

November 2011

# Local Government Correctional Service Retirement Plan

Actuarial Valuation Report as of July 1, 2011

**MERCER**

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November 2011

Public Employees Retirement Association of Minnesota  
Local Government Correctional Service Retirement Plan  
St. Paul MN

Dear Trustees of the Public Employees Local Government Correctional Service Retirement Plan:

Submitted in this report are the July 1, 2011 actuarial valuation results for the Public Employees Local Government Correctional Service Retirement Plan. The purposes of this report are to:

- Present Mercer's actuarial estimates of the Plan's liabilities and expenses as required by Minnesota Statutes, Section 356.215 and the Standards for Actuarial Work established by the State of Minnesota Legislative Commission on Pensions and Retirement (LCPR) for the Public Employees Retirement Association of Minnesota (PERA) to incorporate, as PERA deems appropriate, in its financial statements; and
- Provide the actuarially required contribution rate for the fiscal year beginning July 1, 2011.

To the best of our knowledge and belief, the valuation 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, including one modification regarding decrement timing. The LCPR approved this modification prior to the preparation of this report in order to ensure consistency and comparability. For more information about the decrement timing methodology, please refer to the *Actuarial Basis* section.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate. Moreover, this report contains a Glossary of certain terms referenced in the report, which you may wish to consult before reviewing the report. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. In addition, Mr. Dickson meets the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c). We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.

Respectfully submitted,



Gary D. Dickson, FSA, EA, MAAA



Bonita J. Wurst, ASA, EA, MAAA

## Highlights

### Contributions

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

| Contributions  | Actuarial Valuation as of |              |
|--|---------------------------|--------------|
|  | July 1, 2011              | July 1, 2010 |
| Statutory Contributions – Chapter 353 (% of Payroll) | 14.58%                    | 14.58%       |
| Required Contributions – Chapter 356 (% of Payroll)  | 13.42%                    | 13.21%       |
| Sufficiency / (Deficiency)                           | 1.16%                     | 1.37%        |

The contribution sufficiency decreased from 1.37% of payroll to 1.16% of payroll. The primary reasons for the decrease in the sufficiency level were the recognition of deferred investment losses in the actuarial value of assets and the reinstatement of 2.5% post-retirement benefit increases due to the attainment of a 90% funding ratio. These increases were partially offset by actuarial gains due to salary increases that were lower than assumed.

The *Plan Assets* section provides detail on the plan assets used for the valuation including a development of the smoothed actuarial value of assets (AVA). The market value of assets (MVA) earned approximately 23% for the plan year ending June 30, 2011. The AVA earned approximately 5% for the plan year ending June 30, 2011 as compared to the assumed rate of 8.5%, which is 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. The *Plan Accounting* section details the required accounting information for the Plan under GASB Statement No. 25 (as amended by GASB 50).

Changes in plan provisions and actuarial assumptions are reflected in this report and summarized in the *Actuarial Basis* and *Effects of Changes* sections.

## Principal 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.

|   | <b>Actuarial Valuation as of</b> |                     |
|---|----------------------------------|---------------------|
|   | <b>July 1, 2011</b>              | <b>July 1, 2010</b> |
| <b>Contributions (% of Payroll)</b>               |                                  |                     |
| Statutory – Chapter 353                           | 14.58%                           | 14.58%              |
| Required – Chapter 356                            | 13.42%                           | 13.21%              |
| Sufficiency / (Deficiency)                        | 1.16%                            | 1.37%               |
| <b>Funding Ratios (Dollars in Thousands)</b>      |                                  |                     |
| Accrued Benefit Funding Ratio                     |                                  |                     |
| – Current assets (AVA)                            | \$ 274,704                       | \$ 242,019          |
| – Current benefit obligations                     | 264,480                          | 230,614             |
| – Funding ratio                                   | 103.87%                          | 104.95%             |
| Accrued Liability Funding Ratio                   |                                  |                     |
| – Current assets (AVA)                            | \$ 274,704                       | \$ 242,019          |
| – Market value of assets (MVA)                    | 280,031                          | 211,368             |
| – Actuarial accrued liability                     | 284,593                          | 248,867             |
| – Funding ratio (AVA)                             | 96.53%                           | 97.25%              |
| – Funding ratio (MVA)                             | 98.40%                           | 84.93%              |
| Projected Benefit Funding Ratio (AVA)             |                                  |                     |
| – Current and expected future assets              | \$ 458,282                       | \$ 426,242          |
| – Current and expected future benefit obligations | 439,318                          | 402,772             |
| – Projected benefit funding ratio                 | 104.32%                          | 105.83%             |
| Participant Data                                  |                                  |                     |
| Active members                                    |                                  |                     |
| – Number  | 3,510                            | 3,521               |
| – Projected annual earnings (000s)                | \$ 173,157                       | \$ 170,693          |
| – Average annual earnings (projected)             | \$ 49,332                        | \$ 48,479           |
| – Average age                                     | 40.6                             | 40.3                |
| – Average service                                 | 6.9                              | 6.4                 |
| Service retirements                               | 373                              | 308                 |
| Survivors   | 22                               | 18                  |
| Disability retirements                            | 133                              | 116                 |
| Deferred retirements                              | 1,981                            | 1,895               |
| Terminated other non-vested                       | 1,624                            | 1,605               |
| <b>Total</b>                                      | <b>7,643</b>                     | <b>7,463</b>        |

## Effects of Changes

The following changes in plan provisions and actuarial assumptions were recognized as of July 1, 2011:

- Post-retirement benefit increases change from 1.0% to 2.5% beginning January 1, 2012. If the accrued liability funded ratio of the plan drops below 90% (on a market value of assets basis) in the future, the benefit increase will revert to 1.0%. The mandated post-retirement investment return changed from 7.5% for the first four years to 6.0% for all years to reflect the change in post-retirement benefit increases.

The impact of the above change was to increase the accrued liability by \$3 million and increase the required contribution by 0.2% of pay, as follows:

|  | <b>Before Plan<br/>and Assumption<br/>Changes</b> | <b>Reflecting Plan<br/>and Assumption<br/>Changes</b> | <b>Impact of<br/>Changes</b> |
|--|---|---|------------------------------|
| Normal Cost Rate (% of pay)            | 12.6%   | 12.7%   | 0.1%                         |
| Amortization of Unfunded (% of pay)    | 0.5%  | 0.6%  | 0.1%                         |
| Expenses (% of pay)                    | 0.1%  | 0.1%  | 0.0%                         |
| Total Required Contribution (% of Pay) | 13.2%   | 13.4%   | 0.2%                         |
| Accrued Liability Funding Ratio (AVA)  | 97.4%   | 96.5%   | (0.9%)                       |
| Projected Benefit Funding Ratio        | 105.3%  | 104.3%  | (1.0%)                       |
| Unfunded Accrued Liability (000's)     | \$ 7,000  | \$ 10,000   | \$ 3,000                     |

## Important Notices

Mercer has prepared this report exclusively for the Public Employees Retirement Association of Minnesota (PERA) and the Legislative Commission on Pensions and Retirement (LCPR); Mercer is not responsible for reliance upon this report by any other party. Subject to this limitation, PERA may direct that this report be provided to its auditors in connection with audits of the Plan or its sponsoring entities.

The only purposes of this report are to:

- Present Mercer's actuarial estimates of the Plan's liabilities and expenses as required by Minnesota Statutes, Section 356.215 and the Standards for Actuarial Work established by the State of Minnesota LCPR for PERA to incorporate, as PERA deems appropriate, in its financial statements; and
- provide the actuarially required contribution rate for the fiscal year beginning July 1, 2011.

This report may not be used for any other purpose; Mercer is not responsible for the consequences of any unauthorized use.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security and/or benefit-related issues should not be made on the basis of this valuation, but only after careful consideration of alternative economic, financial, demographic and societal factors, including financial scenarios that assume future sustained investment losses.

