibility | State employees in covered correctional service. Certain state employees with 75 percent working time spent in direct contact with inmates or patients are also eligible. | |
| **Contributions** | Shown as a percent of salary: | |
| Effective date | **Member** | **Employer** |
| July 1, 2010 to June 30, 2014 | 8.60% | 12.10% |
| July 1, 2014* | 9.10% | 12.85% |
| | Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).<br>**Increase is effective the first day of the first full pay period beginning after July 1, 2014.* | |
| Allowable service | Service during which member contributions were made. May also include certain leave of absence, military service and periods while temporary Worker's Compensation is paid. | |
| Salary | Includes wages, allowances and fees. Excludes lump sum payments of separation and reduced salary while receiving Worker's Compensation benefits. | |
| Average salary | Average of the five highest successive years of Salary. Average Salary is based on all Allowable Service if less than five years. | |
| Vesting | Hired before July 1, 2010: | 100% vested after 3 years of Allowable Service. |
| | Hired after June 30, 2010: | 50% vested after 5 years of Allowable Service;<br>60% vested after 6 years of Allowable Service;<br>70% vested after 7 years of Allowable Service;<br>80% vested after 8 years of Allowable Service;<br>90% vested after 9 years of Allowable Service;<br>100% vested after 10 years of Allowable Service. |
| **Retirement** | | |
| Normal retirement benefit | | |
| Age/Service requirement | Age 55 and vested. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service. | |
| Amount | 2.40% (2.20% if first hired after June 30, 2010) of Average Salary for each year of Allowable Service, pro-rata for completed months. | |
| Early retirement | | |
| Age/Service requirement | Age 50 and vested. | |
| Amount | Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date reduced by 2/10% (5/12% if first hired after June 30, 2010 or if hired before July 1, 2010 and retire after June 30, 2015) per month for each month that the member is under age 55. | |

# Actuarial Basis

## Summary of Plan Provisions (Continued)

| | |
|---|---|
| **Retirement (Continued)** | |
| Form of payment | Life annuity.<br>Actuarially equivalent options are:<br>50%, 75%, or 100% Joint and Survivor, or 15-year certain. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan. |
| Benefit increases | Since 2011, benefit recipients have received annual 2.0% benefit increases. If the accrued liability funding ratio reaches 90% (actuarial accrued liability ratio on a Market Value of Assets basis) for two consecutive years, the benefit increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 18 full months as of the January 1 increase will receive a full increase. Members receiving benefits for at least six months but less than 18 full months as of the January 1 increase will receive a pro rata increase. |
| **Disability** | |
| Duty Disability | |
| Age/Service requirement | Physically or mentally unable to perform normal job duties as a direct result of a disability relating to an incident while performing the duties of the job which present inherent dangers to the employee. Members who become disabled after June 30, 2009 will have disability benefits converted to retirement benefits at age 55 instead of age 65. |
| Amount | 50.00% of Average Salary plus 2.40% (2.20% if first hired after June 30, 2010) of Average Salary for each year in excess of 20 years and 10 months of Allowable Service (pro rata for completed months).<br>Payment begins at disability and ends at age 55 (age 65 if disabled prior to July 1, 2009) or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.<br>Member is reclassified from disabled to retired at age 55 (age 65 if disabled prior to July 1, 2009). Optional amount continues. Otherwise, normal retirement benefit equal to the disability benefit paid, or an actuarially equivalent option. |
| Regular Disability | |
| Age/Service requirement | At least one year of covered Correctional service for employees hired before July 1, 2009, or a vested Correctional employee hired after June 30, 2009, and the employee is determined to have a regular disability not related to an incident while performing the duties of the job. |

# Actuarial Basis

## Summary of Plan Provisions (Continued)

| | |
|---|---|
| **Disability** (Continued) | |
| Amount | Normal retirement benefit based on covered Correctional Service (minimum of 15 years if hired prior to July 1, 2009) and Average Salary at disability.<br><br>Payment begins at disability and ends at age 55 (age 65 if disabled prior to July 1, 2009) or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability. Member is reclassified from disabled to retired at age 55 (age 65 if disabled prior to July 1, 2009). Optional amount continues. Otherwise, normal retirement benefit equal to the disability benefit paid, or an actuarially equivalent option. |
| Benefit Increases | Same as for retirement. |
| **Death** | |
| Surviving spouse benefit | |
| Age/Service requirement | Member at any age or former member age 50 or older who dies before retirement or disability benefit commences and was vested. If a former member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age. |
| Amount | Surviving spouse receives the 100% joint and survivor benefits using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 50 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of member contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death). |
| Benefit increases | Same as for retirement. |
| Surviving dependent children's benefit | |
| Age/service requirement | If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member. |
| Amount | Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children. |
| Benefit increases | Same as for retirement. |
| Refund of contributions with interest | |
| Age/service requirement | Active employee dies and survivor benefits are not payable or a former employee dies before annuity begins. If accumulated member contributions with interest exceed total payments to the surviving spouse and children, then the remainder is paid out. |

