Public Employees' Retirement System of the State of Montana

Actuarial Valuation as of June 30, 2010

Produced by Cheiron

October 2010

CHEIRON Classic Values, Innovative Advice

Table of Contents

October 5, 2010

Public Employees' Retirement Board
100 North Park, Suite 200
Helena, Montana 59620

Dear Members of the Board:

At your request, we have conducted the annual actuarial valuation of the Public Employees' Retirement System as of June 30, 2010. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

This report contains information on System assets, as well as analyses which combine asset and liability performance and projections. The report also discloses employer contribution levels, and required disclosures under the Governmental Accounting Standards Board Statement No. 25.

Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief. The results of this report are only applicable for Fiscal Year ending 2010 and rely on future System experience conforming to the underlying assumptions. To the extent that actual System experience deviates from the underlying assumptions, the results would vary accordingly.

We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board, and that as Members of the American Academy of Actuaries, we meet the Qualification Standards to render the opinions contained herein.

Sincerely,
Cheiron

Stephen T. McElhaney, FSA
Consulting Actuary

Margaret Tempkin, FSA
Consulting Actuary

1750 Tysons Boulevard, Suite 1100, McLean, VA 22102 Tel: 703.893.1456 Fax: 703.893.2006 www.cheiron.us

FOREWORD

Cheiron has performed the actuarial valuation of the Public Employees' Retirement System as of June 30, 2010. The purpose of this report is to:

1) **Measure and disclose**, as of the valuation date, the financial condition of the System;

2) **Indicate trends** in the financial progress of the System;

3) **Determine the sufficiency of the statutory contribution rate** paid by the employers for Fiscal Year 2010; and

4) **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes System assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of the System's investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary containing our findings and disclosing important trends experienced by the System in recent years.

Section II contains details on various asset measures, together with pertinent performance measurements.

Section III shows similar information on System liabilities, measured for actuarial, accounting, and government reporting purposes.

Section IV develops the employer contribution rate determined using actuarial techniques.

Section V includes the required disclosures under GASB Statement number 25.

The appendices to this report contain a summary of the System's membership at the valuation date, a summary of the major provisions of the System, and the actuarial methods and assumptions used in the valuations.

In preparing our report, we relied without audit, on information (some oral and some written) supplied by the staff of the Public Employee Retirement Administration. This information includes, but is not limited to, plan provisions, employee data, and financial information.

The actuarial assumptions reflect our understanding of the likely future experience of the System and the assumptions as a whole represent our best estimate for the future experience of the System. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the System could vary from our results.

Finally, in preparing this report, we have conformed to generally accepted actuarial principles and practices which are consistent with the Code of Professional Conduct, and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board.

SECTION I
BOARD SUMMARY

General Comments

This is the second valuation of the Public Employees' Retirement System performed by Cheiron. All results shown for valuations prior to June 30, 2009 were derived from reports prepared by the prior actuary.

As of June 30, 2009 valuation the statutory contribution rates were not sufficient to amortize the unfunded actuarial accrued liability. As of June 30, 2010 the statutory contribution rates are again not sufficient to amortize the unfunded actuarial accrued liability. During the year ended June 30, 2010, the System's assets gained 12.91% on a market value basis. However, due to the System's asset-smoothing technique which recognizes only a portion of the gains and losses, the return on the actuarial asset value was a negative 1.18%. This return was below the assumed rate of return of 8.0% and resulted in an actuarial loss on investments of $364 million.

The System also experienced an actuarial loss on System liabilities resulting from salary increases different than assumed and members retiring, terminating, becoming disabled and dying at rates different from the actuarial assumptions. The loss added $10 million to the actuarial liability. This type of activity is normal in the course of System experience. The System will experience actuarial gains and losses over time because we cannot predict exactly how people will behave. When a plan experiences alternating gains and losses that are small compared to the total actuarial liability, then the plan's actuarial assumptions are reasonable.

As of the June 30, 2010 actuarial valuation, the System's unfunded actuarial liability was $1,352 million. This is an increase from last year's unfunded actuarial liability of $791 million. The funded ratio decreased from 84% at the prior valuation to 74% at June 30, 2010.

Montana Code Annotated (MCA) 19-2-407 requires an analysis of how market performance is affecting the actuarial funding of the Retirement System. The market value at June 30, 2010 was $574 million less than actuarial value. If market value were used rather than actuarial value, the funded ratio on the valuation date would be 63%, and the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability.

The valuation also includes calculations related to the Plan Choice Rate (PCR). The PCR is the percent of the employer contribution allocated to the Defined Benefit Retirement Plan for members who choose the Defined Contribution Retirement Plan or the Optional Retirement Plan. The calculations show that the amortization of the PCR UAL is 6.4 years, which is within the acceptable range.

Since the previous valuation an experience study was performed and several of the actuarial assumptions were changed. A description of the changes in assumptions appears within Appendix B of this report. The following table compares the results at June 30, 2010 using the previous and the revised assumptions.

SECTION I
BOARD SUMMARY

Table I-1
Montana Public Employees' Retirement System
Summary of Assumption Changes

	Previous Assumptions	New Assumptions
Valuation as of:	**June 30, 2010**	**June 30, 2010**
Actuarial Accrued Liability (AL)	$ 5,085,275,799	$ 5,241,818,794
Actuarial Value of Assets (AVA)	3,889,890,145	3,889,890,145
Unfunded AL	$ 1,195,385,654	$ 1,351,928,649
Funded ratio	76.49%	74.21%
Amortization period for statutory funding rate	Does not amortize	Does not amortize
30-year Level Funding Rate	18.42%	19.08%
Shortfall (surplus) from statutory rate	4.35%	5.01%