The State Board of Investment (SBI) is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Mercer's actuaries have not provided any investment advice to the Board of Directors of the SBI.

A valuation report is only a snapshot of a Plan's estimated financial condition at a particular point in time; it does not predict the Plan's future financial condition or its ability to pay benefits in the future and does not provide any guarantee of future financial soundness of the Plan. Over time, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the period of time over which benefits are paid, plan expenses and the amount earned on any assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the valuation date.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the plan.

To prepare the valuation report, actuarial assumptions, as described in the *Actuarial Basis* section of this report, are used in a forward looking financial and demographic model to present a single scenario from a wide range of possibilities; the results based on that single scenario are included in the valuation. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those

## Important Notices

utilized in this report. We have not been engaged to perform such a sensitivity analysis and thus the results of such an analysis are not included in this report. At PERA's request, Mercer is available to perform such a sensitivity analysis.

Actuarial assumptions may also be changed from one valuation to the next because of changes in mandated requirements, plan experience, changes in expectations about the future and other factors. A change in assumptions is not an indication that prior assumptions were unreasonable when made.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this report, you selected an assumption based on the expected long term rate of return on plan investments. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely "correct" level of contributions for the coming plan year.

Valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contributions not made this year, for whatever reason, including errors, remain the responsibility of the Plan sponsor and can be made in later years. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this with a view to funding the plan over time.

Data, computer coding and mathematical errors are possible in the preparation of a valuation involving complex computer programming and thousands of calculations and data inputs. Errors in a valuation discovered after its preparation may be corrected by amendment to the valuation or in a subsequent year's valuation.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the LCPR, and the Trustees. 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* section of this report. PERA is solely responsible for communicating to Mercer any changes required thereto.

To prepare this report Mercer has used and relied on financial data and participant data supplied by PERA and summarized in the *Plan Assets* and *Membership Data* sections of this report. PERA is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of the valuation date that is sufficiently comprehensive and accurate for the purposes of this report. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.

Mercer has also used and relied on the summary of plan provisions, including amendments, and interpretations of plan provisions, supplied by PERA as summarized in the *Actuarial Basis* section of this report and on plan provisions stipulated by statute. We have assumed for purposes of this valuation that copies of any official plan document including all amendments as well as any interpretations of any such document have been provided to Mercer along with a written summary of any other substantive commitments. The Trustees are solely responsible



## Important Notices

for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the valuation results may differ significantly from the results that would be obtained with accurate and complete information; this may require a later revision of this report. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

PERA should notify Mercer promptly after receipt of the valuation report if PERA disagrees with anything contained in the valuation report or is aware of any information that would affect the results of the valuation report that has not been communicated to Mercer or incorporated therein. The valuation report will be deemed final and acceptable to PERA unless PERA promptly provides such notice to Mercer.

The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

## 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 Public Employees Retirement Association of Minnesota. The fund 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.
- **Plan accounting under GASB 25 (as amended by GASB 50)** shows the disclosures required by GASB Statement No. 25 as amended by GASB Statement No. 50.
- **Glossary** defines the terms used in this report.

## Plan Assets

Statement of Plan Net Assets for Year Ended June 30, 2011 *(Dollars in Thousands)*

|  | <b>Market Value</b>     |
|--|-------------------------|
| <hr/>  |                         |
| <b>Assets in Trust</b>                               |                         |
| ▪ Cash, equivalents, short term securities           | \$ 9,138                |
| ▪ Fixed income                                       | 61,581                  |
| ▪ Equity   | 168,800                 |
| ▪ SBI Alternative                                    | 40,777                  |
| <b>Total assets in trust</b>                         | <hr/> <b>\$ 280,296</b> |
| Assets Receivable                                    | 421                     |
| Amounts Payable                                      | (686)                   |
| <b>Net assets held in trust for pension benefits</b> | <b>\$ 280,031</b>       |

## 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 Public Employees Retirement Association for the Plan's Fiscal Year July 1, 2010 to June 30, 2011.

|  | <b>Market Value</b> |
|--|---------------------|
| <b>Change in Assets</b>  |                     |
| 1. Fund balance at market value at July 1, 2010                        | \$ 211,368          |
| 2. Contributions   |                     |
| a. Member  | 9,624               |
| b. Employer  | 14,289              |
| c. Other sources   | 0                   |
| d. Total contributions   | <u>23,913</u>       |
| 3. Investment income   |                     |
| a. Investment income   | 50,731              |
| b. Investment expenses   | (388)               |
| c. Net subtotal  | <u>50,343</u>       |
| 4. Other   | 0                   |
| <b>5. Total income</b> (2.d. + 3.c. + 4.)                              | <b>\$ 74,256</b>    |
| 6. Benefits Paid   |                     |
| a. Annuity benefits  | (4,026)             |
| b. Refunds   | (1,338)             |
| c. Total benefits paid   | <u>(5,364)</u>      |
| 7. Expenses  |                     |
| a. Other   | 0                   |
| b. Administrative  | (229)               |
| c. Total Expenses  | <u>(229)</u>        |
| <b>8. Total distributions</b> (6.c. + 7.c.)                            | <b>\$ (5,593)</b>   |
| <b>9. Fund balance at market value at June 30, 2011</b> (1. + 5. + 8.) | <b>\$ 280,031</b>   |

## Plan Assets

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

|   | <b>June 30, 2011</b>       |                             |                   |
|---|----------------------------|-----------------------------|-------------------|
| 1. Market value of assets available for benefits                    |                            |                             | \$ 280,031        |
| 2. Determination of average balance                                 |                            |                             |                   |
| a. Total assets available at July 1, 2010                           |                            |                             | 211,368           |
| b. Total assets available at June 30, 2011                          |                            |                             | 280,031           |
| c. Net investment income for fiscal year ending June 30, 2011       |                            |                             | 50,343            |
| d. Average balance $[a. + b. - c.] / 2$                             |                            |                             | 220,528           |
| 3. Expected return $[8.5\% \times 2.d.]$                            |                            |                             | 18,745            |
| 4. Actual return  |                            |                             | 50,343            |
| 5. Current year unrecognized asset return $(4. - 3.)$               |                            |                             | 31,598            |
| 6. Unrecognized asset returns*                                      |                            |                             |                   |
|   | <b>Original<br/>Amount</b> | <b>% Not<br/>Recognized</b> |                   |
| a. Year ended June 30, 2011   | \$ 31,598                  | 80%                         | \$ 25,279         |
| b. Year ended June 30, 2010   | 9,703                      | 60%                         | 5,822             |
| c. Year ended June 30, 2009   | (52,626)                   | 40%                         | (21,050)          |
| d. Year ended June 30, 2008   | (23,619)                   | 20%                         | (4,724)           |
| e. Total unrecognized return  |                            |                             | \$ 5,327          |
| <b>7. Actuarial value at June 30, 2011 <math>(1. - 6.e.)</math></b> |                            |                             | <b>\$ 274,704</b> |

\* Prior to the year ending June 30, 2009, unrecognized asset returns do not include Post Fund gains or losses.

