

***SOUTH DAKOTA RETIREMENT SYSTEM***

***ACTUARIAL VALUATION  
AS OF JUNE 30, 2010***

Submitted By:  
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1200 Seventeenth Street, Suite 1200  
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November 12, 2010

Board of Trustees  
South Dakota Retirement System  
Post Office Box 1098  
Pierre, SD 57501-1098

This report summarizes the results of Buck Consultants, LLC's annual Actuarial Valuation of the South Dakota Retirement System (SDRS) as of June 30, 2010.

This Actuarial Valuation is based on financial and Member data provided by SDRS and summarized in this report. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All Members of Participating Units of SDRS and all benefits in effect on July 1, 2010 have been considered in this Actuarial Valuation. SDRS benefit provisions considered, Member data, and Trust Fund information are summarized in the Appendices in this report.

The assumptions and methods used to determine the Annual Required Contributions of the Employers to SDRS as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statement No. 25, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans. Buck Consultants, LLC is solely responsible for the actuarial data presented in this report.

SDRS is funded by Employer and Member Contribution Rates as established by South Dakota law. The funding objective for SDRS is that the required contributions remain level as a percent of Member Compensation at the statutory rates. The SDRS Board of Trustees has also established a funding policy objective that the statutorily required contributions be sufficient to pay the Normal Costs of SDRS, System Expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percent of Member Compensation over a period not to exceed 30 years.

As noted below, this objective is currently being met and is projected to continue to be met.

Our calculations and analysis indicate that the System is meeting its funding objectives and is in actuarial balance. The combined statutory Employer/Member Contributions are sufficient to pay the current Normal Costs and Expenses of the System and amortize the Unfunded Actuarial Accrued Liability over 30 years or less from July 1, 2010. The contractual Employer Contribution Rates to SDRS meet the requirements of the Annual Required Contributions of the Employers of GASB Statement No. 25.

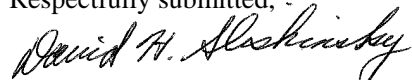
The SDRS Board of Trustees measures and compares the funding progress of SDRS on several bases. The Actuarial Accrued Liability Funded Ratio of SDRS as of June 30, 2010 is 96.3% on an Actuarial Value basis and 87.9% on a Market Value basis.

Based on member data and asset information provided by SDRS, we have prepared the Schedule of Funding Progress and Schedule of Employer Contributions that are included in the Financial section of the CAFR.

The undersigned are Enrolled Actuaries, Associates of the Society of Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all Applicable Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

SDRS is actuarially sound.

Respectfully submitted,



David H. Sliskinsky, ASA, EA, MAAA  
Principal and Consulting Actuary



Douglas J. Fiddler, ASA, EA, MAAA  
Director, Retirement Actuary



# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXECUTIVE SUMMARY**

This Actuarial Valuation is the twenty-fifth Actuarial Valuation of SDRS since consolidation in 1974. Effective with the Actuarial Valuation as of June 30, 1997, annual, rather than biennial, Actuarial Valuations of South Dakota Retirement System (SDRS) are completed.

#### **SDRS Benefit Changes**

The changes made in the SDRS benefit provisions since the 2009 Actuarial Valuation are outlined on page 6. The 2010 Actuarial Valuation is based on all benefit provisions in effect on July 1, 2010.

#### **SDRS Actuarial Assumptions**

There was one change in the actuarial assumptions since the 2009 Actuarial Valuation. The Cost-of-Living Adjustment assumption was decreased from 3.1% compounded annually to 2.8% compounded annually. This assumption change reflects our best long-term estimate of future Cost-of-Living Adjustments considering the changes in benefit provisions effective June 30, 2010.

#### **SDRS Actuarial Methods**

There were no changes in actuarial methods since the 2009 Actuarial Valuation.

#### **Key SDRS Actuarial Measures**

The key actuarial measures determined by the current and prior Actuarial Valuations are as follows:

	<b>June 30, 2009 Actuarial Valuation</b>	<b>June 30, 2010 Actuarial Valuation</b>
Funding Period	N/A <sup>(1)</sup>	30 years
Frozen Unfunded Actuarial Accrued Liability	\$ 608,885,765	\$ 273,376,355
Market Value of Assets	\$ 5,648,767,146	\$ 6,496,634,989
Actuarial Value of Assets	\$ 6,778,520,575	\$ 7,119,874,593
Actuarial Accrued Liability Funded Ratio	91.8%	96.3%
Market Value Funded Ratio	76.5%	87.9%
Reserve for Funding of Long-Term Benefit Goals	\$ (2,030,892,306)	\$ (1,262,374,138)

<sup>(1)</sup> Member and employer contributions were not sufficient to amortize the Frozen Unfunded Actuarial Accrued Liability over any period.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXECUTIVE SUMMARY**

#### **Analysis of Experience for Year Ended June 30, 2010**

SDRS asset and liability gains and losses are generally allocated to the Reserve for Funding of Long-Term Benefit Goals. As a result, the key actuarial measures (with the exception of the Market Value of Assets and the Reserve for Funding of Long-Term Benefit Goals) reflect the expected experience and remain stable from year to year in the absence of extraordinary losses such as those experienced in 2009. Experience variations are reflected in the Reserve for Funding of Long-Term Benefit Goals.

For the year ended June 30, 2010, Actuarial Investment gains of \$492 million of which \$98 million is recognized this year, Net Liability gains of \$14 million due to System liability experience of which \$3 million is recognized this year, recognition of \$251 million of prior gains, and recognition of \$416 million due to the reduction in the Actuarial Value of Assets and the Corrective Actions taken in 2009 and 2010 combined to increase the Reserve for Funding of Long-Term Benefit Goals by \$769 million, resulting in a balance of negative \$1,262 million in the Reserve for Funding of Long-Term Benefit Goals.

As a result, the SDRS Funding Period is now at 30 years, in accordance with the Board of Trustees Funding Policy, and the SDRS Funded Ratio increased to 96.3%.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **GLOSSARY OF ACTUARIAL TERMS**

#### **Actuarial Accrued Liability**

Equal to the Present Value of All Benefits less the Present Value of Future Normal Cost Contributions required for future benefits for SDRS Members and paid from future Employer and Member Contributions. It is the portion of the Present Value of All Benefits assigned to prior periods by the Entry Age Normal Cost Method with Frozen Unfunded Actuarial Accrued Liability. It represents the highest measure of the accrued liabilities of the System.

#### **Actuarial Accrued Liability Funded Ratio**

An actuarial measure of the funding progress and soundness of the System based on the Actuarial Accrued Liability measurement of liabilities. The ratio is required disclosure under Governmental Accounting Standards Board Statement No. 25 and is equal to the Actuarial Value of Assets divided by the Actuarial Accrued Liability. A ratio in excess of 100% would indicate that the Actuarial Accrued Liability is fully funded. A ratio of less than 100% would indicate an Unfunded Liability exists.

#### **Actuarial Investment Gain(s)**

The amount the actual investment return on the Market Value of Assets was greater than the expected investment return (7.75% per annum) on the Actuarial Value of Assets.

#### **Actuarial Investment Loss(es)**

The amount the actual investment return on the Market Value of Assets was less than the expected investment return (7.75% per annum) on the Actuarial Value of Assets.

#### **Actuarial Valuation**

A projection of the Present Value of All Benefits currently earned and expected to be earned in the future by current Members of the System based on actuarial assumptions and actuarial methods as summarized in Exhibit 5. The results of the Actuarial Valuation provide information on the current and future financial soundness of the System.

#### **Actuarial Value of Assets**

The value of assets considered in the Actuarial Valuation of the System and in determining the Funding Period.

The Actuarial Value of Assets is credited each year with the assumed rate of investment return, debited or credited with the SDRS liability gain or loss for the year and constrained to a range of 80% to 120% of the Market Value of Assets. If the Actuarial Value of Assets is constrained by the 80%/120% corridor, the Reserve for Funding Long-Term Benefit Goals will also be appropriately adjusted.

The revised method of determining the Actuarial Value of Assets was first effective for the year ended June 30, 1995, further revised effective for the year ended June 30, 1998, and most recently revised for the year ended June 30, 2004. As of June 30, 2004, the Reserve for Funding of Long-Term Benefit Goals is no longer included in the Actuarial Value of Assets.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **GLOSSARY OF ACTUARIAL TERMS**

#### **Annual Required Contributions of the Employers**

A calculation of the actuarially determined required annual Employer Contributions to SDRS determined in accordance with the parameters of Governmental Accounting Standards Board Statement No. 25. The statement requires that the Employer Contribution be determined in accordance with certain parameters as outlined in the statement and be sufficient to pay the Employer Normal Costs of the System plus amortize the Frozen Unfunded Actuarial Accrued Liability over a period not to exceed 30 years under Board Policy.

#### **Normal Cost Contribution Rate**

The level percentage of Member Compensation which, if paid into the System during the future period of time a Member is accruing Credited Service, will, when combined with the Actuarial Value of Assets and the Frozen Unfunded Actuarial Accrued Liability, accumulate with interest at the rate assumed in the Actuarial Valuation to an amount sufficient to pay all benefits under the System. This Normal Cost Contribution Rate is also referred to as the Normal Cost.

#### **Frozen Unfunded Actuarial Accrued Liability**

In the initial year of the application of the Entry Age Normal Actuarial Cost Method with Frozen Unfunded Actuarial Accrued Liability, the amount in excess of the current Actuarial Value of Assets that would have been accumulated on the valuation date if the Entry Age Normal level funding method had always been used and the Entry Age Normal Cost Contribution Rate for past years had been made. In subsequent years, the Frozen Unfunded Actuarial Accrued Liability is frozen with respect to experience gains and losses. It is reduced by the excess of Employer and Member Contributions over the Interest Charge on the Frozen Unfunded Actuarial Accrued Liability plus the Normal Cost and Expenses of the System. It is increased or decreased by the change in Actuarial Accrued Liability for benefit changes enacted into Law (unless funded from the Reserve for Funding of Long-Term Benefit Goals) and changes in actuarial assumptions. This Frozen Unfunded Actuarial Accrued Liability is also referred to as the Unfunded Actuarial Accrued Liability.

#### **Funding Period**

An actuarial measure of the soundness of the System which measures the length of time in which the Employer and Member Contributions will amortize the Frozen Unfunded Actuarial Accrued Liability as well as pay the Normal Costs, Interest Charge on the Frozen Unfunded Actuarial Accrued Liability, and expenses of the System. The shorter the Funding Period, the more favorable the actuarial balance of the System.

The SDRS Board of Trustees has adopted a funding period policy objective of a period not to exceed 30 years.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **GLOSSARY OF ACTUARIAL TERMS**

#### **Interest Charge on the Frozen Unfunded Actuarial Accrued Liability**

The amount of interest that is accrued each year on the Frozen Unfunded Actuarial Accrued Liability.

#### **Market Value of Assets**

The value of assets as of the date of the Actuarial Valuation at fair market value.

#### **Present Value of All Benefits**

The single sum amount which, if accumulated in a fund in accordance with the actuarial assumptions, would be sufficient to pay all benefits expected to be paid to Retired Members, Beneficiaries and Terminated Members and all benefits expected to be earned by current active Members for past and future Credited Service, as well as future Compensation, as they fall due.

#### **Present Value of Future Normal Cost Contributions**

The Present Value of Future Normal Cost Contributions is the Present Value of Future Normal Costs to be paid by Employer and Member Contributions and is also equal to the excess of the Present Value of All Benefits over the sum of the Actuarial Value of Assets and the Frozen Unfunded Actuarial Accrued Liability.

#### **Reserve for Funding of Long-Term Benefit Goals**

SDRS investment and liability gains and losses are allocated to the Reserve for Funding of Long-Term Benefit Goals. The Reserve for Funding of Long-Term Benefit Goals is equal to the cumulative amounts credited or debited annually based on the immediate recognition of Actuarial Investment Losses, the five-year recognition of Actuarial Investment Gains and the five-year recognition of SDRS liability gains or losses, less reductions described below. If benefit improvements are enacted into Law and funded from the Reserve for Funding of Long-Term Benefit Goals, the Reserve for Funding of Long-Term Benefit Goals is reduced by the Present Value of All Benefits for those improvements. Similarly, benefit reductions will increase the Reserve. The Reserve for Funding of Long-Term Benefit Goals may also be reduced to offset unfavorable experience, if required, to meet the funding objectives of SDRS as established by the Board of Trustees. A positive balance in the Reserve for Funding of Long-Term Benefit Goals indicates that cumulative gains and the net costs of benefit provision changes are greater than cumulative losses to the System. A negative balance in the Reserve for Funding of Long-Term Benefit Goals indicates that cumulative losses are greater than cumulative gains to the System and the net costs of benefit provision changes.

The Reserve for Funding of Long-Term Benefit Goals was initialized for the year ended June 30, 1995 and the methodology was revised for the years ended June 30, 1998 and June 30, 2001. Effective June 30, 2004, the positive balance of this Reserve is no longer included in the Present Value of All Benefits, the Actuarial Accrued Liability, or the Actuarial Value of Assets.