SECTION I
BOARD SUMMARY

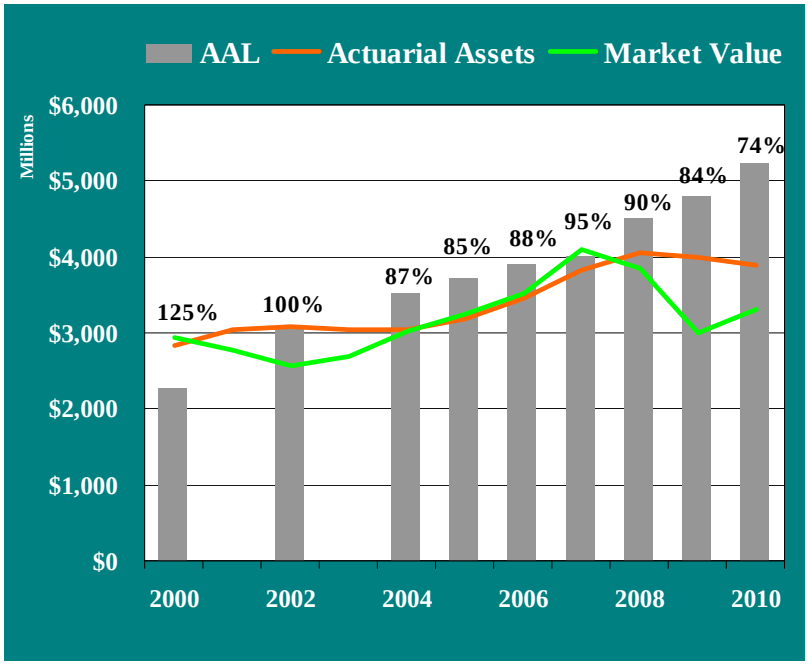
Trends

Assets and Liabilities

The market value of assets (MVA) increased over last year, gaining 12.91% from the value at the prior valuation. The determination of the System's actuarial value of assets reflects only a portion of the amount by which the return was below the assumed rate of 8%.

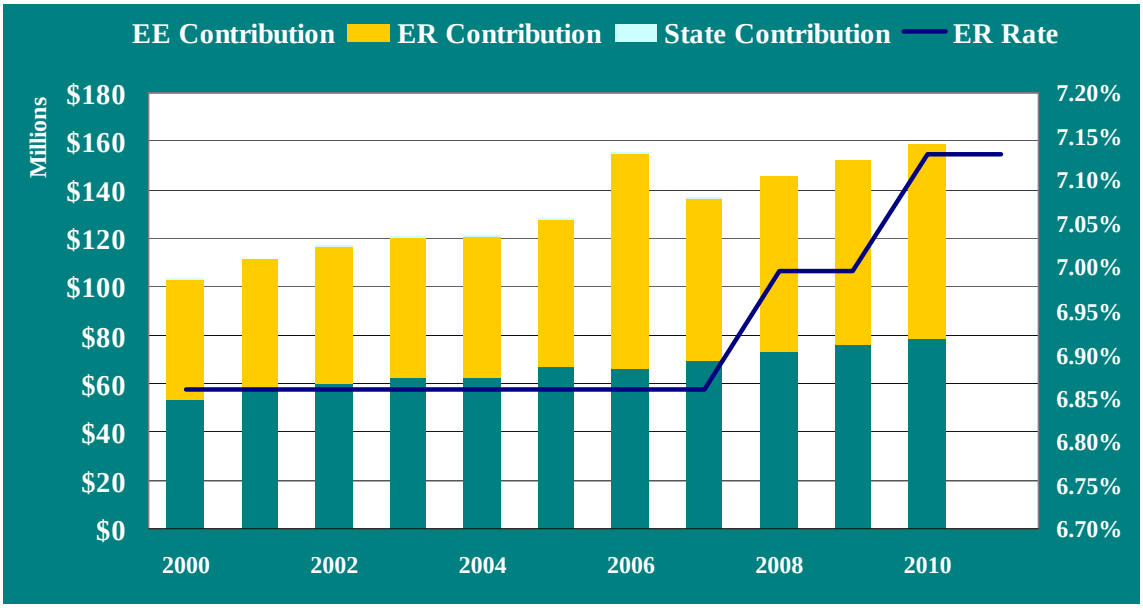
Over the period July 1, 2005 to June 30, 2010 the System's assets returned approximately 5.5% per year measured at actuarial value, compared to a valuation assumption of 8% per year.

For funding purposes, the target amount is represented by the top of the gray bar. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.



SECTION I
BOARD SUMMARY

Contribution Rates



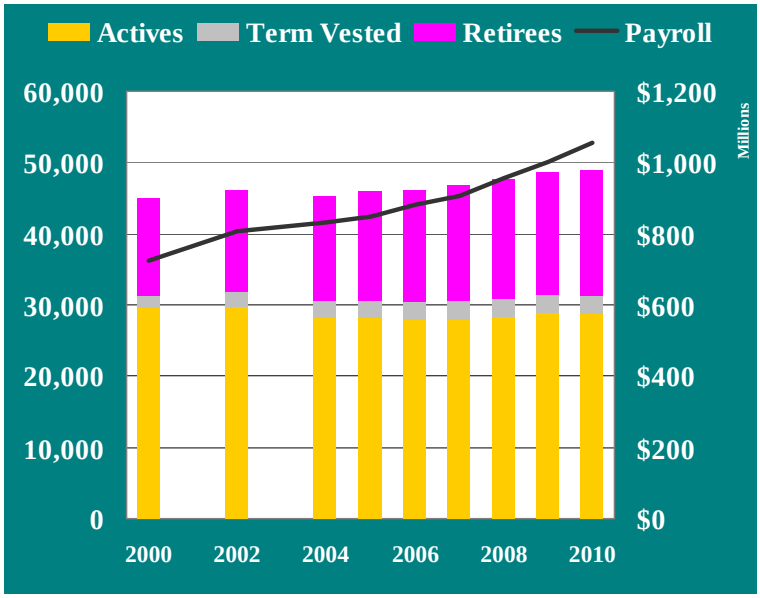
The stacked bars in this graph show the contributions made by members, employers and the State (left hand scale). The black line shows the employer contribution rate as a percent of payroll (right hand scale).

The employer and member contribution rates are set by State law. The actuarial valuation determines the extent to which the statutory contributions will meet the requirements of funding the System.

Participant Trends

The bars show the number of participants in each category and should be read using the left-hand scale. As with any maturing fund, this System continues to show growth in the number of retired members. The active-to-inactive ratio has decreased from 1.9 actives for each inactive in 2000 to 1.5 actives for each inactive today.

The black line shows the covered payroll in the System and is read using the right-hand scale.