## Membership Data

### Distribution of Active Members

| Age                  | Years of Service June 30, 2011 |               |               |               |            |            |            |            |            |            | Total         |
|----------------------|--------------------------------|---------------|---------------|---------------|------------|------------|------------|------------|------------|------------|---------------|
|                      | <3*                            | 3 - 4         | 5 - 9         | 10 - 14       | 15 - 19    | 20 - 24    | 25 - 29    | 30 - 34    | 35 - 38    | 40+        |               |
| <25                  | 150                            | 16            |               |               |            |            |            |            |            |            | 166           |
| Avg. Earnings        | 17,383                         | 35,354        |               |               |            |            |            |            |            |            | 19,115        |
| 25 – 29              | 264                            | 205           | 126           |               |            |            |            |            |            |            | 595           |
| Avg. Earnings        | 23,400                         | 39,739        | 45,098        |               |            |            |            |            |            |            | 33,624        |
| 30 – 34              | 115                            | 124           | 233           | 61            |            |            |            |            |            |            | 533           |
| Avg. Earnings        | 22,287                         | 41,641        | 46,997        | 53,917        |            |            |            |            |            |            | 41,212        |
| 35 – 39              | 58                             | 81            | 170           | 170           |            |            |            |            |            |            | 479           |
| Avg. Earnings        | 23,188                         | 39,942        | 48,521        | 55,807        |            |            |            |            |            |            | 46,589        |
| 40 – 44              | 59                             | 58            | 136           | 232           |            |            |            |            |            |            | 485           |
| Avg. Earnings        | 27,499                         | 41,245        | 51,491        | 57,997        |            |            |            |            |            |            | 50,459        |
| 45 – 49              | 56                             | 45            | 114           | 253           |            |            |            |            |            |            | 468           |
| Avg. Earnings        | 23,825                         | 42,454        | 48,660        | 59,530        |            |            |            |            |            |            | 50,968        |
| 50 – 54              | 24                             | 29            | 90            | 226           |            |            |            |            |            |            | 369           |
| Avg. Earnings        | 17,132                         | 43,631        | 49,819        | 59,329        |            |            |            |            |            |            | 53,032        |
| 55 – 59              | 17                             | 27            | 53            | 183           |            |            |            |            |            |            | 280           |
| Avg. Earnings        | 19,099                         | 41,012        | 44,821        | 57,888        |            |            |            |            |            |            | 51,432        |
| 60 – 64              | 5                              | 6             | 23            | 83            |            |            |            |            |            |            | 117           |
| Avg. Earnings        | 20,063                         | 35,879        | 43,309        | 55,755        |            |            |            |            |            |            | 50,764        |
| 65 – 69              | 1                              | 2             | 3             | 8             |            |            |            |            |            |            | 14            |
| Avg. Earnings        | 8,190                          | 20,012        | 29,593        | 53,935        |            |            |            |            |            |            | 40,605        |
| 70+                  |                                | 2             |               | 2             |            |            |            |            |            |            | 4             |
| Avg. Earnings        |                                | 46,174        |               | 55,801        |            |            |            |            |            |            | 50,987        |
| <b>Total</b>         | <b>749</b>                     | <b>595</b>    | <b>948</b>    | <b>1,218</b>  | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>3,510</b>  |
| <b>Avg. Earnings</b> | <b>22,021</b>                  | <b>40,561</b> | <b>47,864</b> | <b>57,853</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>44,578</b> |

\* This exhibit does not reflect service earned in other PERA plans 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 actual earnings received in fiscal year end 2011.

## Membership Data

### Distribution of Service Retirements

| Age                 | Years Retired as of June 30, 2011 |              |              |            |            |            |            | Total        |
|---------------------|-----------------------------------|--------------|--------------|------------|------------|------------|------------|--------------|
|                     | <1                                | 1 - 4        | 5 - 9        | 10 - 14    | 15 - 19    | 20 - 24    | 25+        |              |
| <45                 |                                   |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                   |              |              |            |            |            |            | N/A          |
| 45 – 49             |                                   |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                   |              |              |            |            |            |            | N/A          |
| 50 – 54             | 2                                 | 9            |              |            |            |            |            | 11           |
| Avg. Benefit        | 9,312                             | 5,421        |              |            |            |            |            | 6,129        |
| 55 – 59             | 16                                | 51           | 4            |            |            |            |            | 71           |
| Avg. Benefit        | 8,117                             | 7,478        | 3,015        |            |            |            |            | 7,370        |
| 60 – 64             | 25                                | 64           | 43           |            |            |            |            | 132          |
| Avg. Benefit        | 8,893                             | 6,570        | 4,330        |            |            |            |            | 6,280        |
| 65 – 69             | 9                                 | 43           | 35           | 2          |            |            |            | 89           |
| Avg. Benefit        | 7,321                             | 8,041        | 3,801        | 446        |            |            |            | 6,130        |
| 70 – 74             |                                   | 9            | 37           | 15         |            |            |            | 61           |
| Avg. Benefit        |                                   | 5,782        | 3,865        | 770        |            |            |            | 3,387        |
| 75 – 79             |                                   | 2            | 2            | 5          |            |            |            | 9            |
| Avg. Benefit        |                                   | 4,592        | 7,651        | 831        |            |            |            | 3,182        |
| 80 – 84             |                                   |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                   |              |              |            |            |            |            | N/A          |
| 85 – 89             |                                   |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                   |              |              |            |            |            |            | N/A          |
| 90+                 |                                   |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                   |              |              |            |            |            |            | N/A          |
| <b>Total</b>        | <b>52</b>                         | <b>178</b>   | <b>121</b>   | <b>22</b>  | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>373</b>   |
| <b>Avg. Benefit</b> | <b>8,398</b>                      | <b>7,065</b> | <b>4,046</b> | <b>755</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>5,899</b> |

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

| Age                 | Years Since Death as of June 30, 2011 |              |              |            |            |            |            | Total        |
|---------------------|---------------------------------------|--------------|--------------|------------|------------|------------|------------|--------------|
|                     | <1                                    | 1 - 4        | 5 - 9        | 10 - 14    | 15 - 19    | 20 - 24    | 25+        |              |
| <45                 |                                       | 5            | 2            |            |            |            |            | 7            |
| Avg. Benefit        |                                       | 5,552        | 697          |            |            |            |            | 4,165        |
| 45 – 49             |                                       | 1            |              |            |            |            |            | 1            |
| Avg. Benefit        |                                       | 2,187        |              |            |            |            |            | 2,187        |
| 50 – 54             |                                       |              |              | 1          |            |            |            | 1            |
| Avg. Benefit        |                                       |              |              | 970        |            |            |            | 970          |
| 55 – 59             |                                       | 3            | 4            |            |            |            |            | 7            |
| Avg. Benefit        |                                       | 5,598        | 4,138        |            |            |            |            | 4,764        |
| 60 – 64             | 1                                     | 1            | 1            |            |            |            |            | 3            |
| Avg. Benefit        | 5,556                                 | 7,120        | 20,034       |            |            |            |            | 10,903       |
| 65 – 69             |                                       | 1            | 2            |            |            |            |            | 3            |
| Avg. Benefit        |                                       | 485          | 7,370        |            |            |            |            | 5,075        |
| 70 – 74             |                                       |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                       |              |              |            |            |            |            | N/A          |
| 75 – 79             |                                       |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                       |              |              |            |            |            |            | N/A          |
| 80 – 84             |                                       |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                       |              |              |            |            |            |            | N/A          |
| 85 – 89             |                                       |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                       |              |              |            |            |            |            | N/A          |
| 90+                 |                                       |              |              |            |            |            |            | 0            |
| Avg. Benefit        |                                       |              |              |            |            |            |            | N/A          |
| <b>Total</b>        | <b>1</b>                              | <b>11</b>    | <b>9</b>     | <b>1</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>22</b>    |
| <b>Avg. Benefit</b> | <b>5,556</b>                          | <b>4,941</b> | <b>5,858</b> | <b>970</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>5,163</b> |