Benefit definitions are summarized in Appendix F, Summary of Principal Benefit Provisions.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **2010 ACTUARIAL VALUATION RESULTS**

#### **Benefit Changes**

During the 2010 South Dakota Legislative Session, benefit changes were made to SDRS that have been reflected in the 2010 Actuarial Valuation. The benefit changes are as follows:

- Eliminated all first year pro-rated Cost-of-Living Adjustments (COLA) for retirees and all other pro-rated benefits including interest credits.
- Modified employer refunds for vested members from 100% to 85% and for non-vested members from 75% to 50% for any terminations after July 1, 2010.
- Reduced the COLA to 2.1% for the adjustment made June 30, 2010.
- Indexed the COLA to CPI and based it on SDRS funded status:
  - If the SDRS market value funded ratio is 100% or more – 3.1% COLA
  - If the SDRS market value funded ratio is 80% to 99.9%, index with the CPI
    - 90% to 99.9% funded – 2.1% minimum and 2.8% maximum COLA
    - 80% to 90% funded – 2.1% minimum and 2.4% maximum COLA
  - If the SDRS market value funded ratio is less than 80% - 2.1% COLA

#### **Summary of Actuarial Assumption and Method Changes**

The Board of Trustees has adopted one change to the actuarial assumptions and methods. The COLA assumption was decreased from 3.1% compounded annually to 2.8% compounded annually. This change is effective July 1, 2010 and reflects our best long-term estimate of future COLAs considering the changes in benefit provisions noted above.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

### **2010 ACTUARIAL VALUATION RESULTS**

#### **Summary of Key Actuarial Measures**

	2009 Actuarial Valuation Results	System Investment and Liability Experience for Year <sup>1</sup>	Membership Changes and Maturity of System <sup>2</sup>	Benefit Changes Effective July 1, 2010 <sup>3</sup>	2010 Actuarial Valuation Results
Normal Cost Rate with Expense Provision	11.547%	--	(0.045)%	--	11.502%
Funding Period	N/A <sup>(4)</sup>	--	--	-- <sup>(5)</sup>	30 Years
Frozen Unfunded Actuarial Accrued Liability	\$609 million	--	\$32 million	\$(368) million	\$273 million
Actuarial Accrued Liability Funded Ratio	91.8%	--	(0.1)%	4.6%	96.3%

<sup>1</sup> SDRS Actuarial Investment Gains and liability gains and losses are smoothed and allocated directly to the Reserve for Funding of Long-Term Benefit Goals over five years. All SDRS Actuarial Investment Losses are allocated immediately to the Reserve.

<sup>2</sup> Future SDRS membership changes will cause minor changes in the Normal Cost Rate even with smoothing of asset and liability gains and losses. The Actuarial Accrued Liability Funded Ratio will gradually increase as the Frozen Unfunded Actuarial Accrued Liability becomes a smaller percentage of the total SDRS liabilities.

<sup>3</sup> Effective June 30, 2010, the Present Value of All Benefits and the Frozen Unfunded Actuarial Accrued Liability were reduced by \$368 million, the reduction in liability resulting from the benefit changes enacted during the 2010 South Dakota Legislative Session. In addition, actuarial assumption and method changes had a \$61 million favorable impact to the System effective June 30, 2009. Total Corrective Actions eliminated the \$416 million increase in the Frozen Unfunded Actuarial Accrued Liability as of June 30, 2009 due to unfavorable investment results.

<sup>4</sup> Member and employer contributions were not sufficient to amortize the Frozen Unfunded Actuarial Accrued Liability.

<sup>5</sup> Member and employer contributions were not sufficient to amortize the Frozen Unfunded Actuarial Accrued Liability as of June 30, 2009. The Corrective Actions taken reduced the SDRS future liability sufficiently to achieve a 30-year funding objective as of June 30, 2010.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **SDRS ACTUARIAL FUNDING REQUIREMENTS AND FUNDED STATUS**

#### **Funding Period**

Exhibits 1-4 illustrate the funding requirements of SDRS as of June 30, 2010 and the adequacy of the statutorily required combined Employer and Member Contribution Rate to SDRS to fund the past and future obligations of the System. The summary of SDRS Market Value of Assets, the Development of the Reserve for Funding of Long-Term Benefit Goals, and the Development of the SDRS Actuarial Value of Assets as of June 30, 2010, are illustrated in Appendices B-E of this report.

The results of the 2010 Actuarial Valuation of SDRS indicate that:

- The System expects to pay future total benefits to all current SDRS active and retired Members with a present value of \$8.680 billion (Exhibit 1).
- The Frozen Unfunded Actuarial Accrued Liability equals \$273 million (Exhibit 2).
- SDRS has accumulated assets to date on an Actuarial Value basis of \$7.120 billion (Appendix E).
- A portion of future Employer and Member Contributions for current active Members will be required to pay future Normal Costs with a present value of \$1,287 million (Exhibit 3). The balance of future Employer and Member Contributions is available to pay System expenses and fund the Frozen Unfunded Actuarial Accrued Liability.

As summarized in Exhibit 4, SDRS is funded by statutorily required Employer and Member Contributions that totaled 12.460% of considered compensation. After paying the Normal Costs and Expenses of the System of 11.502% of considered compensation, a contribution of 0.958% of considered compensation is available to fund the Frozen Unfunded Actuarial Accrued Liability. The 2010 Actuarial Valuation of SDRS confirms that this rate of contribution will fund the Frozen Unfunded Actuarial Accrued Liability over 30 years from 2010.

SDRS is a well-funded retirement system. The volatility in Funding Period resulting from asset and liability gains and losses has been minimized by the methods adopted for development of the Actuarial Value of Assets. With the benefit changes enacted by the 2010 South Dakota Legislature, current member and employer contributions are sufficient to pay the Normal Costs and fund the Frozen Unfunded Actuarial Accrued Liability over 30 years.

#### **Funded Ratio**

The SDRS Funded Ratio is determined in accordance with the requirements of the Governmental Accounting Standards Board Statement No. 25 as described in Appendix G.

The SDRS Funded Ratio as of June 30, 2010 is equal to 96.3% as determined below.

Actuarial Value of Assets (Appendix E)	\$7,119,874,593
Actuarial Accrued Liability (Actuarial Value of Assets Plus Frozen Unfunded Actuarial Accrued Liability (Exhibit 2))	\$7,393,250,948
Funded Ratio (\$7,119,874,593 ÷ \$7,393,250,948)	96.3%

The Funded Ratio increased from 91.8% as of the 2009 Actuarial Valuation to 96.3% for the current year due primarily to the benefit changes effective June 30, 2010. A history of the SDRS Funded Ratios is shown in Exhibit 7.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **GAINS AND LOSSES FOR YEAR ENDED JUNE 30, 2010**

#### **Reserve for Funding of Long-Term Benefit Goals**

SDRS gains and losses are allocated to the Reserve for Funding of Long-Term Benefit Goals. The amounts currently in the Reserve and remaining to be allocated in the next four years are an important indicator of the System's recent cumulative experience. The Reserve for Funding of Long-Term Benefit Goals is a source of funds to provide future benefit improvements or to protect the System against future unfavorable experience. The current negative balance in the Reserve will require continuing favorable experience to eliminate the negative balance prior to providing funds for future benefit improvements or protection against unfavorable experience.

The Reserve for Funding of Long-Term Benefit Goals as of June 30, 2010 changed as follows:

Balance as of June 30, 2009	\$ (2,030,892,306)
Fiscal Year 2010 Experience	101,302,765
Amortization of Prior Gains and Losses	251,152,715
Less Present Value of All Benefits for Improvements Enacted into Law Funded From Reserve	0
Plus Adjustment to Reserve for Corridor Application as of June 30, 2009 and Corresponding Corrective Action Effective July 1, 2010	<u>416,062,688</u>
Balance as of June 30, 2010	\$ (1,262,374,138)

#### **Investment Results for Year**

For the year ended June 30, 2010, the actual investment performance of SDRS was more than the expected 7.75% investment return on the Actuarial Value of Assets by \$492 million as summarized below.

Actual Investment Return for Year Ended June 30, 2010 (Appendix C)	\$1,011 million
Expected Investment Return Based on Actuarial Value of Assets (Appendix E)	<u>- 519 million</u>
Actuarial Investment Gain (Actual less Expected)	\$492 million

The dollar-weighted total investment return based on the Market Value of Assets of the System for the year ended June 30, 2010 was 18.16% (18.73% on a time-weighted basis). The Actuarial Value of Assets was credited with the assumed investment return of 7.75% (or \$519 million) for the year and decreased by the net liability gain of \$14 million for the year.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

### **GAINS AND LOSSES FOR YEAR ENDED JUNE 30, 2010**

#### **Liability Experience for Year**

The SDRS liabilities as of June 30, 2010 were \$14 million lower than expected, or 0.17% of the Present Value of All Benefits. The sources of the \$14 million total experience liability gain were as follows:

<u>Item</u>	<u>Amount of Liability Gain/(Loss)</u>	<u>% of Present Value of All Benefits</u>
Gain/(Loss) due to Compensation Increases	\$ 67 million	0.77%
Gain/(Loss) due to Decrements	(30) million	(0.34)%
Gain/(Loss) due to Rehired and New Members	(15) million	(0.17)%
Miscellaneous Gain/(Loss)	(8) million	(0.09)%
Total Experience Gain/(Loss)	\$ 14 million	0.17%

The remaining SDRS liability experience for the year ended June 30, 2010 included the following:

- The number of active Members increased by 1.1%, Compensation for all Members increased by 2.8%, and average Compensation increased by 1.7%.
- The average age of the active Members increased from 45.8 to 45.9 years and the average Credited Service increased from 11.2 to 11.3 years.
- The number of SDRS Members and Beneficiaries receiving benefits increased by 3.1% and the average benefit paid increased by 2.0%.
- Average Compensation for active Members included in the prior Actuarial Valuation increased by 3.3% compared to an assumed increase of 5.3%.
- Decremental experience was mixed. The experience included:
  - Losses due to fewer terminating members than expected
  - Gains from fewer new retirees than anticipated
  - Unfavorable mortality for actives and retirees
  - Favorable disability experience
  - Losses due to new members
  - Losses due to the service credited to rehired Members who have not previously withdrawn their contributions or who redeposit their contributions or who purchase service.

The net liability gain for the year ended June 30, 2010 of \$14 million is allocated equally to the Reserve for Funding of Long-Term Benefit Goals for the year ended June 30, 2010 and the next four years.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **ACTUARIAL SOUNDNESS**

The conclusions reached in the determination of the funding requirements of SDRS based on the Actuarial Valuation of the System are the most important indicators of the long-term actuarial soundness of SDRS. The soundness is measured by the relationship of the Normal Cost to the total contributions available, the length of the Funding Period (a shorter period being more favorable), the excess of the Market Value of Assets over the Actuarial Value of Assets (the Cushion), the current balance in the Reserve for Funding of Long-Term Benefit Goals, and the net amounts remaining to be allocated in the future.

The current SDRS benefits combined with the present financing and the relatively small amount of Frozen Unfunded Actuarial Accrued Liability result in a well funded System that is providing benefits essentially equal to the resources available.

Investment performance for the year ended June 30, 2010 created a gain, resulting in a Cushion of negative \$623 million, and a balance of negative \$1,262 million in the Reserve for Funding of Long-Term Benefit Goals as of June 30, 2010. Both of these measures have improved substantially as a result of the favorable investment experience during the year ending June 30, 2010.

Since 1995, the SDRS cumulative experience has resulted in:

- Actuarial Investment Gains/(Losses) of \$172 million of which \$(420) million have been allocated to the Reserve and \$592 million will be allocated over the next four years.
- Liability Gains/(Losses), changes in actuarial assumptions, and changes in System provisions that affect anticipated costs of \$(142) million of which \$(103) million have been allocated to the Reserve and \$(39) million will be allocated over the next four years.
- A total allocation to the Reserve to date of \$(523) million due to gains and losses.
- \$1,155 million of benefit improvements funded from the Reserve in prior years.
- Corrective Actions of \$416 million credited to the Reserve.
- A balance in the Reserve as of June 30, 2010 of negative \$1,262 million.
- \$553 million remaining to be allocated to the Reserve in the next four years.