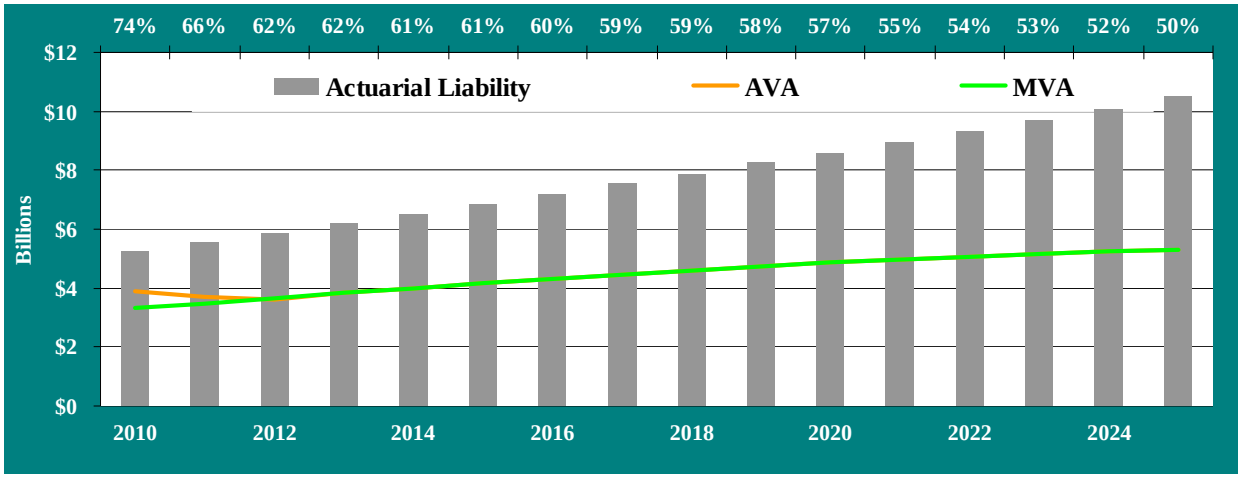
SECTION I
BOARD SUMMARY

Future Outlook

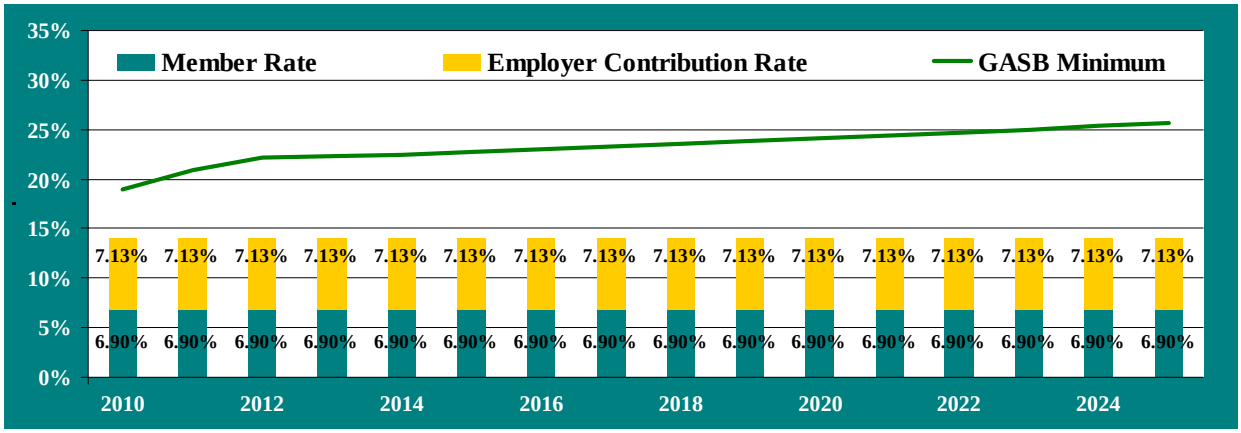
Base Line Projections

These graphs show the expected progress of the System over the next fifteen years assuming the System's assets earn 7.75% on their *market value*, and that contributions continue to be made at the current statutory rates.

The chart below shows the funded status of the plan is expected to decrease substantially over the next two years as excluded investment losses are recognized by the smoothing method. The funded status will then continue to decrease gradually over the remainder of the fifteen years. The projections indicate that the statutory contribution rates will need to be increased to maintain the current level of benefits.



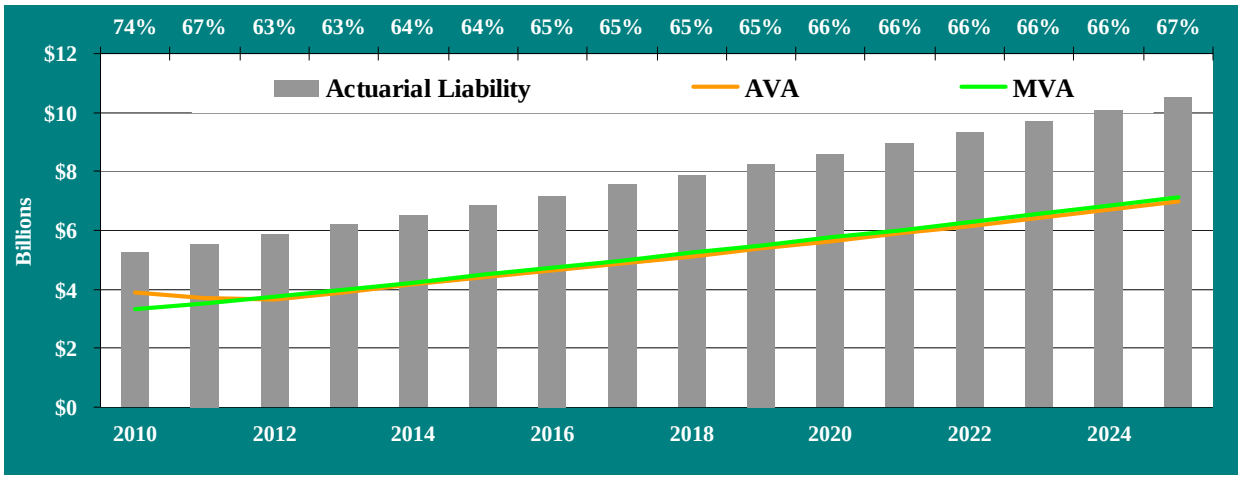
The chart below shows that the total contribution computed on a GASB Minimum basis will increase to reach over 25% of payroll by the end of the fifteen year period. Under current accounting standards this means a dramatic increase in the State's Net Pension Obligation (NPO).