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

| Age                 | Years Disabled as of June 30, 2011 |               |               |               |            |            |            | Total         |
|---------------------|------------------------------------|---------------|---------------|---------------|------------|------------|------------|---------------|
|                     | <1                                 | 1 - 4         | 5 - 9         | 10 - 14       | 15 - 19    | 20 - 24    | 25+        |               |
| <45                 | 3                                  | 14            | 2             |               |            |            |            | 19            |
| Avg. Benefit        | 16,408                             | 13,982        | 15,516        |               |            |            |            | 14,527        |
| 45 – 49             | 1                                  | 7             | 4             | 2             |            |            |            | 14            |
| Avg. Benefit        | 7,483                              | 15,994        | 17,745        | 21,947        |            |            |            | 16,737        |
| 50 – 54             | 1                                  | 12            | 8             |               |            |            |            | 21            |
| Avg. Benefit        | 19,177                             | 18,648        | 20,685        |               |            |            |            | 19,449        |
| 55 – 59             | 4                                  | 15            | 13            | 3             |            |            |            | 35            |
| Avg. Benefit        | 9,754                              | 16,464        | 14,879        | 13,696        |            |            |            | 14,871        |
| 60 – 64             | 1                                  | 11            | 20            | 4             |            |            |            | 36            |
| Avg. Benefit        | 10,415                             | 18,917        | 14,860        | 17,666        |            |            |            | 16,288        |
| 65 – 69             | 3                                  | 5             |               |               |            |            |            | 8             |
| Avg. Benefit        | 17,107                             | 8,226         |               |               |            |            |            | 11,556        |
| 70 – 74             |                                    |               |               |               |            |            |            | 0             |
| Avg. Benefit        |                                    |               |               |               |            |            |            | N/A           |
| 75 – 79             |                                    |               |               |               |            |            |            | 0             |
| Avg. Benefit        |                                    |               |               |               |            |            |            | N/A           |
| 80 – 84             |                                    |               |               |               |            |            |            | 0             |
| Avg. Benefit        |                                    |               |               |               |            |            |            | N/A           |
| 85 – 89             |                                    |               |               |               |            |            |            | 0             |
| Avg. Benefit        |                                    |               |               |               |            |            |            | N/A           |
| 90+                 |                                    |               |               |               |            |            |            | 0             |
| Avg. Benefit        |                                    |               |               |               |            |            |            | N/A           |
| <b>Total</b>        | <b>13</b>                          | <b>64</b>     | <b>47</b>     | <b>9</b>      | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>133</b>    |
| <b>Avg. Benefit</b> | <b>13,587</b>                      | <b>16,057</b> | <b>16,130</b> | <b>17,294</b> | <b>N/A</b> | <b>N/A</b> | <b>N/A</b> | <b>15,925</b> |

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

|                             | Actives      | Terminated          |                  | Recipients          |                        |            | Total        |
|-----------------------------|--------------|---------------------|------------------|---------------------|------------------------|------------|--------------|
|                             |              | Deferred Retirement | Other Non-vested | Service Retirements | Disability Retirements | Survivors* |              |
| <b>Members on 6/30/2010</b> | <b>3,521</b> | <b>1,895</b>        | <b>1,605</b>     | <b>308</b>          | <b>116</b>             | <b>18</b>  | <b>7,463</b> |
| New entrants                | 291          | N/A                 | N/A              | N/A                 | N/A                    | N/A        | <b>291</b>   |
| Return to active            | 31           | (23)                | (8)              | 0                   | 0                      | N/A        | <b>0</b>     |
| Terminated non-vested       | (77)         | N/A                 | 77               | N/A                 | N/A                    | N/A        | <b>0</b>     |
| Service retirements         | (47)         | (18)                | N/A              | 65                  | N/A                    | N/A        | <b>0</b>     |
| Terminated deferred         | (140)        | 140                 | N/A              | N/A                 | 0                      | N/A        | <b>0</b>     |
| Terminated refund           | (55)         | (65)                | (21)             | N/A                 | 0                      | N/A        | <b>(141)</b> |
| Deaths                      | (1)          | (2)                 | 0                | (2)                 | 0                      | 0          | <b>(5)</b>   |
| New beneficiary             | N/A          | N/A                 | N/A              | N/A                 | N/A                    | 4          | <b>4</b>     |
| Payments expired            | N/A          | N/A                 | N/A              | N/A                 | N/A                    | 0          | <b>0</b>     |
| Disabled                    | (13)         | (3)                 | N/A              | N/A                 | 16                     | N/A        | <b>0</b>     |
| Data correction             | 0            | 57                  | (29)             | 2                   | 1                      | 0          | <b>31</b>    |
| Net change                  | (11)         | 86                  | 19               | 65                  | 17                     | 4          | <b>180</b>   |
| <b>Members on 6/30/2011</b> | <b>3,510</b> | <b>1,981</b>        | <b>1,624</b>     | <b>373</b>          | <b>133</b>             | <b>22</b>  | <b>7,643</b> |

\* Includes one multiple beneficiary as of June 30, 2010 and June 30, 2011.

| <b>Former Member Statistics</b>                           | <b>Vested</b> | <b>Non-vested</b> | <b>Total</b>  |
|---|---------------|-------------------|---------------|
| Number  | 1,981         | 1,624             | 3,605         |
| Average Age   | 39.3 years    | 37.2 years        | 38.3 years    |
| Average Service   | 2.8 years     | 0.8 years         | 1.9 years     |
| Average annual benefits, including augmentation to age 55 | \$ 3,232      | N/A               | N/A           |
| Total refund value as of valuation date                   | \$ 11,173,802 | \$ 1,397,544      | \$ 12,571,346 |

## 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 ideally be 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 14.58% 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.

|   |                   |               |              | <b>June 30, 2011</b> |
|---|-------------------|---------------|--------------|----------------------|
| A. Actuarial Value of Assets  |                   |               |              | \$ 274,704           |
| B. Present value of expected future assets                                  |                   |               |              |                      |
| 1. Present value of expected future statutory supplemental contributions    |                   |               |              | \$ 28,853            |
| 2. Present value of future normal cost contributions                        |                   |               |              | 154,725              |
| 3. Total present value of future contributions <i>(1. + 2.)</i>             |                   |               |              | \$ 183,578           |
| C. Total current and expected future assets <i>(A. + B.3.)</i>              |                   |               |              | \$ 458,282           |
| D. Current benefit obligations  |                   |               |              |                      |
| 1. Benefit recipients   |                   |               |              |                      |
|   | <u>Non-Vested</u> | <u>Vested</u> | <u>Total</u> |                      |
| a. Service retirements  | \$ 0              | \$ 24,809     | \$ 24,809    |                      |
| b. Disability   | 0                 | 24,415        | 24,415       |                      |
| c. Survivors  | 0                 | 1,169         | 1,169        |                      |
| 2. Deferred retirements with augmentation                                   | 0                 | 36,694        | 36,694       |                      |
| 3. Former members without vested rights                                     | 1,817             | 0             | 1,817        |                      |
| 4. Active Members   | 2,642             | 172,934       | 175,576      |                      |
| 5. Total Current Benefit Obligations  | \$ 4,459          | \$ 260,021    | \$ 264,480   |                      |
| E. Expected Future Benefit Obligations                                      |                   |               |              | 174,838              |
| F. Total Current and Expected Future Benefit Obligations <i>(D.5. + E.)</i> |                   |               |              | \$ 439,318           |
| G. Unfunded Current Benefit Obligations <i>(D.5. – A.)</i>                  |                   |               |              | \$ (10,224)          |
| H. Unfunded Current and Future Current Benefit Obligations <i>(F. – C.)</i> |                   |               |              | \$ (18,964)          |