**SOUTH DAKOTA RETIREMENT SYSTEM**  
**2010 ACTUARIAL VALUATION**

**ACTUARIAL SOUNDNESS**

**Allocations to Reserve for Funding of Long-Term Benefit Goals (\$ in millions)**

Year Ended June 30 of:	Actuarial Investment Gain/(Loss)	2006	2007	2008	2009	Recognized as of June 30, 2009	Recognized for FYE 2010	Recognized in Future Years	2011	2012	2013	2014
1995	147					147						
1996	247					247						
1997	508					508						
1998	531					531						
1999	353					353						
2000	215					215						
2001	(464)					(464)						
2002	(580)					(580)						
2003	(142)					(142)						
2004	404					404						
2005	324					324						
2006	371	74	74	74	75	297	74					
2007	992		198	198	199	595	199	198	198			
2008	(1,187)			(1,187)	0	(1,187)	0	0				
2009	(2,039)				(2,039)	(2,039)	0	0				
2010	492					--	98	394	98	98	99	99
<b>Subtotals</b>						<b>(791)</b>	<b>371</b>	<b>592</b>				

Year Ended June 30 of:	Liability Gain/(Loss)	2006	2007	2008	2009	Recognized as of June 30, 2009	Recognized for FYE 2010	Recognized in Future Years	2011	2012	2013	2014
1998	(6)					(6)						
1999	(24)					(24)						
2000	8					8						
2001	(28)					(28)						
2002	7					7						
2003	41					41						
2004	79					79						
2005	(126)					(126)						
2006	26	5	5	5	6	21	5					
2007	(54)		(11)	(11)	(11)	(33)	(10)	(11)	(11)			
2008	(44)			(8)	(9)	(17)	(9)	(18)	(9)	(9)		
2009	(35)				(7)	(7)	(7)	(21)	(7)	(7)	(7)	
2010	14					--	3	11	3	3	3	2
<b>Subtotals</b>						<b>(85)</b>	<b>(18)</b>	<b>(39)</b>				

<b>Grand Total</b>						<b>(876)</b>	<b>353</b>	<b>553</b>				
--------------------	--	--	--	--	--	--------------	------------	------------	--	--	--	--

Total Allocations to Reserve (1995 - 2010)	\$	(523) <sup>(1)</sup>
Less Benefit Improvements Funded by the Reserve		1,155
Plus Adjustment for Corrective Action		416
Reserve Balance	\$	(1,262)

(1) Differs by \$1 million from figure in Appendix D due to rounding.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **ACTUARIAL SOUNDNESS**

SDRS is a consolidated, multiple employer, cost-sharing retirement system that does not attempt to determine separate or unique funding requirements for entities within SDRS. However, the 2010 Actuarial Valuation confirms that the two major Member groups within SDRS with different funding and benefit provisions (Class A and Class B) are generally self-supporting (i.e. – the Employer and Member Contributions are funding the benefits provided under these classifications).

The combination of actuarial assumptions and methods used in the Actuarial Valuation, the actual experience of the System, and the actuarial measures utilized all indicate a continuing sound System.

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

---

**EXHIBIT 1**

**DEVELOPMENT OF SDRS PRESENT VALUE OF ALL BENEFITS AS OF  
JUNE 30, 2010**

Present Value of All Benefits		
Active Members	\$	4,554,467,734
Retirees, Beneficiaries and Terminated Members		<u>4,125,804,303</u>
Total	\$	8,680,272,037

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

---

**EXHIBIT 2**

**DEVELOPMENT OF FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY AS OF  
JUNE 30, 2010**

Frozen Unfunded Actuarial Accrued Liability as of June 30, 2009	\$	608,885,765
Normal Cost for the year ending June 30, 2010		178,719,812
Expected Contributions for year ending June 30, 2010		(192,879,422)
Interest to June 30, 2010		46,650,200
Decrease due to benefit changes		<u>(368,000,000)</u>
Frozen Unfunded Actuarial Accrued Liability as of June 30, 2010	\$	273,376,355

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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**EXHIBIT 3**

**DEVELOPMENT OF NORMAL COST CONTRIBUTION RATE AS OF  
JUNE 30, 2010**

Present Value of All Benefits	\$ 8,680,272,037
Actuarial Value of Assets (Appendix E)	(7,119,874,593)
Frozen Unfunded Actuarial Accrued Liability	<u>(273,376,355)</u>
Present Value of Future Normal Cost Contributions	\$ 1,287,021,089
Present Value of 1% of Future Member Compensation	\$ 118,800,119
Normal Cost Contribution Rate at Start of Period (\$1,287,021,089 ÷ \$118,800,119)	10.833%
Normal Cost Contribution Rate Adjusted for Mid-Period Payment	11.253%

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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**EXHIBIT 4**

**DEVELOPMENT OF ACTUARIAL FUNDING REQUIREMENTS  
AS A PERCENTAGE OF MEMBER COMPENSATION AND FUNDING PERIOD AS OF  
JUNE 30, 2010**

Matching Statutorily Required Employer/Member Contribution Rate	12.460% <sup>1</sup>
Normal Contribution Rate at Mid-Period	11.253%
Expense Allowance	<u>0.249%</u>
Total Funding Requirement Before Amortization of Frozen Unfunded Actuarial Accrued Liability	11.502%
Contribution Rate Available to Amortize Frozen Unfunded Actuarial Accrued Liability as a Level Percent of Member Compensation (12.460% - 11.502%)	0.958% <sup>2</sup>

<sup>1</sup> Class A Employers and Members each statutorily contribute 6% of Compensation. Class B Employers and Members each statutorily contribute 8% or 9% of Compensation. Participating Members also contribute for the Optional Spouse Coverage and Class A Employers contribute 6.2% of Members' Compensation in excess of the Social Security maximum taxable Compensation. The total statutory contributions to SDRS as of July 1, 2010 are 12.460% of considered compensation.

<sup>2</sup> Will amortize Frozen Unfunded Actuarial Accrued Liability over 30 years from 2010.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXHIBIT 5**

#### **SUMMARY OF ACTUARIAL ASSUMPTIONS FOR ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**1. Investment Return**

7.75% per annum, compounded annually, plus pre-funding of Cost-of-Living Adjustment of 2.8% per year, compounded annually.

**2. Retirement Age**

Class B Public Safety Members:

Age	Annual Rate Per 100 Members Eligible to Retire
<50	0
50	10
51	8
52	8
53	8
54	10
55	15
56	20
57	25
58	30
59	35
60	40
61	45
62	100

All Class A Members and Class B Judicial Members:

Age	Annual Rate Per 100 Members Eligible to Retire
55	8
56	8
57	8
58	8
59	8
60	10
61	10
62	20
63	25
64	25
65	50
66	50
67	50
68	50
69	50
70	100

# SOUTH DAKOTA RETIREMENT SYSTEM

## 2010 ACTUARIAL VALUATION

### EXHIBIT 5

#### SUMMARY OF ACTUARIAL ASSUMPTIONS FOR ACTUARIAL VALUATION AS OF JUNE 30, 2010

**3. Compensation Progression  
Sample Rates**

Age	Ratio of Compensation at Age 65 to Compensation at Current Age	Percentage Increase in Year Following Indicated Age
25	8.39	8.13%
30	5.76	6.83
35	4.15	6.63
40	3.07	5.63
45	2.37	4.84
50	1.89	4.51
55	1.52	4.37
60	1.23	4.25
64	1.04	4.15

**4. Mortality and Separation**

**a. Mortality**

**Active Members and  
Non-Disabled Retirees**

1995 Buck Mortality Table. See table for sample values.

**Disabled Retirees**

1983 Railroad Retirement Board Disabled Annuitants Mortality Table. See table below for sample values.

**b. Disablement**

Graduated rates. See table below for sample values.

Annual Rate Per 100 Members					
Age	Mortality		Disabled Mortality	Disablement	
	Male	Female		Male	Female
25	.07	.02	.68	.08	.10
30	.06	.02	1.06	.08	.11
35	.07	.04	1.14	.10	.12
40	.10	.06	1.35	.12	.15
45	.14	.09	2.00	.16	.22
50	.22	.14	3.16	.24	.23
55	.35	.21	3.78	.40	.38
60	.64	.32	4.25	.84	.80
65	1.24	.66	5.12	1.71	1.55

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXHIBIT 5**

#### **SUMMARY OF ACTUARIAL ASSUMPTIONS FOR ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**c Separation.**

<b>Annual Rate Per 100 Members</b>			
<b>Separation</b>			
<b>Age</b>	<b>Class A School Members</b>	<b>All other Class A Members and Class B Judicial Members</b>	<b>Class B Public Safety Members</b>
25	18.20	22.40	16.80
30	13.70	16.40	13.20
35	8.60	12.60	9.60
40	6.78	9.50	7.00
45	5.13	7.70	4.80
50	3.98	6.00	7.25
55	2.30	3.06	2.04

**5. Marital Status**

**a. Percentage Married**

Active Members: 80%  
Retired and Terminated Members: 75%

**b. Age Difference**

Males are assumed to be three years older than females.

**6. Future Social Security  
Increases**

**a. Cost-of-Living Increases**

4.0% per annum.

**b. Wage Base Increases**

5.5% per annum.

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXHIBIT 5**

#### **SUMMARY OF ACTUARIAL ASSUMPTIONS FOR ACTUARIAL VALUATION AS OF JUNE 30, 2010**

- |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7. Interest on Accumulated Contributions</b>               | 4.5% per annum.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8. Provision for Expenses</b>                              | A separate expense factor equal to 2.0% of Member and Employer Contributions is included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>9. Actuarial Cost Method</b>                               | Entry Age Normal Actuarial Cost Method with Frozen Unfunded Actuarial Accrued Liability. Members Compensation was assumed to increase at the rate of inflation for determining the Funding Period for amortizing the Frozen Unfunded Actuarial Accrued Liability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>10. Election of Portable Retirement Option Benefits</b>    | Members are assumed to elect to receive the most valuable of the Portable Retirement Option or the Vested Benefit payable at retirement, at termination of employment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>11. Benefit Commencement for Terminated Vested Members</b> | Terminated Vested Members are assumed to elect benefit commencement three years prior to Normal Retirement Date.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>12. Disabled Members</b>                                   | 70% of those receiving Disability Benefits are also receiving Social Security disability awards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>13. Children Death and Disability Benefit</b>              | Members are assumed to have 2 children between the members' ages of 29 and 48.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>14. Actuarial Value of Assets</b>                          | <p>The prior year's Actuarial Value of Assets is credited each year with the assumed rate of investment return plus non-investment cash flow and SDRS liability gains or losses for the year.</p> <p>The resulting Actuarial Value of Assets is constrained to a range of 80% to 120% of the Market Value of Assets, and if this corridor applies, it will also result in an adjustment to the Reserve for Funding of Long-Term Benefit Goals. Effective June 30, 2007, this adjustment will be encumbered and will also adjust the Present Value of Benefits.</p> <p>The Reserve for Funding of Long-Term Benefit Goals was included in the Actuarial Value of Assets for the years ended June 30, 1995 through June 30, 2003. As of June 30, 2004, the Reserve for Funding of Long-Term Benefit Goals was no longer included in the Actuarial Value of Assets.</p> |

# ***SOUTH DAKOTA RETIREMENT SYSTEM***

## ***2010 ACTUARIAL VALUATION***

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### **EXHIBIT 6**

#### **DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITY FUNDED RATIO AS OF JUNE 30, 2010**

The Actuarial Accrued Liability Funded Ratio is a comparison of the Actuarial Value of Assets to the Actuarial Accrued Liability of the System and is a required disclosure under Governmental Accounting Standards Board Statement No. 25.

The Actuarial Accrued Liability is equal to the Present Value of All Benefits for SDRS active and retired Members less the Present Value of Future Normal Cost Contributions required for future benefits for SDRS Members and paid from future Employer and Member Contributions. The Actuarial Accrued Liability is a measure of accrued System liabilities based on the total past and future benefits expected to be paid to all Members that will not be funded by future Normal Cost contributions. Since future Normal Cost contributions are a function of the actuarial cost method used in determining a system's funding requirements, the Actuarial Accrued Liability is a unique calculation for each system.

Comparing the SDRS Actuarial Accrued Liability Funded Ratio on a historical basis illustrates the funding progress of SDRS and the past ability of the fixed, statutorily required Employer and Member Contributions and overall SDRS experience to fund the Normal Costs of the System and to amortize the Frozen Unfunded Actuarial Accrued Liability. Ideally, the Actuarial Accrued Liability Funded Ratio will increase over time as the Frozen Unfunded Actuarial Accrued Liability decreases or becomes a smaller percentage of the Actuarial Accrued Liability due to growth in the Actuarial Value of Assets and funding of the Actuarial Accrued Liability.

A ratio of less than 100% indicates that the SDRS has not yet accumulated sufficient assets to fully fund the Actuarial Accrued Liability.

This exhibit illustrates that the Actuarial Accrued Liability Funded Ratio as of June 30, 2010 equaled 96.3%.

Exhibit 7 illustrates the history of the Actuarial Accrued Liability Funded Ratio from 1973 to the present date and shows the improvement from an initial Funded Ratio of 39.8% to the current 96.3%.