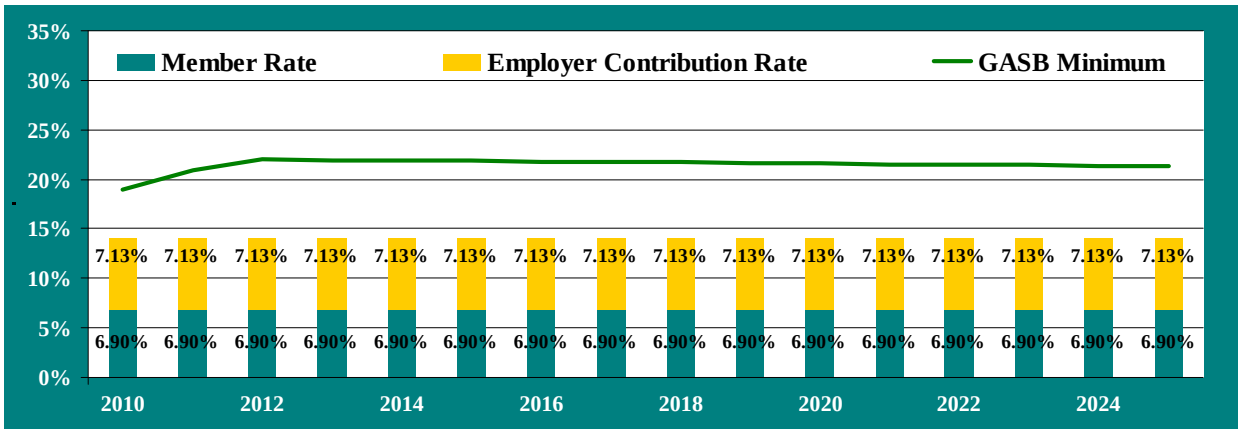
SECTION I
BOARD SUMMARY

Projections With Asset Returns of 9.25%

The future funding status of this System will be impacted by the investment earnings. While improved investment performance can help in meeting funding needs, this projection shows the funded level is still projected to decline without further action. These two charts below show what the next fifteen years would look like with a 9.25% annual return in each year (i.e. 1.5% greater than the assumed rate of return).



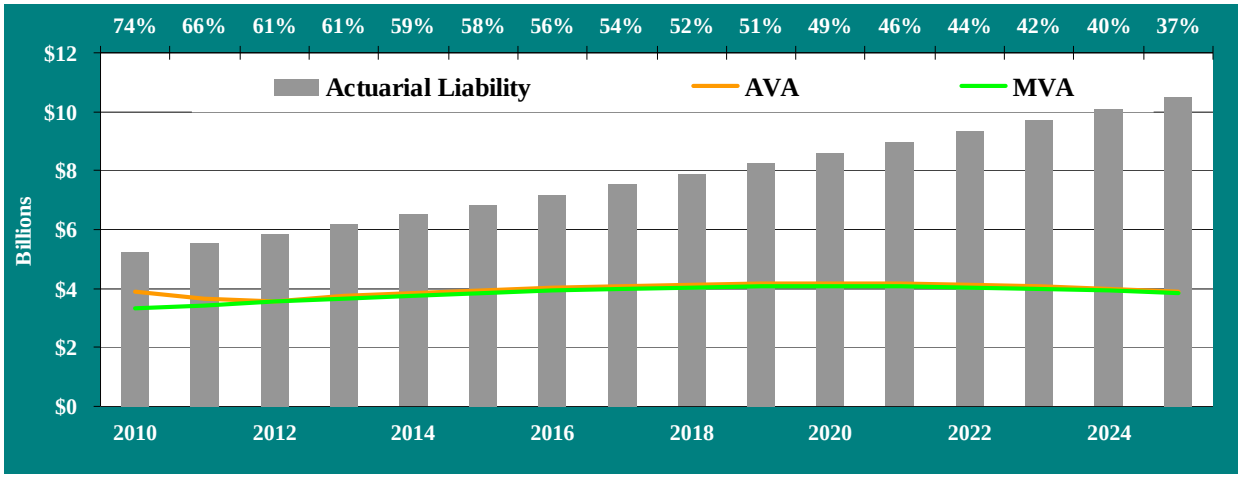
Compared to the baseline projections, the funded status begins to improve some after a decrease over the next several years. The GASB Minimum contribution stays between 20% and 25% through the fifteen year period.



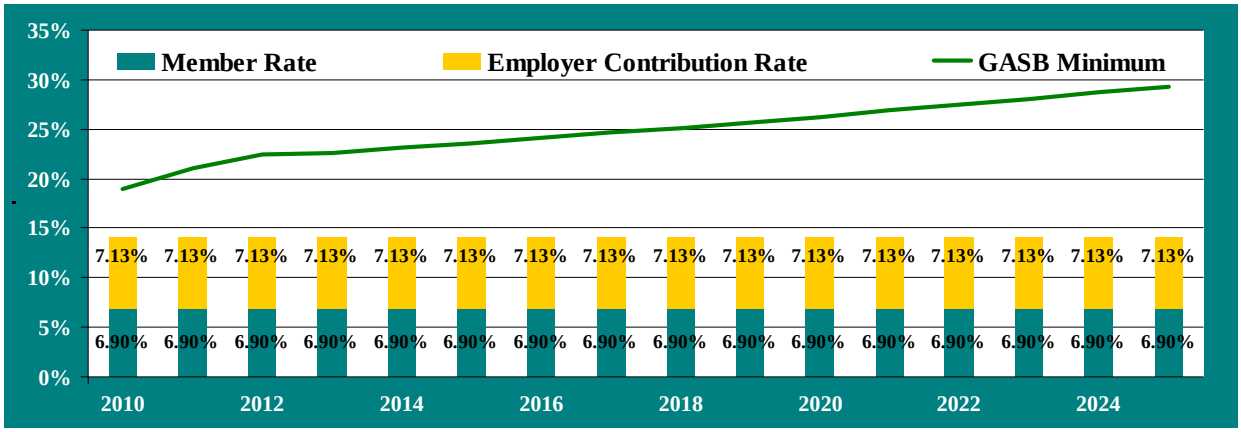
SECTION I
BOARD SUMMARY

Projections With Asset Returns of 6.25%

To further demonstrate how fluctuations in the earnings rate can impact funding, we show the anticipated System funding projections if the invested assets earn 6.25% per year over the entire fifteen-year period (i.e., 1.5% less than the assumed rate of return).



Under this scenario the funded status declines even further than under the baseline projection and the GASB Minimum contribution increases to almost 30% of pay.