## Development of Costs

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

|  | Actuarial Present<br>Value of Projected<br>Benefits | Actuarial Present<br>Value of Future<br>Normal Costs | Actuarial<br>Accrued<br>Liability |
|--|---|--|-----------------------------------|
| <b>A. Determination of Actuarial Accrued Liability (AAL)</b>   |   |  |                                   |
| 1. Active Members  |   |  |                                   |
| a. Retirement annuities  | \$ 266,289  | \$ 99,436  | \$ 166,853                        |
| b. Disability benefits   | 34,160  | 20,670   | 13,490                            |
| c. Survivor's benefits   | 10,815  | 4,911  | 5,904                             |
| d. Deferred retirements  | 29,901  | 17,923   | 11,978                            |
| e. Refunds   | 9,249   | 11,785   | (2,536)                           |
| f. Total   | <u>\$ 350,414</u>                                   | <u>\$ 154,725</u>                                    | <u>\$ 195,689</u>                 |
| 2. Deferred retirements with future augmentation   | 36,694  | 0  | 36,694                            |
| 3. Former members without vested rights  | 1,817   | 0  | 1,817                             |
| 4. Annuitants  | 50,393  | 0  | 50,393                            |
| 5. Total   | <u>\$ 439,318</u>                                   | <u>\$ 154,725</u>                                    | <u>\$ 284,593</u>                 |
| <b>B. Determination of Unfunded Actuarial Accrued Liability (UAAL)</b>   |   |  |                                   |
| 1. Actuarial accrued liability   |   |  | \$ 284,593                        |
| 2. Current assets (AVA)  |   |  | <u>274,704</u>                    |
| 3. Unfunded actuarial accrued liability  |   |  | \$ 9,889                          |
| <b>C. Determination of Supplemental Contribution Rate*</b>   |   |  |                                   |
| 1. Present value of future payrolls through the amortization date of July 1, 2023 (30 years if surplus assets) |   |  | \$ 1,630,999                      |
| 2. Supplemental contribution rate <i>(B.3. / C.1.)</i>   |   |  | 0.61%                             |

\* *The amortization factor as of July 1, 2011 is 9.3646.*

## Development of Costs

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

|  | Year Ending<br>June 30, 2011 |
|--|------------------------------|
| A. Unfunded actuarial accrued liability at beginning of year   | \$ 6,848                     |
| B. Changes due to interest requirements and current rate of funding  |                              |
| 1. Normal cost and expenses  | \$ 21,871                    |
| 2. Contributions   | (23,913)                     |
| 3. Interest on A., B.1. and B.2.   | 495                          |
| 4. Total (B.1. + B.2. + B.3.)  | \$ (1,547)                   |
| C. Expected unfunded actuarial accrued liability at end of year (A. + B.4.)  | \$ 5,301                     |
| D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected                          |                              |
| 1. Salary increases  | \$ (4,585)                   |
| 2. Investment return (AVA)   | 7,224                        |
| 3. Mortality of benefit recipients   | 496                          |
| 4. Other items   | (1,177)                      |
| 5. Total   | \$ 1,958                     |
| E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions (C. + D.5.) | \$ 7,259                     |
| F. Change in unfunded actuarial accrued liability due to changes in plan provisions  | \$ 2,630                     |
| G. Change in unfunded actuarial accrued liability due to changes in actuarial assumptions*                                     | \$ 0                         |
| H. Change in unfunded actuarial accrued liability due to change in actuarial methods   | \$ 0                         |
| I. Unfunded actuarial accrued liability at end of year (E. + F. + G. + H.)**   | \$ 9,889                     |

\* The effect of the change in the post-retirement investment return assumption is in item F.

\*\* The unfunded accrued liability on a market value of assets basis is \$4,562.

## Development of Costs

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

The Annual Required Contribution (ARC) is the sum of normal cost, a supplemental contribution to amortize the UAAL, and an allowance for expenses.

|   | Percent of<br>Payroll | Dollar<br>Amount |
|---|-----------------------|------------------|
| <b>A. Statutory contributions – Chapter 353</b>   |                       |                  |
| 1. Employee contributions   | 5.83%                 | \$ 10,095        |
| 2. Employer contributions   | 8.75%                 | 15,151           |
| 3. Total  | 14.58%                | \$ 25,246        |
| <b>B. Required contributions – Chapter 356</b>  |                       |                  |
| 1. Normal cost*   |                       |                  |
| a. Retirement benefits  | 8.40%                 | \$ 14,539        |
| b. Disability benefits  | 1.82%                 | 3,157            |
| c. Survivors  | 0.37%                 | 642              |
| d. Deferred retirement benefits   | 1.26%                 | 2,187            |
| e. Refunds  | 0.83%                 | 1,433            |
| f. Total  | 12.68%                | \$ 21,958        |
| 2. Supplemental contribution amortization by July 1, 2023 of Unfunded Actuarial Accrued Liability | 0.61%                 | 1,056            |
| 3. Allowance for expenses   | 0.13%                 | \$ 229           |
| 4. Total  | 13.42%**              | \$ 23,243        |
| <b>C. Contribution Sufficiency/(Deficiency) (A.3. – B.4.)</b>                                     | 1.16%                 | \$ 2,003         |

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$173,157.

\* Normal cost includes a half-year interest adjustment.

\*\* The required contribution on a market value of assets basis is 13.09%.

## Actuarial Basis

### Actuarial Cost Method

Actuarial Accrued Liability and required contributions in this report are computed using the Individual Entry Age Normal Cost Method. This method is prescribed by Minnesota Statutes.

The objective under this method is to fund each member's benefits under the Plan as payments which are level as a percentage of salary, starting at original participation date (or employment date), and continuing until the assumed date of retirement termination, disability or death. For valuation purposes, entry age for each member is determined as the age at valuation minus years of service as of the valuation date.

At any given date, a liability is calculated equal to the contributions which would have been accumulated if this method of funding had always been used, the current plan provisions had always been in place, and all assumptions had been precisely accurate. The difference between this liability and the assets (if any) which are held in the fund is the unfunded liability. The unfunded liability is typically funded over a chosen period in accordance with the amortization schedule.

A detailed description of the calculation follows:

The normal cost for each active member under the assumed retirement age is determined by applying to earnings the level percentage of salary which, if contributed each year from date of entry into the Plan until the assumed retirement (termination, disability or death) date, is sufficient to provide the full value of the benefits expected to be payable.

- The present value of future normal costs is the total of the discounted values of all active members' normal cost, assuming these to be paid in each case from the valuation date until retirement (termination, disability or death) date.
- The present value of projected benefits is calculated as the value of all benefit payments expected to be paid to the Plan's current members, including active and retired members, beneficiaries, and terminated members with vested rights.
- The accrued liability is the excess of the present value of projected benefits over the present value of future normal costs.
- The unfunded liability is the excess of the accrued liability over the assets of the fund, and represents that part of the accrued liability which has not been funded by accumulated past contributions.

Current Benefit Obligation is computed under the Projected Unit Credit cost method.

### Decrement Timing

All decrements are assumed to occur on the anniversary of the valuation date, beginning on the valuation date. Decrement timing is a fundamental part of the computer programming underlying actuarial calculations. Mercer's valuation systems use beginning of year decrements, a generally accepted actuarial practice. The LCPR approved this modification to the Standards for Actuarial Work prior to the preparation of this report in order to ensure consistency and comparability.

## Actuarial Basis

### Asset Valuation Method

**Assets:** 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 for the fiscal year is recognized over five years at 20% per year;
- The asset value is the sum of the market value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four fiscal years.

The Minnesota Post Retirement Investment Fund (Post Fund) was dissolved on June 30, 2009. For the purpose of determining the actuarial value of assets, the Post Fund asset gains or losses for fiscal years ending on or after June 30, 2009 are recognized incrementally over five years at 20% per year, similar to the smoothing described above. Prior to June 30, 2009, Post Fund asset gains and losses were not smoothed.

### Payment on the Unfunded Actuarial Accrued Liability

A level percentage of payroll each year to the statutory amortization date of July 1, 2023 assuming payroll increases of 4.50% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll. Projected payroll is multiplied by 0.957 in the determination of the present value of future payroll to account for timing differences (as required by the Standards for Actuarial Work).

### Benefits included or excluded

To the best of our knowledge, all material benefits have been included in the liability.

**IRC Section 415(b):** The limitations of Internal Revenue Code Section 415(b) have been incorporated into our calculations. Annual benefits may not exceed the limits in IRC Section 415. This limit is indexed annually. For 2011, the limit is \$195,000.

**IRC Section 401(a)17:** The limitations of Internal Revenue Code Section 401(a)(17) have been incorporated into our calculations. Compensation for any 12-month period used to determine accrued benefits may not exceed the limits in IRC Section 401(a)(17) for the calendar year in which the 12-month period begins. This limit is indexed annually. For 2011, the limit is \$245,000.