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

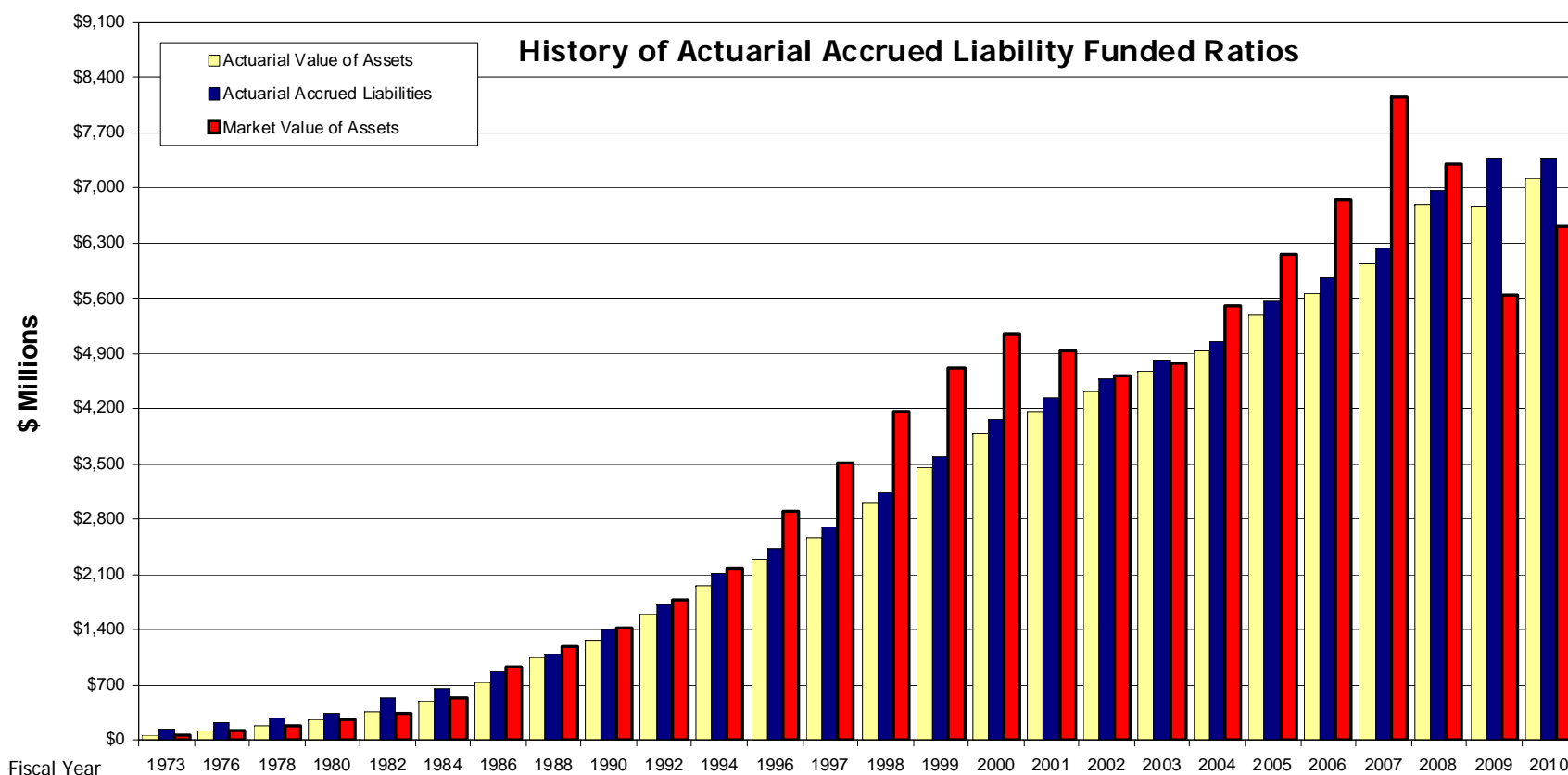
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**EXHIBIT 6**

**DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITY FUNDED RATIO  
AS OF JUNE 30, 2010**

<b>Present Value of All Benefits</b>	
Present Value of All Benefits for Active Members	\$ 4,554,467,734
Present Value of Benefits for Retirees, Beneficiaries and Terminated Members	<u>4,125,804,303</u>
Total Present Value of All Benefits	\$ 8,680,272,037
<b>Present Value of Future Normal Cost Contributions</b>	<u>(1,287,021,089)</u>
<b>Actuarial Accrued Liability</b>	\$ 7,393,250,948
<b>Actuarial Value of Assets</b>	\$ 7,119,874,593
<b>Actuarial Accrued Liability Funded Ratio</b> (\$7,119,874,593 ÷ \$7,393,250,948)	96.3%

## SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION



Market Value Funded Ratio (%)	40	57	68	76	63	81	106	111	101	104	103	120	130	133	132	126	114	101	99	109	111	117	131	105	76	88	
Actuarial Value Funded Ratio (%)	40	57	68	76	67	75	85	97	91	94	92	94	95	96	97	95	96	97	97	98	97	97	97	97	97	92	96
Funding Period (years)	41	19	19	9	28	18	37	6	46	16	38	30	23	22	21	20	20	20	20	20	20	20	20	20	N/A	30	
% Actuarially Required Contribution Made	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	91	100

# ***APPENDICES***



## SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION

### APPENDIX A

#### COMPARISON OF MEMBER DATA CONSIDERED IN ACTUARIAL VALUATIONS AND RESULTS OF ACTUARIAL VALUATIONS FOR 2009 AND 2010

Member Data	2009 Actuarial Valuation	2010 Actuarial Valuation	% Change
<b>Active Members</b>			
Number	38,596	39,014	1.1
Average Age	45.8	45.9	0.2
Average Credited Service	11.2	11.3	0.9
Annual Prior Year's Compensation of Members	\$ 1,450,681,887	\$ 1,491,098,183	2.8
Average Annual Compensation	\$ 37,586	\$ 38,220	1.7
<b>Benefit Recipients</b>			
<b>Retired Members</b>			
Number*	16,762	17,353	3.5
Average Age	71.8	71.8	0.0
Total Annual Benefits	\$ 288,788,959	\$ 304,133,198	5.3
Average Annual Benefits	\$ 17,229	\$ 17,526	1.7
<b>Beneficiaries</b>			
Number*	2,862	2,892	1.0
Total Annual Benefits	\$ 25,733,263	\$ 27,085,064	5.3
Average Annual Benefits	\$ 8,991	\$ 9,366	4.2
<b>Disabled Members</b>			
Number	325	316	(2.8)
Total Annual Benefits	\$ 4,033,929	\$ 3,815,915	(5.4)
Average Annual Benefits	\$ 12,412	\$ 12,076	(2.7)
<b>Total Benefit Recipients</b>			
Number	19,949	20,561	3.1
Total Annual Benefits	\$ 318,556,151	\$ 335,034,177	5.2
Average Annual Benefits	\$ 15,969	\$ 16,295	2.0
<b>Terminated Members</b>			
Number – Vested	7,418	7,382	(0.5)
Number – Non-Vested (Entitled to Accumulated Contributions only)	<u>6,568</u>	<u>6,275</u>	(4.5)
<b>Total Terminated Members</b>	13,986	13,657	(2.4)
<b>Total System Members</b>	72,531	73,232	1.0

\* In addition, there are 48 and 47 Members or Beneficiaries, as of June 30, 2009 and June 30, 2010, respectively, whose benefits are currently suspended, but are entitled to future benefits.

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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## APPENDIX A

**COMPARISON OF MEMBER DATA CONSIDERED IN ACTUARIAL VALUATIONS  
AND RESULTS OF ACTUARIAL VALUATIONS FOR 2009 AND 2010**

<b>Results of Actuarial Valuation</b>	<b>2009 Actuarial Valuation</b>	<b>2010 Actuarial Valuation</b>	<b>% Change</b>
Normal Cost Rate at Mid-Period:			
Without Expense Provision	11.298%	11.253%	(0.4)
With Expense Provision	11.547%	11.502%	(0.4)
Frozen Unfunded Actuarial Accrued Liability	\$ 608,885,765	\$ 273,376,355	(55.1)
Market Value of Assets	\$ 5,648,767,146	\$ 6,496,634,989	15.0
Actuarial Value of Assets	\$ 6,778,520,575	\$ 7,119,874,593	5.0
Actuarial Accrued Liability	\$ 7,387,406,340	\$ 7,393,250,948	0.1
Actuarial Accrued Liability Funded Ratio:			
Based on Actuarial Value of Assets	91.8%	96.3%	4.9
Based on Market Value of Assets	76.5%	87.9%	14.9
Projected Years to Fund Frozen Unfunded Actuarial Accrued Liability	N/A <sup>(1)</sup>	30	N/A

<sup>(1)</sup> Member and employer contributions were not sufficient to amortize the Frozen Unfunded Actuarial Accrued Liability.

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

## APPENDIX B

**SDRS MARKET VALUE OF ASSETS AVAILABLE FOR BENEFITS AS OF  
JUNE 30, 2010**

**Assets**

Investments at current value	\$ 6,563,362,061	
Cash and temporary investments	6,180,991	
Contributions receivable	5,180,109	
Benefits receivable	68,307	
Accounts receivable (unsettled investment sales)	1,457,732	
Investment income receivable	16,661,825	
Due from Brokers – futures	0	
Properties	29,151	
Other assets	17,529	
Invested securities lending collateral	<u>0</u>	
Total Assets		\$ 6,592,957,705

**Liabilities**

Accounts payable and accrued expenses	\$ 2,649,600	
Accounts payable (unsettled investment purchases)	13,804,034	
Securities sold, but not yet purchased	78,940,680	
Securities lending collateral	0	
Due to Brokers	<u>928,402</u>	
Total Liabilities		<u>96,322,716</u>

**Market Value of Assets Available for Benefits** **\$ 6,496,634,989**

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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## APPENDIX C

**CHANGES IN SDRS MARKET VALUE OF ASSETS FOR YEAR ENDED  
JUNE 30, 2010**

Market Value of Assets Available for Benefits as of June 30, 2009	\$	5,648,767,146
-------------------------------------------------------------------	----	---------------

Additions

Contributions	\$	195,261,327
Total Investment Gain Net of Investment Expenses		<u>1,011,107,887</u>
Total Additions	\$	1,206,369,214

Deductions

Benefit Payments	\$	(325,951,211)
Accumulated Contribution Refunds		(29,148,085)
Administrative Expenses		<u>(3,402,075)</u>
Total Deductions	\$	(358,501,371)

Net Increase		<u>847,867,843</u>
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Market Value of Assets Available for Benefits as of June 30, 2010	\$	6,496,634,989
-------------------------------------------------------------------	----	---------------

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

## APPENDIX D

**DEVELOPMENT OF RESERVE FOR FUNDING OF LONG-TERM BENEFIT GOALS**  
**AS OF JUNE 30, 2010**

	For Year Ending June 30, 2010
1. Market Value of Assets at Beginning of Year	\$ 5,648,767,146
2. Actuarial Value of Assets at Beginning of Year	6,778,520,575
3. Non-Investment Cash Flow	(163,240,044) <sup>1</sup>
4. Actual Investment Return Based on Market Value of Assets	1,011,107,887
5. Expected Investment Return based on Net Actuarial Value of Assets	519,009,793
6. Actuarial Investment Gain (4 - 5)	492,098,094
7. Allocation of Actuarial Investment Gains Over Five Years and 100% of Actuarial Investment (Losses):	
20% of \$370,814,067 for year ended June 30, 2006	74,162,814
20% of \$991,670,201 for year ended June 30, 2007	198,334,040
0% of \$(1,186,720,924) for year ended June 30, 2008	0
0% of \$(2,038,794,287) for year ended June 30, 2009	0
20% of \$492,098,094 for year ended June 30, 2010	98,419,619
Total Allocated for the Current Year	\$ 370,916,473
8. Cumulative Amount of Actuarial Investment Gains Remaining to be Allocated in Future Years	\$ 592,012,516
9. Allocation of SDRS Liability Gain or (Loss) Over Five Years:	
20% of \$26,344,985 for year ended June 30, 2006	5,268,997
20% of \$(54,448,179) for year ended June 30, 2007	(10,889,636)
20% of \$(43,779,896) for year ended June 30, 2008	(8,755,979)
20% of \$(34,837,606) for year ended June 30, 2009	(6,967,521)
20% of \$14,415,731 for year ended June 30, 2010	2,883,146
Total Allocated for the Current Year	\$ (18,460,993)
10. Cumulative Amount of SDRS Liability Gain or (Loss) to be Allocated in Future Years	\$ (37,771,573)
11. Reserve for Funding of Long-Term Benefit Goals	
a) Balance at end of Prior Year	\$ (2,030,892,306)
b) Total Allocated for the Current Year (7 + 9)	352,455,480
c) Less Present Value of All Benefits for Improvements Enacted into Laws of June 30, 2010 Funded From Reserve	0
d) Plus Adjustment to Reserve for Corridor Application as of June 30, 2009 and Corresponding Corrective Action Effective July 1, 2010	416,062,688
e) Balance at end of Current Year	\$ (1,262,374,138)

<sup>1</sup> Contributions of \$195,261,327 less benefit payments, refunds, and administrative expenses of \$(358,501,371).