# Actuarial Basis

## Summary of Plan Provisions (Continued)

| | |
|---|---|
| **Death** (Continued) | |
| Amount | Member's contributions with 6.00% interest compounded daily until July 1, 2011 and 4.00% thereafter. |
| **Termination** | |
| Refund of contributions | |
| Age/Service requirement | Termination of state service. |
| Amount | Member's contributions with 6.00% interest through June 30, 2011 compounded daily. Beginning July 1, 2011 a member's contributions increase at 4.00% interest compounded daily. If a member is vested, a deferred annuity may be elected in lieu of a refund. |
| Deferred benefit | |
| Age/service requirement | Partially or fully vested. |
| Amount | Benefit computed under law in effect at termination and increased by the following annual augmentation percentage:<br>(a.) 0.00% before July 1, 1971;<br>(b.) 5.00% from July 1, 1971 to January 1, 1981;<br>(c.) 3.00% thereafter (2.50% if hired after June 30, 2006) until January 1 of the year following attainment of age 55 or January 1, 2012, whichever is earlier;<br>(d.) 5.00% thereafter until the annuity begins (2.50% if hired after June 30, 2006), but before January 1, 2012; and<br>(e.) 2.00% from January 1, 2012 thereafter.<br><br>Amount is payable at normal or early retirement. |
| **Optional form conversion factors** | Actuarially equivalent factors based on RP-2000 mortality for healthy annuitants, white collar adjustment, projected to 2027 using scale AA, set forward one year for males and set back one year for females, blended 70% males, and 6.5% interest. |
| **Combined service annuity** | Members are eligible for combined service benefits if they:<br>(a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement;<br>(b.) Have at least six months of allowable service credit in each plan worked under; and<br>(c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year.<br><br>Members who meet the above requirements must have their benefit based on the following:<br>(a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement.<br>(b.) Average salary is based on the high five consecutive years during their entire service in all covered plans. |

# Actuarial Basis

## Summary of Plan Provisions (Concluded)

| | |
|---|---|
| **Contribution Stabilizer** | The following is a summary of contribution stabilizer provisions in Minnesota Statute 352.045:<br><br>• If a contribution sufficiency of at least 1.0% has existed for two consecutive years, member contributions are decreased by at most 0.25% and employer contributions are decreased by at most 0.375% to a level that is necessary to maintain a 1.0% sufficiency. A contribution rate decrease under this section must not be made until at least two years have passed since fully implementing a previous decrease.<br><br>• If a contribution deficiency of at least 0.5% has existed for two consecutive years, the member and employer contribution rates are increased as follows:<br><br>o If the contribution deficiency is less than 2.0%, member contributions are increased 0.25% and employer contributions are increased by 0.375%.<br><br>o If the contribution deficiency is greater than 1.99% and less than 4.01%, member contributions are increased 0.50% and employer contributions are increased by 0.75%.<br><br>o If the contribution deficiency is greater than 4.0%, member contributions are increased by 0.75% and employer contributions are increased by 1.125%. |
| **Changes in plan provisions** | Member contribution rates increased from 8.60% to 9.10% of pay and employer contribution rates increased from 12.10% to 12.85% of pay effective the first day of the first full pay period beginning after July 1, 2014.<br><br>The funding ratio threshold that must be attained to pay a 2.5% post-retirement benefit increase to benefit recipients was changed from 90% for one year to 90% for two consecutive years. |