### 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.

### Changes in methods since prior valuation

None.



# Actuarial Basis

## Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All assumptions are prescribed by Statutes, the LCPR, or the Board of Trustees. These parties are responsible for selecting the assumptions used for this valuation. This plan was enacted July 1, 1999 and has not had an experience study to date.

The *Allowance for Combined Service Annuity* and *Mortality Rates* were based on recommendations by a former actuary. We are unable to judge the reasonableness of these assumptions without performing a substantial amount of additional work beyond the scope of the assignment. The *Mortality Rates* that are prescribed by the LCPR are based on a table that is almost 30 years old. Mortality rates have improved since this table was adopted for use by the plan and are generally expected to continue to improve. Using this table as is does not comply with the guidance in Actuarial Standards of Practice Number 35 (ASOP 35), which requires an explicit assumption about mortality improvement, and if no mortality improvement is assumed after the valuation date, an explanation as to why. To the extent the rates in this table are too high, i.e. mortality has improved or will in the future, this report understates the plan's liabilities and required contributions.

In the event of a conflict between the Standards for Actuarial Work established by the LCPR and ASOP 35, the Standards require that the actuary for the Fund and the Commission's actuary review the situation to determine the approach to completing the valuations. We discussed this issue with Milliman, acting in their capacity as the Commission's actuary, and their preferred approach, as followed herein, is to use the prescribed mortality for 2011 valuations with commentary, and update the mortality assumption in 2012. An experience study has been authorized by PERA and is scheduled to occur in 2012.

|   |   |
|---|---|
| <i>Investment return:</i>                 | 8.5% compounded annually pre-retirement.<br>6.0% compounded annually post-retirement.   |
| <i>Benefit increases after retirement</i> | Payment of annual post-retirement benefit increases of 2.5% accounted for by using a 6.0% post-retirement assumption, as required by statute.   |
| <i>Payroll growth</i>                     | 4.50% per year.   |
| <i>Salary increases</i>                   | 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 new members. |
| <i>Mortality rates</i>                    |   |
| <i>Healthy Pre-retirement</i>             | 1983 Group Annuity Mortality for males set back one year<br>1983 Group Annuity Mortality for females  |
| <i>Healthy Post-retirement</i>            | 1983 Group Annuity Mortality for males set forward two years<br>1983 Group Annuity Mortality for females set forward two years  |
| <i>Disabled</i>                           | Combined Annuity Mortality  |

## Actuarial Basis

### Summary of Actuarial Assumptions *(continued)*

|   |   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|---|---|--------|--------------------------|------|---------------------------|----------|-------------------------|--|--------------------------|-------|--|-------|-------|--|-------|-------|--|-------|-------|--|-------|-------|--|-----------|--------|
| <i>Retirement</i>                             | Members retiring from active status are assumed to retire according to the rates shown in rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | <table> <tr> <td>Ages:</td> <td>50-53</td> <td>2.0%</td> </tr> <tr> <td></td> <td>54</td> <td>5.0%</td> </tr> <tr> <td></td> <td>55</td> <td>25.0%</td> </tr> <tr> <td></td> <td>56-59</td> <td>10.0%</td> </tr> <tr> <td></td> <td>60-61</td> <td>20.0%</td> </tr> <tr> <td></td> <td>62-64</td> <td>40.0%</td> </tr> <tr> <td></td> <td>65-69</td> <td>50.0%</td> </tr> <tr> <td></td> <td>70 &amp; over</td> <td>100.0%</td> </tr> </table>  | Ages:  | 50-53                    | 2.0% |                           | 54       | 5.0%                    |  | 55                       | 25.0% |  | 56-59 | 10.0% |  | 60-61 | 20.0% |  | 62-64 | 40.0% |  | 65-69 | 50.0% |  | 70 & over | 100.0% |
| Ages:   | 50-53   | 2.0%   |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 54  | 5.0%   |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 55  | 25.0%  |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 56-59   | 10.0%  |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 60-61   | 20.0%  |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 62-64   | 40.0%  |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 65-69   | 50.0%  |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 70 & over   | 100.0% |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Withdrawal</i>                             | Graded rates based on actual experience of the Local Government Service Retirement Plan. Rates are shown in rate table.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Disability</i>                             | Rates are shown in rate table.  |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Allowance for Combined Service Annuity</i> | Liabilities for former members are increased by 30.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.  |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Administrative expenses</i>                | Prior year administrative expenses expressed as percentage of prior year payroll.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Refund of contributions</i>                | 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.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Commencement of deferred benefits</i>      | Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Percentage married</i>                     | 85% of members are assumed to be married.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Age of spouse</i>                          | Wives are assumed to be three years younger than their husbands. For members in payment status, actual spouse date of birth is used if provided.<br>Retiring members are assumed to have no dependent children.   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| <i>Form of payment</i>                        | <p>Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows:</p> <table> <tr> <td>Males:</td> <td>25% elect 50% J&amp;S option</td> </tr> <tr> <td></td> <td>25% elect 100% J&amp;S option</td> </tr> <tr> <td>Females:</td> <td>5% elect 50% J&amp;S option</td> </tr> <tr> <td></td> <td>5% elect 100% J&amp;S option</td> </tr> </table> <p>Unmarried and remaining married members retiring from active status are assumed to receive life annuities. Members receiving deferred annuities (including current terminated deferred members ) are assumed to elect a life annuity.</p> | Males: | 25% elect 50% J&S option |      | 25% elect 100% J&S option | Females: | 5% elect 50% J&S option |  | 5% elect 100% J&S option |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| Males:  | 25% elect 50% J&S option  |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 25% elect 100% J&S option   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
| Females:                                      | 5% elect 50% J&S option   |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |
|   | 5% elect 100% J&S option  |        |                          |      |                           |          |                         |  |                          |       |  |       |       |  |       |       |  |       |       |  |       |       |  |           |        |

## Actuarial Basis

### Summary of Actuarial Assumptions *(continued)*

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|   |  |
|---|--|
| <i>Unknown data for members</i>         | <p>To prepare this report, Mercer has used and relied on participant data supplied by the Fund. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.</p> <p>In cases where submitted data was missing or incomplete, the following assumptions were applied:</p> <p><u>Data for active members:</u></p> <p>There were 32 members reported with zero salary. We used prior year salary (31 members), if available; otherwise high five salary with a 10% load to account for salary increases (zero members). If neither prior year salary or high five salary was available, we assumed a value of \$35,000 (one member).</p> <p>There were also 16 members reported without a gender and two members reported without a date of birth. We assumed a date of birth of July 1, 1966 and male gender.</p> <p><u>Data for terminated members:</u></p> <p>We calculated benefits for these members using the reported Average Salary and credited service. If credited service was not reported, we used elapsed time from hire date to termination date (nine members), otherwise we assumed nine years of service (seven members). If termination date was not reported (eight members), we assumed the termination date was equal to the hire date plus credited service, otherwise the valuation date.</p> <p>There were five members reported without a date of birth and 12 members reported without a gender. We assumed a date of birth of July 1, 1966 and male gender.</p> |
| <i>Changes in actuarial assumptions</i> | <p>The post-retirement investment return changed from 7.5% for the first four years to 6.0% to reflect the reinstatement of the 2.5% post-retirement benefit increases due to the attainment of a 90% funded ratio.</p>  |