# SOUTH DAKOTA RETIREMENT SYSTEM

## 2010 ACTUARIAL VALUATION

### APPENDIX E

#### DEVELOPMENT OF THE SDRS ACTUARIAL VALUE OF ASSETS AS OF JUNE 30, 2010

1. Actuarial Value of Assets as of June 30, 2009	\$ 6,778,520,575
2. Contributions and Disbursements:	
Contributions	\$ 195,261,327
Benefit Payments and Refunds	(355,099,296)
Administrative Expenses	<u>(3,402,075)</u>
Total	\$ (163,240,044)
3. Expected Investment Return	\$ 519,009,793
4. SDRS Liability Gain/(Loss)	\$ 14,415,731
5. Preliminary Actuarial Value of Assets as of June 30, 2010 (1 + 2 + 3 – 4 )	\$ 7,119,874,593
6. Market Value of Assets as of June 30, 2010	\$ 6,496,634,989
7. Constraining values	
a. 80% of Market Value of Assets	\$ 5,197,307,991
b. 120% of Market Value of Assets	\$ 7,795,961,987
8. Actuarial Value of Assets as of June 30, 2010 Item 6, but not less than (7a) nor more than (7b)	\$ 7,119,874,593

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

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### **APPENDIX F**

#### **SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

**Name of the System**

South Dakota Retirement System (SDRS).

**Effective Date**

SDRS was established effective July 1, 1974. The Supreme and Circuit Court Judicial Retirement System, District County Court and Municipal Court Judges' Retirement Program, South Dakota Teachers' Retirement System, South Dakota Municipal Retirement System, South Dakota Law Enforcement Retirement System, South Dakota Public Employees' Retirement System and South Dakota Board of Regents Retirement System (effective July 1, 1975) were consolidated into SDRS.

**Type of System**

SDRS is a governmental retirement system created by Act of the State of South Dakota. The Retirement System is administered by the Board of Trustees consisting of two state government Members; two teacher Members; a participating municipality Member; a participating county Member; a currently contributing Class B Member other than a justice, judge or magistrate judge; a justice, judge, or magistrate judge; a participating classified employee Member; one head of a principal department or one head of a bureau under the office of executive management; an individual appointed by the Governor; a county commissioner of a participating county; a school district board member; an elected municipal official of a participating municipality; a faculty or administrative Member employed by the Board of Regents; a retiree; and an investment council representative, ex-officio non-voting.

The Board of Trustees appoints an Administrator as the System's chief executive officer.

**Employers Included**

Employers include the State of South Dakota and its departments, bureaus, boards, or commissions, and any of its governmental or political subdivisions or any public corporation of the State of South Dakota that elects to become a participating unit.

**Members**

All of the following permanent full-time employees are included as Members in the System:

- All state employees;
- All teachers;
- All justices, judges, and magistrate judges;
- All law enforcement employees of counties and municipalities that are participating with their Class B employees;
- All general employees of counties and municipalities that are participating with their Class A employees;
- All classified employees of school districts that are participating with their classified employees;
- All employees of the Board of Regents;
- All state law enforcement officers.

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

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### **APPENDIX F**

#### **SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

##### **Members (continued)**

Employees of the Department of Labor hired before July 1, 1980 who elected to remain covered under a former retirement plan, and members of the governing body of any participating county, municipality, or other public subdivision are excluded from SDRS membership.

Membership is immediate upon hire and is subdivided into two classes as follow:

- Class A Member: All Members other than Class B Members.
- Class B Member: Members who are justices, judges and magistrate judges (*Class B Judicial Members*) and state law enforcement officers, municipal police, municipal firefighters, penitentiary correctional staff, county sheriffs, deputy county sheriffs, conservation officers, parole agents, air rescue firefighters, campus security officers, court services officers, certain park rangers and certain jailers (*Class B Public Safety Members*).

Class A Members constitute 93% of SDRS active membership.

##### **Service Considered**

Credited Service is the period of employment for an SDRS Member which is considered in determining the amount of benefits. It includes the following:

- Years and fractional years for which Member Contributions were made (Contributory Service).
- The period of non-contributory service credited prior to July 1, 1974 under the prior retirement systems consolidated under this System.
- For employees of the Board of Regents, the period of service between April 1, 1964 and June 30, 1975 for which purchase was made to Bankers Life and the period of service prior to April 1, 1964, up to a maximum of 20 years, for which purchase was made.
- Periods of non-contributory service credited due to specific legislation since 1974.

Credited Service may be purchased for public employment for which Members are not entitled to retirement benefits, at a cost reflecting an actuarially determined sliding scale based on age, subject to a minimum of 100% of combined Member and Employer Contributions. Credited Service purchased after July 1, 2004, shall not be considered Contributory Service for eligibility purposes. Credited Service is purchased with an after-tax payment unless the Member's Employer elects to permit purchase on a pre-tax basis under Section 414(h) of the Internal Revenue Code.

##### **Compensation**

Compensation is W-2 wages, plus any amount used to purchase a Member's individual retirement plan, plus a Member's contribution to SDRS made on a before-tax basis, plus any amount contributed to a Section 125 cafeteria plan, paid during the period of Credited Service. Compensation does not include lump sum termination pay. Compensation for Members hired after June 30, 1996 is limited as prescribed in Section 401(a)(17) of the Internal Revenue Code.

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

---

### **APPENDIX F**

#### **SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

##### **Final Average Compensation**

Final Average Compensation is the highest average annual Compensation earned by a Member during 12 consecutive calendar quarters of the last 40 such quarters during periods of Credited Service. The Final Average Compensation is limited by statutory provisions that prevent extraordinary increases in Compensation immediately before retirement.

##### **Employer Contributions**

Employer Contributions equal those amounts contributed by Members except for the Additional Contributions noted below.

##### **Member Contributions**

Class A Members: 6% of Compensation

Class B Public Safety Members: 8% of Compensation

Class B Judicial Members: 9% of Compensation

Member Contributions are made on a pre-tax basis as permitted under Section 414(h) of the Internal Revenue Code.

##### **Accumulated Contributions**

Accumulated Contributions are equal to Member Contributions and 85% of Employer Contributions for Members with three or more years of Contributory Service or 50% of Employer Contributions for Members with less than three years of Contributory Service credited with interest on a monthly basis at a rate annually established by the Board of Trustees, that is no greater than 90% of the average 91-day U.S. Treasury Bill rate for the immediately preceding calendar year. Such rate shall have no minimum limitation and shall not be greater than the assumed rate of investment return, which is currently 7.75%.

For Members who terminated prior to July 1, 2010 the percentage of Employer Contributions is 100% with three or more years of Contribution Service or 75% with less than three years of Contributory Service.

##### **Additional Contributions**

Effective July 1, 2002, employers contribute 6.2% of Class A Member's calendar year Compensation in excess of the maximum taxable amount for Social Security for the calendar year. These additional contributions are not included in Accumulated Contributions.

##### **Other Public Benefits**

Eighty percent of the benefits provided as "primary insurance amount *or* primary Social Security" under the Federal Social Security Act.

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

---

### **APPENDIX F**

#### **SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

##### **Cost-of-Living Adjustment (COLA)**

The annual increase in the amount of the SDRS benefits payable on each July 1st is indexed to CPI and based on SDRS funded status:

- If the SDRS market value funded ratio is 100% or more – 3.1% COLA
- If the SDRS market value funded ratio is 80% to 99.9%, index with the CPI
  - 90% to 99.9% funded – 2.1% minimum and 2.8% maximum COLA
  - 80% to 90% funded – 2.1% minimum and 2.4% maximum COLA
- If the SDRS market value funded ratio is less than 80% - 2.1% COLA

All benefits except those depending on the Member's Accumulated Contributions are annually increased by the Cost-of-Living Adjustment.

##### **Normal Retirement Date**

The Normal Retirement Date is age 65 with three years of Contributory Service for Class A and Class B Judicial Members of the System. Normal Retirement Date is age 55 with three years of Contributory Service for Class B Public Safety Members.

##### **Normal Retirement Benefit**

Members are entitled to retire with a benefit commencing the first of the month in which they reach Normal Retirement Date and payable for life, with an automatic 60% surviving spouse's benefit paid for the spouse's lifetime.

**The Class A benefit is the larger of that provided by the following Standard Formula or Alternate Formula:**

##### ***Standard Formula***

###### **Enhanced Benefit**

1.7% times Final Average Compensation times years of Credited Service as a Class A Member before July 1, 2008, **plus**

###### **Base Benefit**

1.55% times Final Average Compensation times years of Credited Service as a Class A Member after July 1, 2008.

**OR**

##### ***Alternate Formula***

###### **Enhanced Benefit**

2.4% times Final Average Compensation times years of Credited Service as a Class A Member before July 1, 2008, **plus**

###### **Base Benefit**

2.25% times Final Average Compensation times years of Credited Service as a Class A Member after July 1, 2008 **less**

80% of Primary Social Security benefit.

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

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### **APPENDIX F**

#### **SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

##### **Normal Retirement Benefit (continued)**

**The Class B benefit for Class B Public Safety Members is:**

**Enhanced Benefit**

2.4% times Final Average Compensation times years of Credited Service as a Class B Public Safety Member before July 1, 2008, **plus**

**Base Benefit**

2.0% times Final Average Compensation times years of Credited Service as a Class B Public Safety Member after July 1, 2008.

**The Class B benefit for Class B Judicial Members is determined by adding the Enhanced and Base Benefit for both the first 15 years of Credited Service and years of Credited Service in excess of 15, as follows:**

***First 15 years of Credited Service***

**Enhanced Benefit**

3.733% times Final Average Compensation times the first 15 years of Credited Service as a Class B Judicial Member before July 1, 2008, **plus**

**Base Benefit**

3.333% times Final Average Compensation times all other such years of Credited Service as a Class B Judicial Member after July 1, 2008.

**PLUS**

***Years of Credited Service in Excess of 15***

**Enhanced Benefit**

2.4% times Final Average Compensation times years of Credited Service as a Class B Judicial Member before July 1, 2008, in excess of 15 years, **plus**

**Base Benefit**

2.0% times Final Average Compensation times all other such years of Credited Service as a Class B Judicial Member after July 1, 2008.

All of the above benefits are paid monthly.

SDRS benefits are limited to the maximum benefit under Section 415 of the Internal Revenue Code, except for the portion of benefits attributable to any after-tax contributions made prior to July 1, 1984.

##### **Delayed Retirement Benefit**

The monthly benefit payable upon retirement after Normal Retirement Date is based on Credited Service and Final Average Compensation to date of actual retirement.

***SOUTH DAKOTA RETIREMENT SYSTEM  
2010 ACTUARIAL VALUATION***

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**APPENDIX F**

**SUMMARY OF PRINCIPAL BENEFIT PROVISIONS  
AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

**Special Early Retirement Date (Rule of 85, Rule of 80 and Rule of 75)**

The Special Early Retirement Date for Class A Members is the date at which a Member's age plus Credited Service total 85, but not less than age 55. The Special Early Retirement Date for Class B Judicial Members is the date at which age plus Credited Service total 80, but not less than age 55. The Special Early Retirement Date for Class B Public Safety Members is the date at which age plus Credited Service total 75, but not less than age 45.

Members are entitled to retire at Special Early Retirement Date with a benefit equal to the Normal Retirement Benefit based on Credited Service and Final Average Compensation to date of retirement, with no reduction for early payment.

**Early Retirement Benefit**

Any Member with at least three years of Contributory Service can retire in the ten years preceding Normal Retirement Date. The Member will be entitled to receive the Normal Retirement Benefit based on Credited Service and Final Average Compensation to date of retirement, reduced by 1/4 of 1% for each full month by which commencement of payments precedes the earlier of the Normal Retirement Date or the Special Early Retirement Date. Benefits commence on the first of the month following retirement (or the date chosen for payment to commence) and 30 days after the application for retirement benefits has been received by SDRS.

**Vested Benefit and Portable Retirement Option**

A terminated Member with at least three years of Contributory Service will be entitled to receive the Normal or Early Retirement Benefit payable at either Normal or Early Retirement based on the Member's Credited Service at the time of termination of employment and increased by the Cost-of-Living Adjustment from the date of termination to the date benefits commence.

In lieu of any monthly lifetime retirement benefits under the System, a terminating Member may receive a lump sum of his Accumulated Contributions under the Portable Retirement Option. Members who are rehired may redeposit their Accumulated Contributions plus interest within two years of rehire to reinstate their Credited Service.

***SOUTH DAKOTA RETIREMENT SYSTEM  
2010 ACTUARIAL VALUATION***

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**APPENDIX F**

**SUMMARY OF PRINCIPAL BENEFIT PROVISIONS  
AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

**Disability Benefit**

A contributing Member, who becomes disabled with at least three years of Contributory Service, or was disabled by accidental means while performing the usual duties of his job, is entitled to an immediate monthly Disability Benefit.

The Disability Benefit is equal to:

- For the first 36 months, 50% of the Member's Final Average Compensation, increased 10% for each eligible child to a maximum of four children. The maximum benefit payable is 100% of such Compensation (increased by the Cost-of-Living Adjustment) reduced by earned income.
- Starting with the 37th month,
  - ◊ if the Member is receiving disability benefits from Social Security, the greater of:
    - 50% of the Final Average Compensation plus 10% for each eligible child to a maximum of 90% less the amount of primary Social Security.
    - 20% of Final Average Compensation increased by the COLA
    - The unreduced accrued retirement benefit
  - ◊ if the Member is not receiving disability benefits from Social Security, the greater of:
    - 20% of Final Average Compensation increased by the COLA
    - The unreduced accrued retirement benefit

The maximum benefit is 100% of Final Average Compensation (increased by the Cost-of-Living Adjustment) reduced by earned income and primary Social Security.