# Additional Schedules

## Schedule of Funding Progress[1] *(Dollars in Thousands)*

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio (a)/(b) | Actual Covered Payroll (Previous FY) (c) | UAAL as a Percentage of Covered Payroll [(b)-(a)]/(c) |
|---|---|---|---|---|---|---|
| 7-1-1991 | $ 105,925 | $ 112,171 | $ 6,246 | 94.43% | $ 43,429 | 14.38 % |
| 7-1-1992 | 121,051 | 123,515 | 2,464 | 98.01 | 47,592 | 5.18 |
| 7-1-1993 | 135,939 | 134,280 | (1,659) | 101.24 | 52,122 | (3.18) |
| 7-1-1994 | 148,163 | 152,702 | 4,539 | 97.03 | 54,673 | 8.30 |
| 7-1-1995 | 165,427 | 153,491 | (11,936) | 107.78 | 66,939 | (17.83) |
| 7-1-1996 | 193,833 | 170,959 | (22,874) | 113.38 | 72,959 | (31.35) |
| 7-1-1997 | 241,916 | 212,638 | (29,278) | 113.77 | 112,408 | (26.05) |
| 7-1-1998 | 295,291 | 261,869 | (33,422) | 112.76 | 105,796 | (31.59) |
| 7-1-1999 | 335,408 | 307,408 | (28,000) | 109.11 | 106,131 | (26.38) |
| 7-1-2000 | 386,964 | 359,885 | (27,079) | 107.52 | 112,587 | (24.05) |
| 7-1-2001 | 431,134 | 398,633 | (32,501) | 108.15 | 120,947 | (26.87) |
| 7-1-2002 | 457,416 | 446,426 | (10,990) | 102.46 | 124,373 | (8.84) |
| 7-1-2003 | 470,716 | 484,974 | 14,258 | 97.06 | 131,328 | 10.86 |
| 7-1-2004 | 486,617 | 524,215 | 37,598 | 92.83 | 133,172 | 28.23 |
| 7-1-2005 | 503,573 | 546,118 | 42,545 [2] | 92.21 | 132,335 | 32.15 |
| 7-1-2006 | 535,357 | 647,480 | 112,123 | 82.68 | 145,879 | 76.86 |
| 7-1-2007 | 559,852 | 708,292 | 148,440 | 79.04 | 167,727 | 88.50 |
| 7-1-2008 | 572,719 | 760,363 | 187,644 | 75.32 | 194,391 | 96.53 |
| 7-1-2009 | 590,399 | 821,250 | 230,851 | 71.89 | 193,445 | 119.34 |
| 7-1-2010 | 603,863 | 851,086 | 247,223 | 70.95 | 192,450 | 128.46 |
| 7-1-2011 | 637,027 | 907,012 | 269,985 | 70.23 | 197,702 | 136.56 |
| 7-1-2012 | 663,713 | 968,166 | 304,453 | 68.55 | 200,035 [3] | 152.20 |
| 7-1-2013 | 701,091 | 1,026,098 | 325,007 | 68.33 | 204,198 [3] | 159.16 |
| 7-1-2014 | 790,304 | 1,122,474 | 332,170 | 70.41 | 219,244 [3] | 151.51 |

[1] *Information prior to 2012 provided by prior actuary. See prior reports for additional detail.*

[2] *Provided by MSRS instead of prior actuary.*

[3] *Assumed equal to actual member contributions divided by 8.60%.*

# Additional Schedules

## Schedule of Contributions from the Employer and Other Contributing Entities[1]
*(Dollars in Thousands)*

| Plan Year Ended June 30 | Actuarially Required Contribution Rate (a) | Actual Covered Payroll (b) | Actual Member Contributions (c) | Annual Required Contributions [(a)x(b)] - (c) = (d) | Actual Employer Contributions (e) | Percentage Contributed (e)/(d) |
|---|---|---|---|---|---|---|
| 1991 | 10.73% | $ 43,429 | $ 2,128 | $ 2,532 | $ 2,731 | 107.86% |
| 1992 | 10.82 | 47,592 | 2,332 | 2,817 | 2,955 | 104.90 |
| 1993 | 11.41 | 52,122 | 2,554 | 3,393 | 3,217 | 94.81 |
| 1994 | 10.97 | 54,673 | 2,679 | 3,319 | 3,355 | 101.08 |
| 1995 | 11.30 | 66,939 | 3,280 | 4,284 | 4,195 | 97.92 |
| 1996 | 11.11 | 72,959 | 3,575 | 4,531 | 4,559 | 100.62 |
| 1997 | 11.21 | 112,408 | 5,508 | 7,093 | 9,129 | 128.70 |
| 1998 | 12.49 | 105,796 | 5,954 | 7,260 | 8,146 | 112.20 |
| 1999 | 12.99 | 106,131 | 6,378 | 7,408 | 8,172 | 110.31 |
| 2000 | 13.66 | 112,587 | 6,526 | 8,853 | 8,984 | 101.48 |
| 2001 | 13.72 | 120,947 | 6,996 | 9,598 | 9,652 | 100.56 |
| 2002 | 13.81 | 124,373 | 7,207 | 9,969 | 9,925 | 99.56 |
| 2003 | 14.73 | 131,328 | 7,610 | 11,735 | 10,480 | 89.31 |
| 2004 | 15.83 | 133,172 | 7,748 | 13,333 | 10,627 | 79.71 |
| 2005 | 17.48 | 132,335 | 7,943 | 15,189 | 11,016 | 72.52 |
| 2006 | 17.71 | 145,879 | 8,964 | 16,871 | 12,152 | 72.03 |
| 2007 | 23.34 | 167,727 | 10,032 | 29,115 | 13,927 | 47.83 |
| 2008 | 24.44 | 194,391 | 12,775 | 34,734 | 18,623 | 53.62 |
| 2009 | 23.66 | 193,445 | 14,031 | 31,738 | 20,126 | 63.41 |
| 2010 | 24.85 | 192,450 | 15,267 | 32,557 | 21,988 | 67.54 |
| 2011 | 25.43 | 197,702 | 17,002 | 33,274 | 23,892 | 71.80 |
| 2012 | 26.00 | 200,035 [2] | 17,203 | 34,806 | 24,188 | 69.49 |
| 2013 | 25.28 | 204,198 [2] | 17,561 | 34,060 | 24,632 | 72.32 |
| 2014 | 26.11 | 219,244 [2] | 18,855 | 38,390 | 26,468 | 68.95 |
| 2015 | 26.43 | N/A | N/A | N/A | N/A | N/A |