SECTION I
BOARD SUMMARY

Table I-2
Montana Public Employees' Retirement System
Summary of Principal System Results

Valuation as of:	June 30, 2009	June 30, 2010	% Change
Participant Counts			
Active Members	28,983	28,834	(0.5%)
Disabled Members*	279	261	(6.5%)
Retirees and Beneficiaries*	16,796	17,251	2.7%
Terminated Vested Members	2,476	2,471	(0.2%)
Terminated Non-Vested Members	5,670	5,402	(4.7%)
Total**	54,204	54,219	0.0%
Annual Salaries of Active Members	$ 1,053,173,964	$ 1,085,206,645	3.0%
Average Annual Salary	$ 36,338	$ 37,636	3.6%
Annual Retirement Allowances for Retired Members and Beneficiaries	$ 201,412,083	$ 216,968,572	7.7%
Assets and Liabilities			
Actuarial Accrued Liability (AAL)	$ 4,792,819,291	$ 5,241,818,794	9.4%
Actuarial Value of Assets (AVA)	4,002,212,253	3,889,890,145	(2.8%)
Unfunded AAL (AVA/AAL)	$ 790,607,038	$ 1,351,928,649	71.0%
Less: PCR-UAL	16,188,870	14,687,168	(9.3%)
Net Unfunded AAL	$ 774,418,168	$ 1,337,241,481	72.7%
Funded Ratio	83.50%	74.21%	
Present Value of Accrued Benefits (PVAB)	$ 4,060,778,783	$ 4,449,382,259	9.6%
Market Value of Assets	2,998,626,255	3,315,905,638	10.6%
Unfunded PVAB	$ 1,062,152,528	$ 1,133,476,621	6.7%
Accrued Benefit Funding Ratio	73.84%	74.53%	
Ratio of Actuarial Value to Market Value	133.47%	117.31%	
Contributions as a Percentage of Payroll			
Statutory Funding Rate	14.070%	14.070%	
Less: Transfer to DB Ed Fund	0.040%	0.040%	
Net Statutory Funding Rate	14.030%	14.030%	
Normal Cost Rate	12.160%	12.610%	
Available for Amortization of UAL	1.870%	1.420%	
Period to Amortize	Does not amortize	Does not amortize	
Projected 30-year Level Funding Rate	16.420%	19.080%	
Projected Shortfall (Surplus)	2.350%	5.010%	

* Based on PERA categorization for the annual report. For actuarial valuation purposes, 784 members in 2009 and 782 members in 2010 were valued as disabled members with offsetting reductions to the number of retired members.

** The total number of members processed in the 2010 valuation was 54,111 compared to 54,219 above being used for the annual report. A reconciliation of this difference appears at the beginning of Appendix A.

SECTION II
ASSETS

Pension Plan assets play a key role in the financial operation of the System and in the decisions the Trustees may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact upon benefit levels, State contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on System assets including:

- **Disclosure** of System assets at June 30, 2009 and June 30, 2010;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**;
- An assessment of **investment performance**; and
- A projection of the System's expected **cashflows** for the next ten years.

Disclosure

The market value of assets represents a "snap-shot" or "cash-out" values which provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace.

The actuarial values are market values which have been smoothed and are used for evaluating the System's ongoing liability to meet its obligations.

The actuarial value of assets is the current market value, adjusted by a four-year smoothing of gains and losses on a market value basis. Each year's gain or loss is determined difference between the actual market return and the expected market return using the assumed rate of investment return.

SECTION II
ASSETS

Table II-1
Changes in Market Values

Value of Assets – June 30, 2009		**$ 2,998,626,255**
7		
Additions		
Member Contributions	$ 78,614,399	
Employer Contributions	80,246,027	
State Contributions	536,881	
Investment Return	386,072,601	
Other	136,285	
Total Additions	**$ 545,606,193**	
Deductions		
Benefit Payments	$ 225,069,514	
Administrative Expenses	3,257,296	
Total Deductions	**$ 228,326,810**	
Value of Assets – June 30, 2010		**$ 3,315,905,638**

SECTION II
ASSETS

Actuarial Value of Assets

The actuarial value of assets represents a "smoothed" value developed by the actuary to reduce, or eliminate, erratic results which could develop from short-term fluctuations in the market value of assets. For this System, the actuarial value has been calculated by taking the market value of assets less 75% of the investment gain (loss) during the preceding year, less 50% of the investment gain (loss) during the second preceding year, and less 25% of the investment gain (loss) during the third preceding year. The tables below illustrate the calculation of actuarial value of assets for the June 30, 2010 valuation.

Table II-2
Market Value Gain/(Loss)

Value of Assets – June 30, 2009	$ 2,998,626,255
Employer Contributions	$ 159,533,592
Benefit Payments	(225,069,514)
Expected Return at 8.0%	237,319,094
Expected Value at June 30, 2010	$ 3,170,409,427
Actual Value at June 30, 2010	$ 3,315,905,638
Investment Gain/(Loss)	$ 145,496,211

Table II-3
Develop Excluded Gain/(Loss)

	Total Gain/(Loss)	Excluded Portion
Exclude 75% of 2010 Gain/(Loss)	$ 145,496,211	$ 109,122,158
Exclude 50% of 2009 Gain/(Loss)	$ (1,103,260,330)	$ (551,630,165)
Exclude 25% of 2008 Gain/(Loss)	$ (525,906,000)	$ (131,476,500)
Total Excluded Gain/(Loss) for AVA Calculation		$ (573,984,507)

Table II-4
Actuarial Value of Assets

Market Value of Assets – June 30, 2010	$ 3,315,905,638
Total Gain/(Loss) excluded	(573,984,507)
Actuarial Value of Assets – June 30, 2010	$ 3,889,890,145

SECTION II
ASSETS

Investment Performance

The market value of assets (MVA) returned 12.91% during 2010, which is less than the assumed 8% return. A return of (1.18%) on the actuarial value of assets (AVA) is primarily the result of the asset smoothing method being utilized for the calculation of the actuarial value of assets. Since only 25% of the gain or loss from the performance of the System is recognized in a given year, in periods of very good performance, the AVA can lag significantly behind the MVA. In a period of negative returns, the AVA does not decline as rapidly as the MVA.

Table II-5
Annual Rates of Return

Year Ending June 30,	Market Value	Actuarial Value
2004	13.35%	1.27%
2005	8.03%	5.32%
2006	8.98%	9.25%
2007	17.92%	11.94%
2008	(4.91%)	7.62%
2009	(20.85%)	(0.16%)
2010	12.91%	(1.18%)

SECTION II
ASSETS

Table II-6
Projection of System's Benefit Payments and Contributions

Year Beginning July 1,	Expected Benefit Payments	Expected Contributions*
2010	$ 257,321,191	$ 161,514,880
2011	263,360,786	167,975,475
2012	284,943,281	174,694,494
2013	308,022,954	181,682,274
2014	332,222,807	188,949,565
2015	358,288,073	196,507,547
2016	386,098,304	204,367,849
2017	414,938,826	212,542,563
2018	444,087,854	221,044,266
2019	473,204,389	229,886,036

* Expected contributions include Employer Contributions, State Contributions and Member Contributions. For illustration purposes, we have assumed that all contribution rates will remain level and that payroll will increase at the actuarially assumed rate of 4.00% per year.