The above benefits are payable monthly.

At age 65 (or when there are no eligible children, if later), but not before five years of disability, the benefit payable is converted to the Normal Retirement Benefit based on Compensation increased by the Cost-of-Living Adjustment for the period between the date of disability and Normal Retirement Date (Projected Compensation), and Credited Service as if employment had continued uninterrupted to Normal Retirement Date (Projected Credited Service).

## ***SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION***

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### **APPENDIX F SUMMARY OF PRINCIPAL BENEFIT PROVISIONS AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

#### **Survivor Benefits**

##### **Pre-Normal Retirement Age and Post-Disability Deaths**

If an active Member with at least one year of Contributory Service, or a Member receiving a disability benefit commencing after July 1, 1974 dies, the surviving spouse having the care of eligible dependent children will receive an immediate benefit equal to 40% of the Member's Final Average Compensation, increased 10% for each child to a maximum of six children. If the surviving eligible dependent children are under the care of a guardian, the benefit payable will be 20% of the Member's Final Average Compensation for each child (to a maximum of five children).

The above survivor benefits are all payable monthly and reduced by 75% of primary Social Security Benefit.

If no benefit is payable as defined above or payment has ceased, and the Member's Accumulated Contributions have not been withdrawn, the spouse is entitled to receive at the spouse's age 65 a benefit equal to 60% of the Normal Retirement Benefit that would have been payable to the deceased Member at Normal Retirement Date based on Projected Credited Service and Projected Compensation, and further increased by the Cost-of-Living Adjustment for any time between Normal Retirement Date and payment commencement date.

##### **Post-Normal Retirement Age and Post-Retirement Deaths**

Upon the death of a retiree or any Member at or beyond Normal Retirement Age, the surviving spouse is entitled to receive 60% of the monthly retirement benefit the Member was receiving or was eligible to receive.

##### **Terminated Member**

If a terminated Member dies prior to benefit commencement, the Accumulated Contributions are refunded to the designated beneficiary, children or estate in a lump sum.

##### **Optional Spouse Coverage**

Prior to June 30, 2010, a Member could have elected to provide an additional benefit payable to the surviving spouse within 365 days after becoming a Member, within 90 days following attainment of age 35, or within 90 days after the first anniversary of marriage. This optional coverage may continue until the Member's spouse attains age 65, the death or disability of the Member, the death of the Member's spouse, termination of the Member's marriage to his spouse, or the Member's termination of employment.

The elected additional monthly benefit is equal to 40% of the Member's Final Average Compensation multiplied by the Cost-of-Living Adjustment for each full year between the date of death or disability of the Member to payment commencement. Such benefit is paid upon the Member's death from the time there are no eligible dependent children until the spouse dies or attains age 65.

The cost of this protection is paid by the Member through an additional contribution 1.2% of Compensation, which will not be matched by the Employer and is not refundable.

***SOUTH DAKOTA RETIREMENT SYSTEM  
2010 ACTUARIAL VALUATION***

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**APPENDIX F**

**SUMMARY OF PRINCIPAL BENEFIT PROVISIONS  
AS AMENDED THROUGH THE 2010 LEGISLATIVE SESSION**

**Accumulated Contributions as Minimum Benefits**

If the aggregate benefit payments received by a Member and the Member's beneficiary (excluding benefits received under the Optional Spouse Coverage benefit provisions) do not equal the sum of the Accumulated Contributions then the difference will be paid to the Member's designated beneficiary, children or estate in a lump sum.

**Optional Forms of Retirement Payments**

The monthly retirement benefits may be modified to an optional form of payment which is the actuarial equivalent of the benefit due under the System. A Social Security level income payment option is available for Members who retire before age 62.

**Administrative Expenses**

Administrative expenses are paid from the System's assets in an amount not to exceed 3% of the annual Member and Employer Contributions received by the System.

**Retired Members**

Retired Members' and terminated vested Members' benefits have been increased to reflect the benefit formula currently in effect for active Members.

***SOUTH DAKOTA RETIREMENT SYSTEM  
2010 ACTUARIAL VALUATION***

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**APPENDIX G**

**GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT No. 25**

The Governmental Accounting Standards Board (GASB) has issued Statement No. 25, "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans." This Statement supersedes GASB Statement No. 5 and has been implemented by SDRS effective with the fiscal year ended June 30, 1997.

This Statement requires the measurement and disclosure of the Annual Required Contributions of the Employers (ARC) for SDRS and the determination of the Funded Ratio of SDRS considering the Actuarial Value of Assets and the Actuarial Accrued Liability, both in accordance with the parameters of Statement No. 25.

The South Dakota Retirement System is a cost sharing multiple-employer defined benefit retirement plan as defined in the GASB statement. As such, the GASB Statement requires that the ARC be computed for the Plan, not individually for each Employer, since the costs and risks of SDRS are shared by all participating Employers and are not attributed individually to the Employers. In addition, SDRS is funded by statutorily required fixed Employer and Member Contributions. The Actuarial Valuation of SDRS includes all Members and considers the contractually required contributions of each Employer based on its employees and the mix of employees participating in Class A or Class B benefits.

The actuarial assumptions and methods for the GASB Statement No. 25 calculations are the same as those used for the Actuarial Valuation of SDRS that confirm the funding requirement of the System, and they fully meet the parameters of GASB Statement No. 25. They are summarized in Exhibit 5.

The actuarially determined information required in accordance with the GASB statements was determined by the Actuarial Valuation of SDRS as of June 30, 2010 as follows:

## SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION

### APPENDIX G

#### GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT NO. 25

**A. COMPARISON OF CONTRACTUAL EMPLOYER CONTRIBUTION RATE TO ANNUAL REQUIRED CONTRIBUTIONS OF THE EMPLOYERS AS OF JULY 1, 2010**

	<u>% of Pay</u>
1. Total Contractual Member and Employer Contribution Rates	12.460% <sup>1</sup>
2. Less Contractual Member Contribution Rate	<u>(6.246%)</u>
3. Total Contractual Employer Contribution Rate [(1) - (2)]	6.214%
4. Less Employer Normal Cost Rate (Total Normal Cost Rate of 11.253% less Contractual Member Contribution Rate of 6.246%)	(5.007%)
5. Less Provision for Expenses	<u>(0.249%)</u>
6. Total Contractual Employer Contribution Rate Available to Amortize Frozen Unfunded Actuarial Accrued Liability [(3) - (4) - (5)]	0.958% <sup>2</sup>

The contractually required Employer contributions to SDRS equal the requirements for the Annual Required Contributions of the Employers since they are sufficient to pay the Employer Normal Cost, System Expenses, and amortize the Frozen Unfunded Actuarial Accrued Liability over a period of 30 years or less. The ARC for each SDRS participating Employer is equal to the contractually required Employer contributions to SDRS.

<sup>1</sup> Class A Employers and Members each contractually contribute 6% of pay. Class B Employers and Members each contractually contribute 8% or 9% of pay. Participating Members also contribute for Optional Spouse Coverage and Class A Employers contribute 6.2% of Members' pay in excess of the Social Security maximum taxable pay. The total contractual contributions to SDRS as of July 1, 2010 are 12.460% of considered compensation.

<sup>2</sup> A contribution of 0.958% of considered compensation is sufficient to amortize the Frozen Unfunded Actuarial Accrued Liability over 30 years or less from July 1, 2010.

**B. ACTUARIAL ACCRUED LIABILITY FUNDED RATIO AS OF JUNE 30, 2010**

1. Actuarial Value of Assets	\$ 7,119,874,593
2. Total Actuarial Accrued Liability	7,393,250,948
3. Unfunded Actuarial Accrued Liability [(2) - (1)]	273,376,355
4. Funded Ratio [(1) / (2)]	96.3%
5. Member Compensation (Prior Year)	\$ 1,491,098,183
6. Unfunded Actuarial Accrued Liability as a Percentage of Member Prior Year Compensation [(3) / (5)]	18.3%

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

**DISTRIBUTION OF NUMBER AND AVERAGE COMPENSATION OF ACTIVE MEMBERS AS OF JUNE 30, 2010<sup>(1)</sup>**

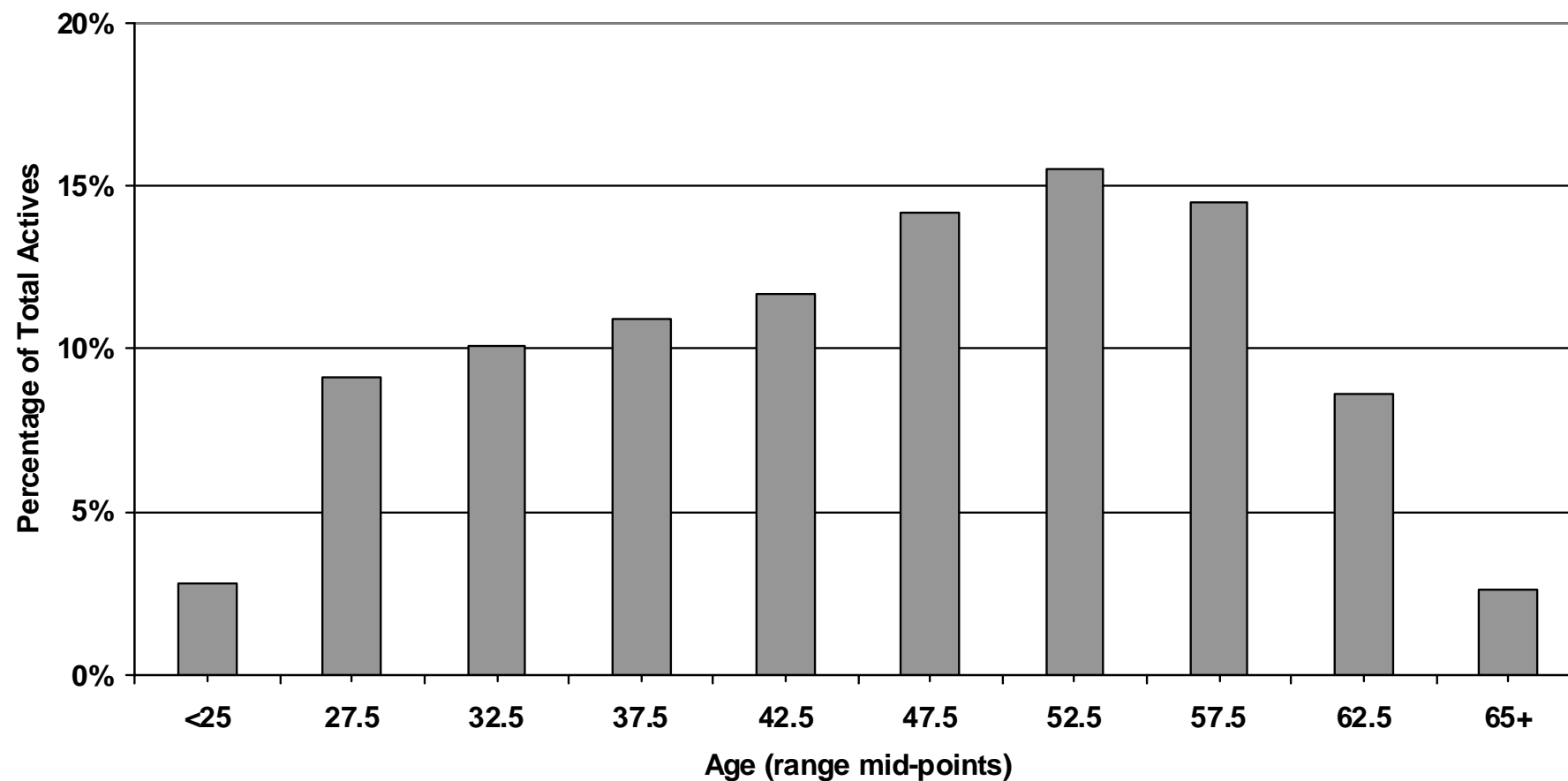
Age	Service	4 and under	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and over	Total
<b>24 and under</b>	Number	1,080	11								1,091
	Avg Compensation	\$ 27,462	\$ 27,608								\$ 27,464
<b>25-29</b>	Number	2,805	757	7							3,569
	Avg Compensation	\$ 31,655	\$ 36,145	\$ 29,822							\$ 32,604
<b>30-34</b>	Number	1,773	1,629	525	4						3,931
	Avg Compensation	\$ 33,331	\$ 38,807	\$ 39,474	\$ 33,318						\$ 36,420
<b>35-39</b>	Number	1,428	1,102	1,284	416	5					4,235
	Avg Compensation	\$ 33,426	\$ 39,322	\$ 42,907	\$ 45,692	\$ 35,944					\$ 39,043
<b>40-44</b>	Number	1,288	973	896	1,005	397	8				4,567
	Avg Compensation	\$ 31,660	\$ 38,546	\$ 42,718	\$ 47,768	\$ 46,728	\$ 40,626				\$ 40,167
<b>45-49</b>	Number	1,370	956	912	785	1,033	483	17			5,556
	Avg Compensation	\$ 31,031	\$ 37,036	\$ 39,209	\$ 45,555	\$ 49,109	\$ 50,157	\$ 49,958			\$ 40,541
<b>50-54</b>	Number	1,197	931	942	824	786	872	498	13		6,063
	Avg Compensation	\$ 31,439	\$ 35,793	\$ 37,735	\$ 42,912	\$ 48,260	\$ 50,385	\$ 48,875	\$ 36,414		\$ 40,993
<b>55-59</b>	Number	1,131	770	731	713	782	613	656	249	4	5,649
	Avg Compensation	\$ 34,019	\$ 35,100	\$ 37,278	\$ 40,327	\$ 45,107	\$ 49,506	\$ 51,951	\$ 48,491	\$ 53,247	\$ 41,334
<b>60-64</b>	Number	698	579	435	438	469	289	187	184	60	3,339
	Avg Compensation	\$ 32,842	\$ 36,664	\$ 35,402	\$ 38,929	\$ 43,683	\$ 47,696	\$ 52,760	\$ 59,207	\$ 45,701	\$ 40,245
<b>65 and over</b>	Number	286	220	155	109	98	54	48	18	26	1,014
	Avg Compensation	\$ 26,334	\$ 33,030	\$ 31,503	\$ 40,336	\$ 37,371	\$ 39,321	\$ 50,457	\$ 74,975	\$ 57,291	\$ 34,640
<b>Total</b>	Number	13,056	7,928	5,887	4,294	3,570	2,319	1,406	464	90	39,014
	Avg Compensation	\$ 31,796	\$ 37,332	\$ 39,602	\$ 43,891	\$ 46,727	\$ 49,479	\$ 50,894	\$ 53,429	\$ 49,385	\$ 38,834