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# Actuarial Basis

## Summary of Actuarial Assumptions *(continued)*

### Summary of Rates

| Age | Rate (%)                 |        |                     |        |            |                 |
|-----|--------------------------|--------|---------------------|--------|------------|-----------------|
|     | Pre-Retirement Mortality |        | Ultimate Withdrawal |        | Disability | Salary Increase |
|     | Male                     | Female | Male                | Female |            |                 |
| 20  | 0.04%                    | 0.02%  | 24.00%              | 16.00% | 0.04%      | 7.75%           |
| 25  | 0.04                     | 0.03   | 14.70               | 14.20  | 0.06       | 7.00            |
| 30  | 0.06                     | 0.03   | 9.10                | 13.50  | 0.08       | 7.00            |
| 35  | 0.08                     | 0.05   | 6.00                | 12.90  | 0.11       | 7.00            |
| 40  | 0.11                     | 0.07   | 4.40                | 10.40  | 0.18       | 6.50            |
| 45  | 0.19                     | 0.10   | 3.40                | 6.40   | 0.29       | 5.75            |
| 50  | 0.35                     | 0.16   | 2.40                | 4.70   | 0.50       | 5.50            |
| 55  | 0.57                     | 0.25   | 1.40                | 3.30   | 0.88       | 5.25            |
| 60  | 0.84                     | 0.42   | 0.00                | 0.00   | 1.41       | 5.25            |
| 65  | 1.29                     | 0.71   | 0.00                | 0.00   | 0.00       | 5.25            |
| 70  | 2.48                     | 1.24   | 0.00                | 0.00   | 0.00       | 5.25            |

# Actuarial Basis

## Summary of Plan Provisions

Following is a summary of the major plan provisions used in the valuation of this report. PERA 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. Moreover, these plan provisions may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

| <i>Plan year</i>                 | July 1 through June 30   |
|----------------------------------|--|
| <i>Eligibility</i>               | Local government employees in covered correctional service for a county-administered jail or correctional facility or in a regional correctional facility administered by multiple counties, who are directly responsible for security, custody and control of persons confined in jail or facility, who are expected to respond to incidents within the jail or facility, and who are not members of the Public Employees Police and Fire Fund. |
| <i>Contributions</i>             | Shown as a percent of salary:<br>Member: 5.83% of salary.<br>Employer: 8.75% of salary.<br>Member contributions are “picked up” according to the provisions of Internal Revenue Code 414(h).   |
| <i>Allowable service</i>         | Local Government Correctional Service during which member contributions were made (effective July 1, 1999). May also include certain leaves of absence, military service and periods while temporary Worker’s Compensation is paid.  |
| <i>Salary</i>                    | Includes wages, allowances and fees: Excludes lump sum payments at separation and reduced salary while receiving Worker’s Compensation benefits.   |
| <i>Average salary</i>            | Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.  |
| <i>Vesting</i>                   | Hired before July 1, 2010: 100% vested after 3 years of Allowable Service.<br>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.                              |
| <b>Retirement</b>                |  |
| <i>Normal retirement benefit</i> |  |
| <i>Age/Service requirements</i>  | Age 55 and vested. Proportionate retirement annuity is available at age 65 and one year of Allowable Service.  |
| <i>Amount</i>                    | 1.9% of Average Salary for each year of Allowable Service, pro rata for completed months.  |

## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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#### **Retirement** *(continued)*

##### Early retirement

*Age/Service requirements* Age 50 and vested.

*Amount* Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with actuarial reduction to commencement age assuming 3% augmentation to age 55 (2.50% if hired after June 30, 2006).

##### Form of payment

Life annuity. Actuarially equivalent options are:  
25%, 50%, 75% or 100% Joint and Survivor with bounce back feature without additional reduction.

##### Benefit increases

Benefit recipients receive a future annual 2.5% post-retirement benefit increase. If the accrued liability funding ratio drops below 90% (on a Market Value of Assets basis), the benefit increase will revert to 1.0%.  
A benefit recipient who has been receiving a benefit for at least 18 full months as of December 31 will receive a full increase. Members receiving benefits for at least six full months but less than 18 full months will receive a pro rata increase.

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#### **Disability**

##### Duty disability

*Age/service requirement* Member who cannot perform his duties as a direct result of a disability relating to an act of duty specific to protecting the property and personal safety of others.

*Amount* 47.50% of Average Salary plus 1.90% of Average Salary for each year in excess of 25 years of Allowable Service (pro rata for completed months).

Payment begins at disability and ends at age 65 or 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.

##### Regular disability

*Age/service requirement* At least one year of Allowable Service and a disability preventing member from performing normal duties that arise out of activities not related to covered employment or while at work, activities related to duties that do not present inherent dangers specific to occupation.

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## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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|  |   |
|--|---|
| <b><i>Disability (continued)</i></b>                 |   |
| <i>Amount</i>  | Normal Retirement Benefit based on Allowable Service (minimum of 10 years) and Average Salary at disability.<br><br>Payment begins at disability and ends at age 65 or 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.   |
| <hr/>  |   |
| <b><i>Retirement benefit</i></b>                     |   |
| <i>Age/service requirement</i>                       | Age 65 with continued disability.   |
| <i>Amount</i>  | Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.   |
| <i>Form of payment</i>                               | Same as for retirement.   |
| <i>Benefit increases</i>                             | Same as for retirement.   |
| <hr/>  |   |
| <b><i>Death</i></b>                                  |   |
| <b><i>Surviving spouse benefit</i></b>               |   |
| <i>Age/service requirement</i>                       | Member at any age or vested former member age 50 or older who dies before retirement or disability benefit commences. If an active member dies, benefits may commence immediately, regardless of age.   |
| <i>Amount</i>  | Surviving spouse receives the 100% joint and survivor benefit using the Normal Retirement formula above. If commencement is prior to age 50, 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. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death). |
| <i>Benefit increases</i>                             | Same as for retirement.   |
| <b><i>Surviving dependent children's benefit</i></b> |   |
| <i>Age/service requirement</i>                       | 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.   |
| <i>Amount</i>  | 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.   |
| <b><i>Refund of contributions</i></b>                |   |
| <i>Age/service requirement</i>                       | Active employee dies and survivor benefits paid are less than member's contributions or a former employee dies before annuity begins.   |

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## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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|                                 |   |
|---------------------------------|---|
| <b>Death <i>(continued)</i></b> |   |
| <i>Amount</i>                   | If no survivor benefits are paid, the member’s contributions with 6.00% interest until June 30, 2011; 4.00% interest thereafter. If survivor benefits are paid and accumulated contributions exceed total payments to the surviving spouse and children, then the remaining contributions are paid out. |

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|                                       |  |
|---------------------------------------|--|
| <b>Termination</b>                    |  |
| <u><i>Refund of contributions</i></u> |  |
| <i>Age/service requirement</i>        | Termination of local government service.   |
| <i>Amount</i>                         | Member’s contributions with 6.00% interest compounded annually until June 30, 2011; 4.00% interest thereafter.<br>A deferred annuity may be elected in lieu of a refund if vested.   |
| <u><i>Deferred benefit</i></u>        |  |
| <i>Age/service requirement</i>        | Partially or fully vested.   |
| <i>Amount</i>                         | Benefit computed under law in effect at termination and increased by the following percentage (augmentation), compounded annually, if termination of employment is prior to January 1, 2012:<br>(a.) 3.00% (2.50% if hired after June 30, 2006) until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012;<br>(b.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; and<br>(c.) 1.00% from January 1, 2012 thereafter.<br>If a member terminates employment after 2011, they are not eligible for augmentation. |
| <u><i>Form of payment</i></u>         | Same as for retirement.  |

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|   |   |
|---|---|
| <b>Optional form conversion factors</b> | Actuarially equivalent factors based on 1983 Group Annuity Mortality blended 85% male (set forward one year) and 15% female, and 6% interest. |
|---|---|

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## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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|  |  |
|--|--|
| <b><i>Combined Service Annuity</i></b>   | <p>Members are eligible for combined service benefits if they:</p> <ul style="list-style-type: none"> <li>(a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan;</li> <li>or</li> <li>(b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010).</li> </ul> <p>Other requirements for combined service include:</p> <ul style="list-style-type: none"> <li>(a.) Member must have at least six months of allowable service credit in each plan worked under;</li> <li>(b.) Member may not be in receipt of a benefit from another plan.</li> </ul> <p>Members who meet the above requirements must have their benefit based on the following:</p> <ul style="list-style-type: none"> <li>(a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement.</li> <li>(b.) Average salary is based on the high five consecutive years during their entire service in all covered plans</li> </ul> |
| <b><i>Changes in Plan Provisions</i></b> | <p>Post-retirement benefit increases change from 1.0% to 2.5% beginning January 1, 2012 due to the attainment of a 90% funded ratio. If the accrued liability funding ratio of the plan drops below 90% (on a market value of assets basis), the benefit increase will revert to 1.0%.</p>   |

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## Plan Accounting Under GASB 25 (as amended by GASB 50)

Provided below is information required under GASB Statement No. 25 as amended by GASB Statement No. 50 – Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans as amended by GASB Statement No. 50.