Expected benefit payments are projected for the closed group valued at June 30, 2010. Projecting any farther than ten years using a closed-group would not yield reliable predictions due to the omission of new hires.

SECTION III
LIABILITIES

In this section, we present detailed information on System liabilities including:

- **Disclosure** of System liabilities at June 30, 2009 and June 30, 2010; and
- Statement of **changes** in these liabilities during the year; and
- Details on the source of actuarial gains and losses between this valuation and the last; and
- Development of actuarial unfunded liability on a market value basis as required under MCA 12-2-407; and
- Development of the Plan Choice Rate unfunded liability and rate.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of Benefits:** Used for analyzing the financial outlook of the System, this represents the amount of money needed today to fully pay off all future benefits and expenses of the System, assuming participants continue to accrue benefits.

- **Actuarial Accrued Liability:** Used for funding calculations and GASB disclosures, this liability is calculated taking the Present Value of Benefits and subtracting the present value of future Member Contributions and future Employer Normal Costs under an acceptable actuarial funding method. This method is referred to as the **Entry Age Normal** (EAN) funding method.

- **Present Value of Accrued Liabilities:** Used for communicating the current level of liabilities, this liability represents the total amount of money needed today to fully pay off the current accrued obligations of the System, assuming no future accruals of benefits. These liabilities are also required for accounting purposes (FASB ASC Topic No. 960) and used to assess whether the System can meet its current benefit commitments.

The following table discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of System assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

SECTION III
LIABILITIES

Table III-1
Liabilities/Net (Surplus)/Unfunded

	June 30, 2009	June 30, 2010
Present Value of Benefits		
Active Participant Benefits	$ 3,348,853,126	$ 3,623,392,805
Retiree and Inactive Benefits	2,412,692,983	2,636,877,759
Present Value of Benefits (PVB)	**$ 5,761,546,109**	**$ 6,260,270,564**
Market Value of Assets (MVA)	$ 2,998,626,255	$ 3,315,905,638
Future Member Contributions	557,320,534	573,452,477
Future Employer Contributions	575,897,885	592,567,560
Funding Shortfall/(Surplus)	1,629,701,435	1,778,344,889
Total Resources	**$ 5,761,546,109**	**$ 6,260,270,564**
Actuarial Accrued Liability		
Present Value of Benefits (PVB)	$ 5,761,546,109	$ 6,260,270,564
Present Value of Future Normal Costs (PVFNC)	968,726,818	1,018,451,770
Actuarial Accrued Liability (AAL=PVB–PVFNC)	**4,792,819,291**	**5,241,818,794**
Actuarial Value of Assets (AVA)	4,002,212,253	3,889,890,145
Net (Surplus)/Unfunded (AAL – AVA)	**$ 790,607,038**	**$ 1,351,928,649**
Present Value of Accrued Liability		
Present Value of Benefits (PVB)	$ 5,761,546,109	$ 6,260,270,564
Present Value of Future Benefit Accruals (PVFBA)	1,700,767,326	1,810,888,305
Present Value of Accrued Liability (PVAB=PVB–PVFBA)	**4,060,778,783**	**4,449,382,259**
Market Value of Assets (MVA)	$ 2,998,626,255	$ 3,315,905,638
Net Unfunded (PVAB – MVA)	**$ 1,062,152,528**	**$ 1,133,476,621**

SECTION III
LIABILITIES

Changes in Liabilities

Each of the Liabilities disclosed in the prior table are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- System amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in System assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure System assets

In each valuation, we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the System. Below we present key changes in liabilities since the last valuation. On the next page we provide more detail on the sources of the actuarial (gain)/loss as measured on the basis of actuarial accrued liability.

Table III-2

(In Thousands)	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Liability
Liabilities June 30, 2009	$ 5,761,546,109	$ 4,792,819,291	$ 4,060,778,783
Liabilities June 30, 2010	6,260,270,564	5,241,818,794	4,449,382,259
Liability Increase (Decrease)	498,724,455	448,999,503	388,603,476
Change Due to:			
Actuarial (Gain)/Loss	NC*	10,000,799	NC*
Assumption Changes	216,798,127	156,542,995	68,254,928
Benefits Accumulated and Other Sources	281,926,328	282,455,709	320,348,548

* NC = not calculated.

SECTION III
LIABILITIES

Table III-3
Summary of Actuarial Gains and Losses as of June 30, 2010

Actuarial Liabilities as of July 1, 2009	$ 4,792,819,291
Normal Cost	123,243,047
Actual Benefit Payments	(225,069,514)
Expected Earnings	384,282,176
Expected Actuarial Liability as of July 1, 2010	$ 5,075,275,000
Actual Liability as of July 1, 2010 (before assumption changes)	$ 5,085,275,799
Liability (Gain)/Loss	$ 10,000,799
Sources of Liability (Gain)/Loss	
Salary (Gain)/Loss	$ (2,079,155)
New Participant (Gain)/Loss	5,167,048
Active Retirements (Gain)/Loss	(6,203,820)
Active Terminations (Gain)/Loss	(2,571,503)
Active Deaths (Gain)/Loss	(700,563)
Active Disability (Gain)/Loss	(487,173)
Inactive Decrements (Gain)/Loss	16,875,965
Actual Liability as of July 1, 2010 (after assumption changes)	$ 5,241,818,794
Liability (Gain)/Loss due to assumption changes	$ 156,542,995
Actuarial Value of Assets as of July 1, 2009	$ 4,002,212,253
Net Cash Flow	(65,535,922)
Expected Earnings	317,605,974
Expected Actuarial Value of Assets as of July 1, 2010	$ 4,254,282,305
Actual Actuarial Value of Assets as of July 1, 2010	$ 3,889,890,145
Investment (Gain)/Loss	$ 364,392,160
Total Liability (Gain)/Loss	166,543,794
Total Actuarial (Gain)/Loss	$ 530,935,954

SECTION III
LIABILITIES

Table III-4 shows the actuarial liabilities as of the prior and current valuation dates. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets. The funded ratio is the ratio of the actuarial value of assets to the actuarial liability.

Table III-4
Actuarial Liabilities for Funding

	June 30, 2009	June 30, 2010
1. Actuarial Liabilities		
Retiree and Inactive Benefits	$ 2,412,692,983	$ 2,636,877,759
Active Member Benefits	2,380,126,308	2,604,941,035
Total Actuarial Liability	**$ 4,792,819,291**	**$ 5,241,818,794**
2. Actuarial Value of Assets	$ 4,002,212,253	$ 3,889,890,145
3. Unfunded Actuarial Liability	$ 790,607,038	$ 1,351,928,649
4. Funded Ratio	83.50%	74.21%

Montana Code Annotated (MCA) 19-2-407 requires an analysis of how market performance is affecting the actuarial funding of the System. Table III-5 presented below shows the same information as in Table III-4 above, but using market value of assets rather than actuarial value of assets.