<sup>(1)</sup> Compensation is annualized for members with less than four consecutive quarters of compensation.

***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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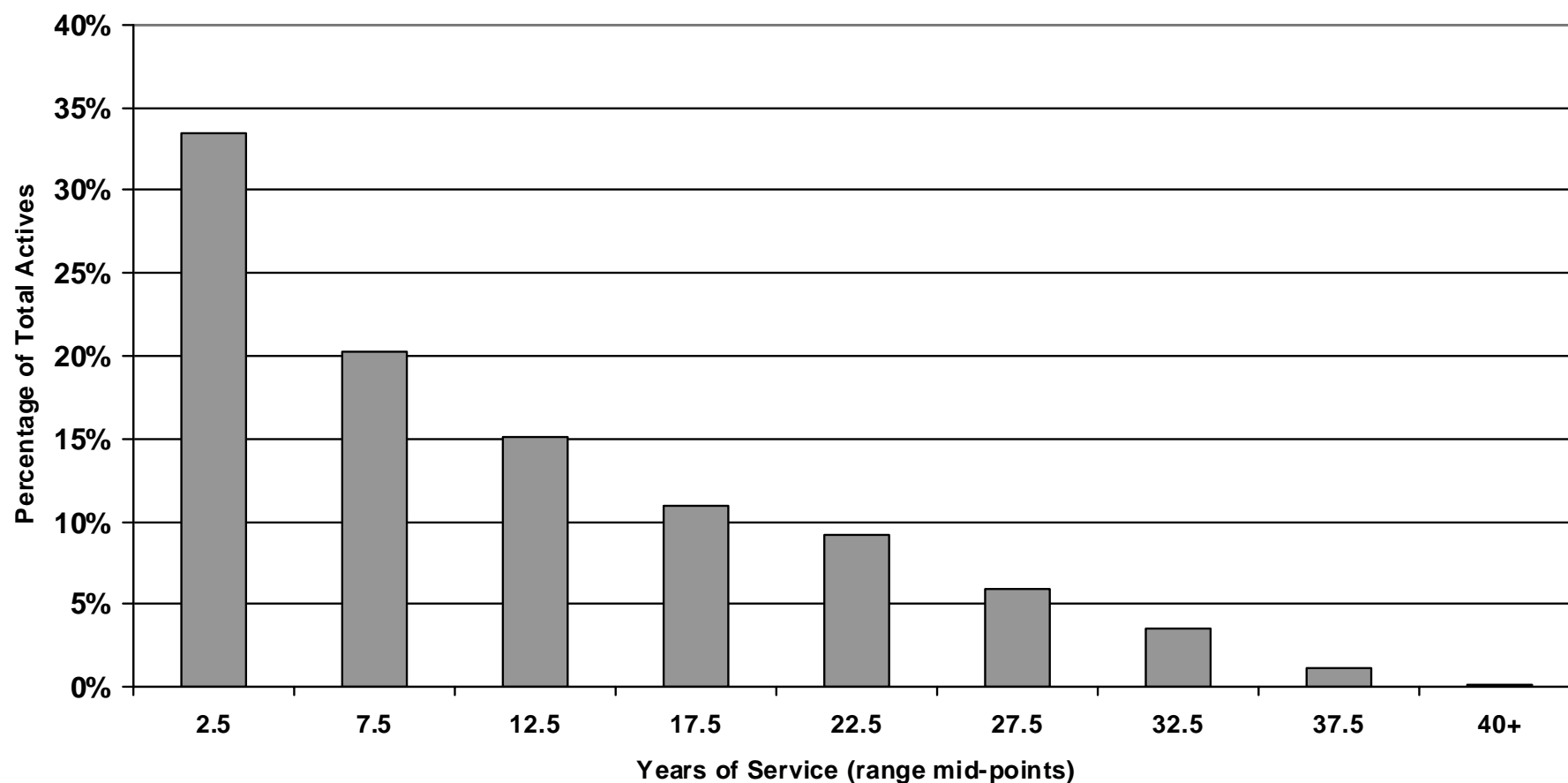
**Distribution of Active Members by Age**  
**As of June 30, 2010**



***SOUTH DAKOTA RETIREMENT SYSTEM***  
***2010 ACTUARIAL VALUATION***

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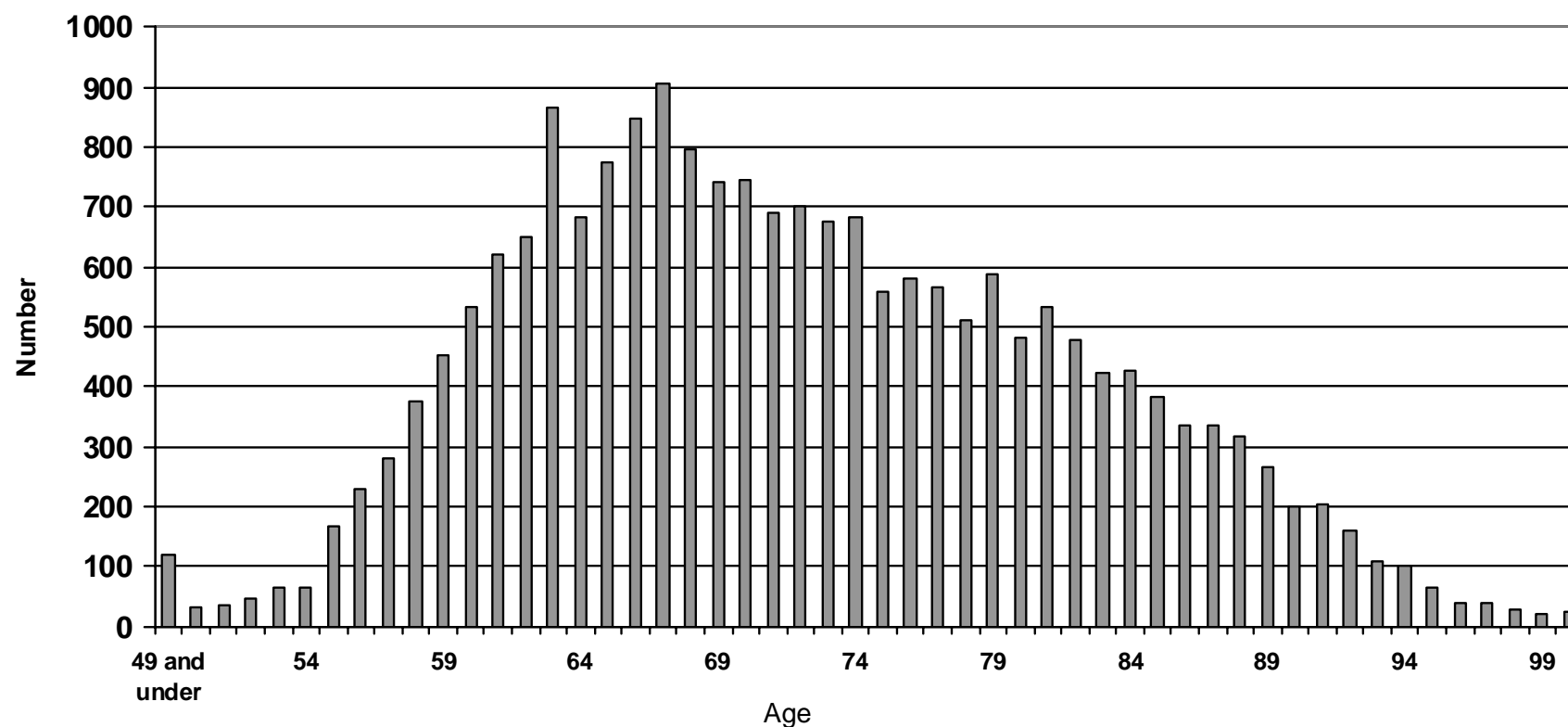
**Distribution of Active Members by Credited Service**  
**As of June 30, 2010**



***SOUTH DAKOTA RETIREMENT SYSTEM***  
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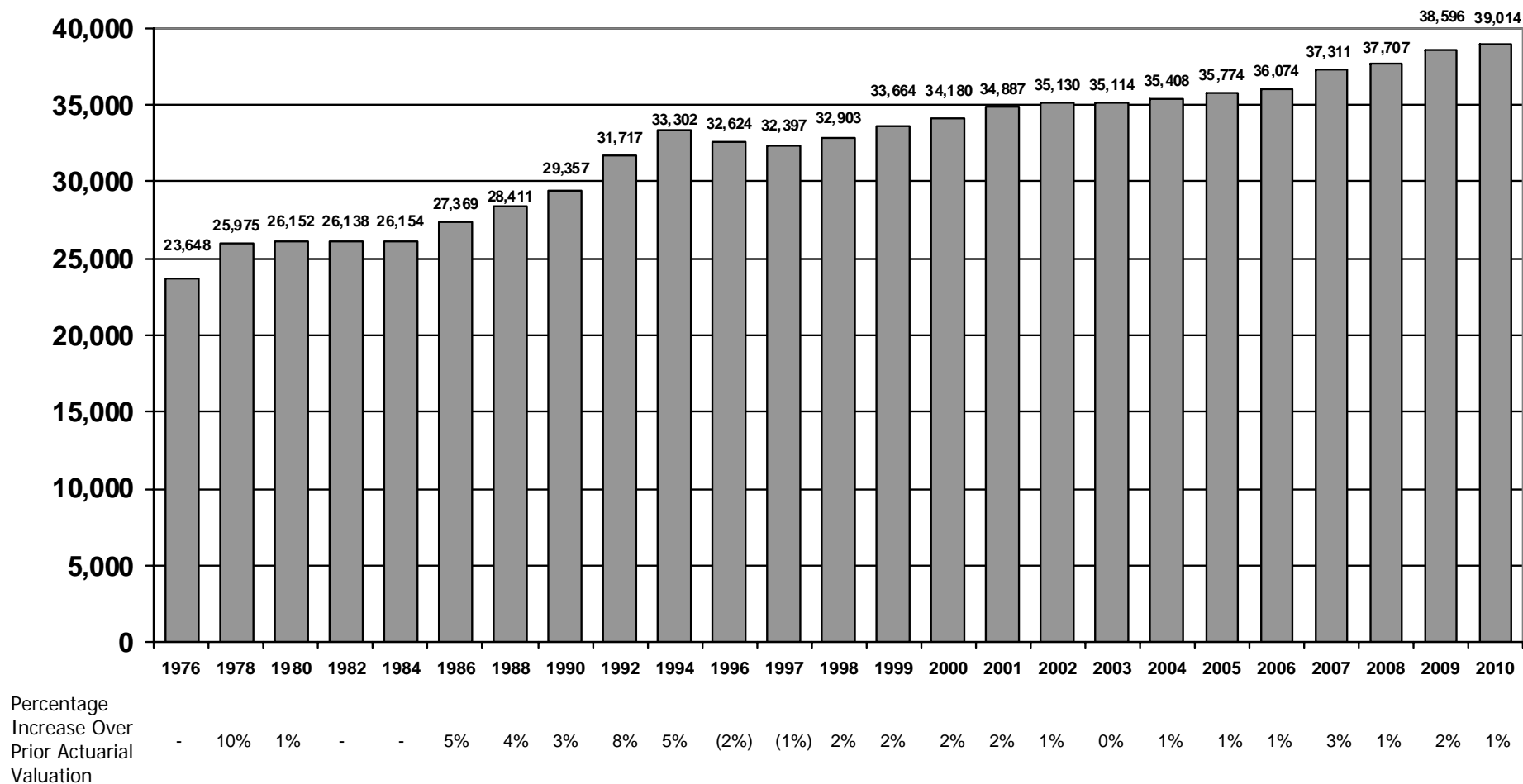
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**Distribution of Retirees, Beneficiaries and Disabled Members  
by Age as of June 30, 2010**