[1] *Information prior to 2012 provided by prior actuary. See prior reports for additional detail.*
[2] *Assumed equal to actual member contributions divided by 8.60%.*

# Glossary of Terms

| | |
|---|---|
| ***Accrued Benefit Funding Ratio*** | The ratio of assets to Current Benefit Obligations. |
| ***Accrued Liability Funding Ratio*** | The ratio of assets to Actuarial Accrued Liability. |
| ***Actuarial Accrued Liability (AAL)*** | The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs. |
| ***Actuarial Assumptions*** | Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items. |
| ***Actuarial Cost Method*** | A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of future Normal Costs and the Actuarial Accrued Liability. |
| ***Actuarial Equivalent*** | Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions. |
| ***Actuarial Present Value (APV)*** | The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made. |
| ***Actuarial Present Value of Projected Benefits*** | The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due. |
| ***Actuarial Valuation*** | The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for developing and monitoring a retirement system's funding policy, such as the Funded Ratio and the Annual Required Contribution (ARC). |
| ***Actuarial Value of Assets*** | The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution (ARC). |

# Glossary of Terms (Continued)

| | |
|---|---|
| ***Amortization Method*** | A method for determining the Amortization Payment. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. The stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase. |
| ***Amortization Payment*** | That portion of the plan contribution or ARC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability. |
| ***Amortization Period*** | The period used in calculating the Amortization Payment. |
| ***Annual Required Contribution (ARC)*** | The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ARC consists of the Employer Normal Cost and Amortization Payment. |
| ***Augmentation*** | Annual increases to deferred benefits. |
| ***Closed Amortization Period*** | A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. |
| ***Current Benefit Obligations*** | The present value of benefits earned to the valuation date, based on current service and including future salary increases to retirement. |
| ***Employer Normal Cost*** | The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions. |
| ***Expected Assets*** | The present value of anticipated future contributions intended to fund benefits for current members. |
| ***Experience Gain/Loss*** | A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected. |

# Glossary of Terms (Concluded)

| | |
|---|---|
| ***GASB*** | Governmental Accounting Standards Board. |
| ***GASB Statements No. 25 and No. 27*** | These are the governmental accounting standards that set the accounting and financial reporting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 27 sets the accounting and financial reporting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 25 sets the rules for the systems themselves. These statements remain in effect only for pension plans that are not administered as trusts or equivalent arrangements. Please refer to the definition of GASB Statements No. 67 and No. 68 below. |
| ***GASB Statement No. 50*** | The accounting standard governing a state or local governmental employer's accounting for pensions. This statement remains in effect only for pension plans that are not administered as trusts. Please refer to the definition of GASB Statements No. 67 and No. 68. |
| ***GASB Statements No. 67 and No. 68*** | Statements No. 67 and No. 68, issued in June 2012, replace the requirements of Statements No. 25, No. 27 and No. 50, respectively, for pension plans administered as trusts. Statement No. 68, effective for the fiscal year beginning July 1, 2014, sets the accounting and financial reporting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67, effective for the fiscal year beginning July 1, 2013, sets the rules for the systems themselves. Accounting and financial reporting rules information prepared according to Statements No. 67 and No. 68 will be provided in a separate report beginning with the June 30, 2014 actuarial valuation. |
| ***Normal Cost*** | The annual cost assigned, under the Actuarial Cost Method, to the current plan year. |
| ***Projected Benefit Funding Ratio*** | The ratio of the sum of Actuarial Value of Assets and Expected Assets to the Actuarial Present Value of Projected Benefits. |
| ***Unfunded Actuarial Accrued Liability*** | The difference between the Actuarial Accrued Liability and Actuarial Value of Assets. |
| ***Valuation Date*** | The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date. |