Table III-5
Actuarial Liabilities on Market Value Basis (MCA 19-2-407)

	June 30, 2009	June 30, 2010
1. Actuarial Liabilities		
Retiree and Inactive Benefits	$ 2,412,692,983	$ 2,636,877,759
Active Member Benefits	2,380,126,308	2,604,941,035
Total Actuarial Liability	**$ 4,792,819,291**	**$ 5,241,818,794**
2. Market Value of Assets	$ 2,998,626,255	$ 3,315,905,638
3. Unfunded Actuarial Liability	$ 1,794,193,036	$ 1,925,913,156
4. Funded Ratio	62.56%	63.26%

SECTION III
LIABILITIES

Table III-6 shows the development of the portion of the unfunded actuarial liability allocated to PERS members who are in alternative defined contribution plans. This liability is funded by the plan choice rate (PCR) contributions.

Table III-6
Plan Choice Rate Unfunded Liability

	June 30, 2010
1. PCR-UAL as of June 30, 2009	$ 16,188,870
2. Assumed Interest at 8% per year	1,295,110
3. Less: PCR Contributions to DBRP reduced by Normal Cost	(2,689,242)
4. Interest at 8% on line 3	(107,570)
5. PCR – UAL as of June 30, 2010	$ 14,687,168

Table III-7 determines the sufficiency of the plan choice rate (PCR), which is used to determine the contributions made to the system for purposes of funding the PCR unfunded liability.

Table III-7
Plan Choice Rate

		June 30, 2010
PCR – Normal Cost Rate		
Normal Cost Rate		
DBRP Members Only		12.610%
Including DCRP and ORP members		12.610%
Difference	(A)	0.000%
Payroll as of June 30, 2010		
DBRP Members Only	(B)	$ 1,040,116,434
DCRP and ORP members	(C)	$ 98,803,523
PCR – Normal Cost Rate	(A) X (B) ÷ (C)	0.000%
PCR – UAL Amortization		
PCR – UAL as of June 30, 2010		$ 14,687,168
PCR Available for Amortization		
Current PCR Amortization Rate		2.640%
Less: PCR – Normal Cost Rate		0.000%
PCR Available for Amortization - 2010		2.640%
Years to Amortize PCR – UAL from June 30, 2010		6.4 years
Maximum Years for Amortization		16.75 years
Sufficient or Insufficient		Sufficient

SECTION IV
CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this System, the funding method employed is the **Entry Age Actuarial Cost Method**. Under this method, there are two components to the total contribution: the **normal cost rate** and the **unfunded actuarial liability rate** (UAL rate). The normal cost rate is determined by taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary. The normal cost rate is multiplied by current salary to determine each member's normal cost rate. Finally, the total normal cost rate is reduced by the member contribution to produce the employer normal cost rate. The difference between the EAN actuarial liability and the actuarial value of assets is the unfunded actuarial liability.

For purposes of determining the adequacy of the statutory funding rate, the UAL rate is calculated by subtracting the normal cost rate from the statutory rate. A calculation is then made to determine the period over which the UAL rate will amortize the unfunded actuarial liability. A second UAL rate is calculated based upon a 30-year amortization of the UAL, which is the maximum amortization period permitted under GASB Statement No. 25, but which should not necessarily be construed as a recommended contribution level. All UAL payments are determined as a level percentage of pay, assuming that total pay increases by the annual inflation rate of 4.00%.

SECTION IV
CONTRIBUTIONS

The tables below present and compare the contribution rates for the System for this valuation and the prior one.

Table IV-1
Statutory Basis

	June 30, 2009	June 30, 2010
Statutory Funding Rates		
Members	6.900%	6.900%
Employers and State[1]	7.170%	7.170%
Total	14.070%	14.070%
Transfer to Education Fund	0.040%	0.040%
Net Contribution to DBRP	14.030%	14.030%
Normal Cost Rate	12.160%	12.610%[2]
Funding Rate Available for Amortization	1.870%	1.420%
Unfunded Actuarial Liability (Surplus)	790,607,038	1,351,928,649
Less: PCR-UAL	16,188,870	14,687,168
UAL Funded by DBRP	774,418,168	1,337,241,481
Years to Amortize	Does not amortize	Does not amortize

[1] Rates shown are for the fiscal year following the valuation date. The allocation of the rate between Employers and the State is described in Appendix C, item 2.

[2] The normal cost rate is projected to be 11.91% for members eligible after July 1, 2010. It is expected that the average normal cost rate will decrease over the next generation of active plan members.

Table IV-2
Years to Amortize Unfunded Actuarial Liability
Under Alternate Assumptions

	June 30, 2009	June 30, 2010
Years to Amortize		
Using Market Value of Assets	Does not amortize	Does not amortize
Excluding additional contributions under HB131		
Using Actuarial Value of Assets	Does not amortize	Does not amortize
Using Market Value of Assets	Does not amortize	Does not amortize

SECTION IV
CONTRIBUTIONS

Table IV-3
Calculated Contribution Basis

	June 30, 2009	June 30, 2010
Normal Cost Rate	12.160%	12.610%
Educational Fund	0.040%	0.040%
Amortization Payment (30-years)	4.220%	6.430%
Total Calculated Contribution Rate	16.420%	19.080%
Less Statutory Rate	14.070%	14.070%
Shortfall (Surplus) in Statutory Rate	2.350%	5.010%

Table IV-4
Calculated Contribution on Market Value (MCA 19-2-407)

	June 30, 2009	June 30, 2010
Normal Cost Rate	12.160%	12.610%
Educational Fund	0.040%	0.040%
Amortization Payment (30-years)	9.680%	9.190%
Total Calculated Contribution Rate	21.880%	21.840%
Less Statutory Rate	14.070%	14.070%
Shortfall (Surplus) in Statutory Rate	7.810%	7.770%

As the statutory rate continues to lag the rate needed to sustain a 30 year amortization and as the remaining unrecognized losses are picked up in future valuations, we amortize the following results for the next 5 valuations (assuming all assumptions are met, including 7.75% return):

Table IV-5
Projected Calculated Contribution Rates

Valuation Year	Rate
2011	20.95%
2012	22.23%
2013	22.29%
2014	22.51%
2015	22.74%

SECTION V
ACCOUNTING STATEMENT INFORMATION

Account Standard Codification Topic No. 960 of the Financial Accounting Standards Board requires the System to disclose certain information regarding its funded status. Statement No. 25 of the Governmental Accounting Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The FASB ASC Topic No. 960 disclosures provide a quasi "snap shot" view of how the System's assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to buy the benefits for all members if the System were to terminate.