### Schedule of Funding Progress<sup>1</sup> (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 $\frac{(b) - (a)}{(c)}$ |
|--------------------------|-------------------------------|---------------------------------------|--|----------------------|--|---|
| 07/01/2000               | \$ 11,116                     | \$ 10,195                             | \$ (921)                                   | 109.03%              | \$ 70,690                                | (1.30%)   |
| 07/01/2001               | 25,014                        | 25,453                                | 439  | 98.28%               | 91,025                                   | 0.48%   |
| 07/01/2002               | 40,105                        | 42,144                                | 2,039                                      | 95.16%               | 101,309                                  | 2.01%   |
| 07/01/2003               | 56,487                        | 62,542                                | 6,055                                      | 90.32%               | 110,296                                  | 5.49%   |
| 07/01/2004               | 75,515                        | 85,693                                | 10,178                                     | 88.12%               | 109,600                                  | 9.29%   |
| 07/01/2005               | 98,156                        | 108,926                               | 10,770                                     | 90.11%               | 116,849                                  | 9.22%   |
| 07/01/2006               | 125,776                       | 133,306                               | 7,530                                      | 94.35%               | 125,189                                  | 6.01%   |
| 07/01/2007               | 159,548                       | 162,169                               | 2,621                                      | 98.38%               | 134,117                                  | 1.95%   |
| 07/01/2008               | 192,937                       | 192,572                               | (365)                                      | 100.19%              | 154,202                                  | (0.24%)   |
| 07/01/2009               | 217,577                       | 229,383                               | 11,806                                     | 94.85%               | 154,650                                  | 7.63%   |
| 07/01/2010               | 242,019                       | 248,867                               | 6,848                                      | 97.25%               | 154,777                                  | 4.42%   |
| 07/01/2011               | 274,704                       | 284,593                               | 9,889                                      | 96.53%               | 165,077 <sup>2</sup>                     | 5.99%   |

<sup>1</sup> Information prior to 2008 provided by The Segal Company.

<sup>2</sup> Assumed equal to actual member contributions divided by 5.83%.

## Plan Accounting Under GASB 25 (as amended by GASB 50)

### Schedule of Contributions from the Employer and Other Contributing Entities<sup>1</sup> (Dollars in Thousands)

The GASB Statement No. 25 (as amended by GASB 50) required and actual contributions are as follows:

| Plan Year Ended June 30 | Actuarially Required Contribution Rate <sup>2</sup> (a) | Actual Covered Payroll (b) | Actual Member Contributions (c) | Annual Required Contributions [(a)x(b)] – (c) = (d) | Actual Employer Contributions <sup>3</sup> (e) | Percentage Contributed (e)/(d) |
|-------------------------|---|----------------------------|---------------------------------|---|--|--------------------------------|
| 2000                    | 15.03%  | \$ 70,690                  | \$ 4,382                        | \$ 6,243  | \$ 6,487                                       | 103.91%                        |
| 2001 <sup>4</sup>       | 14.36%  | 91,025                     | 5,308                           | 7,763   | 8,054  | 103.75%                        |
| 2002                    | 14.21%  | 101,309                    | 5,882                           | 8,514   | 8,830  | 103.71%                        |
| 2003 <sup>5</sup>       | 14.10%  | 110,296                    | 6,430                           | 9,122   | 9,645  | 105.74%                        |
| 2004                    | 14.15%  | 109,600                    | 6,672                           | 8,837   | 10,029   | 113.50%                        |
| 2005                    | 13.06%  | 116,849                    | 7,192                           | 8,068   | 10,814   | 134.03%                        |
| 2006                    | 13.09%  | 125,189                    | 7,881                           | 8,507   | 11,826   | 139.02%                        |
| 2007                    | 12.71%  | 134,117                    | 8,335                           | 8,712   | 12,499   | 143.48%                        |
| 2008 <sup>6</sup>       | 12.37%  | 154,202                    | 8,922                           | 10,153  | 13,388   | 131.87%                        |
| 2009                    | 13.50%  | 154,650                    | 9,409                           | 11,469  | 14,124   | 123.15%                        |
| 2010 <sup>7</sup>       | 14.03%  | 154,777                    | 9,442                           | 12,273  | 14,170   | 115.46%                        |
| 2011 <sup>8</sup>       | 13.21%  | 165,077 <sup>9</sup>       | 9,624                           | 12,183  | 14,289   | 117.29%                        |
| 2012 <sup>10</sup>      | 13.42%  |                            |                                 |   |  |                                |

<sup>1</sup> Information prior to 2008 provided by The Segal Company.

<sup>2</sup> Actuarially Required Contributions calculated according to parameters of GASB 25 with no assumption for growth of covered population.

<sup>3</sup> Includes contributions from other sources (if applicable).

<sup>4</sup> Actuarially Required Contributions Rate prior to change in Asset Valuation Method is 14.38%.

<sup>5</sup> Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 14.08%.

<sup>6</sup> Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 12.33%.

<sup>7</sup> Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 14.16%.

<sup>8</sup> Actuarially Required Contribution Rate prior to change in Plan Provisions is 14.52%.

<sup>9</sup> Assumed equal to actual member contributions divided by 5.83%.

<sup>10</sup> Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Plan Provisions is 13.18%.

## Glossary

**Actuarial Asset Value.** The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method. The goal of an asset valuation method is to produce a relatively stable asset value thereby reducing year-to-year volatility in contribution requirements.

**Actuarial Cost Method.** Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the Annual Required Contribution (ARC) calculated for plan financial reporting is established by the actuarial cost method and comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

**Annual Pension Cost.** A measure of the periodic cost of an employer’s participation in a defined benefit pension plan.

**Annual Required Contribution (ARC).** The employer’s recommended annual contribution to a defined benefit pension plan, calculated in accordance with the parameters of GASB 25 (as amended by GASB 50) or GASB 27. The ARC for a given fiscal reporting period is affected by the specific actuarial cost method selected by the plan sponsor.

**ASA.** Associate of the Society of Actuaries.

**Augmentation.** Annual increases to deferred benefits.

**Current Benefit Obligations.** The present value of benefits earned to the valuation date, based on current service and including future salary increases to retirement.

**EA.** Enrolled Actuary.

**FSA.** Fellow of the Society of Actuaries.

**MAAA.** Member of the American Academy of Actuaries.

**Normal Cost.** The annual cost assigned to the current year, under the actuarial cost method in use.

**Present Value.** Sometimes called “actuarial present value,” the current worth (on the valuation date) of an amount or series of amounts payable or receivable in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

**Statement No. 25 of the Governmental Accounting Standards Board (GASB 25).** The accounting standard governing the financial reporting for defined benefit pension plans and note disclosures for defined contribution plans.

**Statement No. 27 of the Governmental Accounting Standards Board (GASB 27).** The accounting standard governing a state or local governmental employer’s accounting for pensions.

**Statement No. 50 of the Governmental Accounting Standards Board (GASB 50).** The accounting standard amending both GASB 25 and GASB 27 to require a schedule of funding progress under the Entry Age Normal method for plans that use the aggregate funding method to determine the Annual Required Contribution.

**MERCER**

Mercer (US) Inc.  
333 South 7th Street, Suite 1600  
Minneapolis, MN 55402-2427  
612 642 8600

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