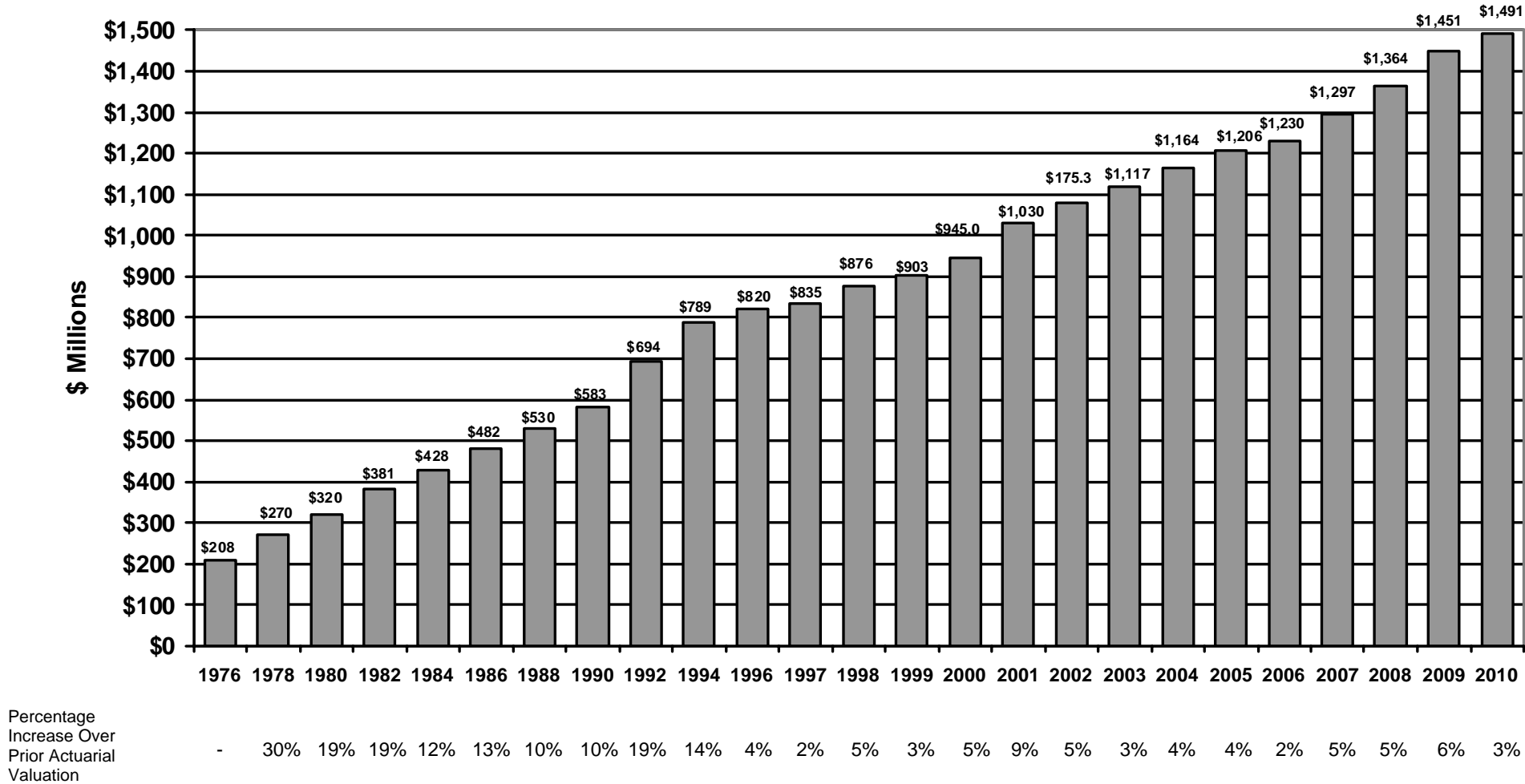
## SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION

### History of Active Membership



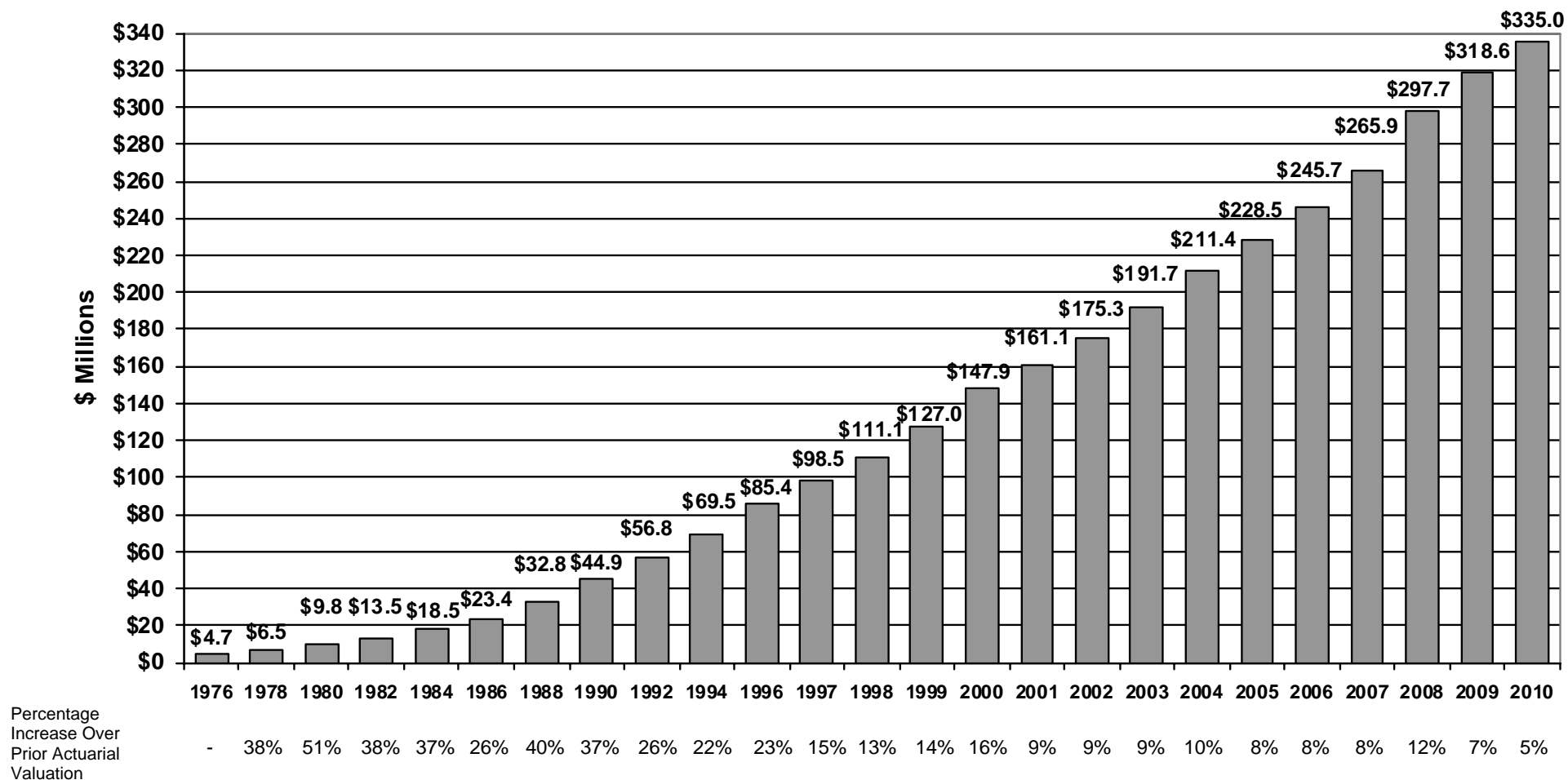
***SOUTH DAKOTA RETIREMENT SYSTEM  
2010 ACTUARIAL VALUATION***

**History of Member Compensation**



## SOUTH DAKOTA RETIREMENT SYSTEM 2010 ACTUARIAL VALUATION

### History of Benefits to Retirees, Beneficiaries, and Disabled Members



# SOUTH DAKOTA RETIREMENT SYSTEM

## 2010 ACTUARIAL VALUATION

### History of Reserve for Funding of Long-Term Benefit Goals (\$ in millions)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<i>Beginning Balance</i>	\$ —	\$ 29	\$ 108	\$ 252	\$ 333	\$ 411	\$ 535	\$ 353	\$ (29)	\$ (57)	\$ 88	\$ 228	\$ 453	\$ 865	\$ (283)	\$ (2,031)				
<i>Benefits Improvements</i>																				
<i>Funded</i>			\$ (101)	\$ (243)	\$ (243)	\$ (213)	—	—	—	—	—	—	—	\$ (355)	—	\$ 416 <sup>(1)</sup>				
<i>Investment Gain(Loss)</i>																				
<i>Year Ended:</i>																				
June 30, 1995	\$ 29	\$ 29	\$ 29	\$ 30	\$ 30															
June 30, 1996		\$ 50	\$ 50	\$ 48	\$ 49	\$ 50														
June 30, 1997			\$ 86	\$ 86	\$ 86	\$ 85	\$ 85													
June 30, 1998				\$ 92	\$ 92	\$ 93	\$ 93	\$ 92												
June 30, 1999					\$ 70	\$ 70	\$ 71	\$ 71	\$ 71											
June 30, 2000						\$ 43	\$ 43	\$ 43	\$ 43	\$ 43										
June 30, 2001							\$ (464)													
June 30, 2002								\$ (580)												
June 30, 2003									\$ (142)											
June 30, 2004										\$ 81	\$ 81	\$ 80	\$ 81	\$ 81						
June 30, 2005											\$ 65	\$ 65	\$ 65	\$ 65	\$ 64					
June 30, 2006												\$ 74	\$ 74	\$ 74	\$ 75	\$ 74				
June 30, 2007												\$ 198	\$ 198	\$ 198	\$ 199	\$ 199	\$ 198			
June 30, 2008													\$ (1,187)	\$ (1,187)						
June 30, 2009															\$ (2,039)					
June 30, 2010																\$ 98	\$ 98	\$ 98	\$ 99	\$ 99
<i>Actuarial Value Adjustment</i>			\$ 80	\$ 69																
<i>Liability Gain(Loss)</i>																				
<i>Year Ended:</i>																				
June 30, 1998				\$ (1)	\$ (1)	\$ (1)	\$ (1)	\$ (2)												
June 30, 1999					\$ (5)	\$ (5)	\$ (5)	\$ (4)	\$ (5)											
June 30, 2000						\$ 2	\$ 2	\$ 1	\$ 2	\$ 1										
June 30, 2001							\$ (6)	\$ (5)	\$ (6)	\$ (5)	\$ (6)									
June 30, 2002								\$ 2	\$ 1	\$ 1	\$ 1	\$ 2								
June 30, 2003									\$ 8	\$ 8	\$ 8	\$ 8	\$ 9							
June 30, 2004										\$ 16	\$ 16	\$ 16	\$ 16	\$ 15						
June 30, 2005											\$ (25)	\$ (25)	\$ (25)	\$ (25)	\$ (26)					
June 30, 2006												\$ 5	\$ 5	\$ 5	\$ 6	\$ 5				
June 30, 2007													\$ (11)	\$ (11)	\$ (11)	\$ (10)	\$ (11)			
June 30, 2008														\$ (8)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ (7)	
June 30, 2009															\$ (7)	\$ (7)	\$ (7)	\$ (7)	\$ (7)	
June 30, 2010																\$ 3	\$ 3	\$ 3	\$ 3	\$ 2
<i>Net Gain (Loss)</i>	\$ 29	\$ 79	\$ 245	\$ 324	\$ 321	\$ 337	\$ (182)	\$ (382)	\$ (28)	\$ 145	\$ 140	\$ 225	\$ 412	\$ (793)	\$ (1,748)	\$ 353	\$ 272	\$ 85	\$ 95	\$ 101
<i>Ending Balance on June 30</i>	\$ 29	\$ 108	\$ 252	\$ 333	\$ 411	\$ 535	\$ 353	\$ (29)	\$ (57)	\$ 88	\$ 228	\$ 453	\$ 865	\$ (283)	\$ (2,031)	\$ (1,262)				

(1) Corrective Action Adjustment