The GASB-25 actuarial accrued liability is the same as the actuarial liability amount calculated for funding purposes.

Both the present value of accrued benefits (FASB ASC Topic No. 960) and the actuarial accrued liability (GASB-25) are determined assuming that the System is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.75% per annum.

FASB ASC Topic No. 960 specifies that a comparison of the present value of accrued (accumulated) benefits with the market value of the assets as of the valuation date must be provided. GASB Statement No. 25 requires the actuarial accrued liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of June 30, 2010 are exhibited in Table V-1.

Tables V-2 through V-5 are exhibits to be used with the State CAFR report. Table V-2 is the Note to Required Supplementary Information, Table V-3 is a history of gains and losses in Accrued Liability, Table V-4 is the Schedule of Funding Progress, and V-5 is the Solvency Test which shows the portion of Accrued Liability covered by Assets.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-1
Accounting Statement Information

	June 30, 2009	June 30, 2010
A. FASB ASC Topic No. 960 Basis		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	$ 2,272,582,245	$ 2,481,533,819
b. Former Vested Members	140,110,738	155,343,940
c. Active Members	1,648,085,800	1,812,504,500
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	$ 4,060,778,783	$ 4,449,382,259
3. Assets at Market Value	2,998,626,255	3,315,905,638
4. Unfunded Present Value of Accrued Benefits (2 – 3)	$ 1,062,152,528	$ 1,133,476,621
5. Ratio of Assets to Present Value of Accrued Benefits (3 / 2)	73.84%	74.53%
B. GASB No. 25 Basis		
1. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$ 2,412,692,983	$ 2,636,877,759
2. Actuarial Accrued Liabilities for current employees	2,380,126,308	2,604,941,035
3. Total Actuarial Accrued Liability (1 + 2)	$ 4,792,819,291	$ 5,241,818,794
4. Net Actuarial Assets available for benefits	4,002,212,253	3,889,890,145
5. Unfunded Actuarial Accrued Liability (3 – 4)	$ 790,607,038	$ 1,351,928,649

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-2
NOTE TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date	June 30, 2010
Actuarial cost method	Entry age
Amortization method	Open
Remaining amortization period for Annual Required Contribution	30 years
Asset valuation method	4-Year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.75%
General wage growth*	4.00%
Merit salary increases	0.0% - 6.0%
*Includes inflation at	3.00%

The actuarial assumptions used have been recommended based on the most recent review of the System's experience (completed in 2010) and adopted by the Retirement Board.

The rate of employer contributions to the System is composed of the normal cost and amortization of the unfunded actuarial accrued liability. The normal cost is a level percent of payroll cost which will pay for projected benefits at retirement for each participant. The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future normal costs. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial accrued liability.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-3
ANALYSIS OF FINANCIAL EXPERIENCE*

Gain and Loss in Accrued Liability During Years Ended June 30
Resulting from Differences Between Assumed Experience and Actual Experience

	Gain (or Loss) for Year ending June 30, (expressed in thousands)					
Type of Activity	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Investment Income on Actuarial Assets	$ (80,870)	$ 39,882	$ 136,012	$ (14,160)	$ (329,471)	$ (364,392)
Combined Liability Experience	18,672	33,734	(40,640)	(47,012)	(14,731)	(10,001)
(Loss)/Gain During Year from Financial Experience	$ (62,198)	$ 73,616	$ 95,372	$ (61,172)	$ (344,202)	$ (374,393)
Non-Recurring Items	0	0	0	0	0	(156,543)
Composite Gain (or Loss) During Year	$ (62,198)	$ 73,616	$ 95,372	$ (61,172)	$ (344,202)	$ (530,936)

* Years prior to 2009 were taken from reports prepared by prior actuary.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-4
SCHEDULE OF FUNDING PROGRESS*
(expressed in thousands)

Valuation Date June 30,	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
2010	$ 3,889,890	5,241,819	74	$ 1,351,929	1,083,780	125
2009	4,002,212	4,792,819	84	790,607	1,003,215	79
2008	4,065,307	4,504,743	90	439,436	955,113	46
2007	3,825,234	4,201,251	91	376,017	907,424	41
2006	3,459,084	3,919,313	88	460,229	880,708	52
2005	3,179,010	3,719,998	85	540,988	847,431	64

Table V-5
SOLVENCY TEST*
Aggregate Accrued Liabilities for
(expressed in thousands)

Valuation Date June 30,	Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2010	$848,756	2,481,534	$1,911,529	$3,889,890	100	100	29
2009	828,390	2,272,582	1,691,847	4,002,212	100	100	53
2008	783,801	2,232,148	1,488,794	4,065,307	100	100	70
2007	749,000	2,051,107	1,401,143	3,825,234	100	100	73
2006	718,260	1,895,838	1,305,215	3,459,084	100	100	65
2005	701,851	1,756,674	1,261,473	3,179,010	100	100	57

* Years prior to 2009 were taken from reports prepared by prior actuary.

APPENDIX A
MEMBERSHIP INFORMATION

Reconciliation of Participant Counts

	Active	Disabled	Retirees and Beneficiaries	Terminated Vested Members	Terminated Non-Vested Members	Total
Participant counts used for valuation	28,833	782	16,633	2,470	5,393	54,111
Disabled members having attained normal retirement age		(521)	521			0
Beneficiaries of Disabled Members						0
Beneficiaries with less than one year of certain payments remaining			97			97
Other Adjustments	1			1	9	11
Participant counts shown in Annual Financial Report	28,834	261	17,251	2,471	5,402	54,219

This chart is presented for informational purposes only. The counts shown in the valuation line were used for preparation of the liabilities disclosed within this report. The counts disclosed for the Annual Financial Report and the Board Summary (page 8) match the CAFR reports at the request of the Board. The differences between the counts have no material effect upon the liability calculation.

The salaries used in the tables and charts which follow are different than the salaries used for the Board Summary on page 8. For this Appendix A, the valuation projected salaries to be paid for the following fiscal year, whereas for the Board Summary, salaries are as of the valuation date.

The benefits for retirees and beneficiaries used for the tables and charts which follow are different than the benefits used for the Board Summary on page 8. For this Appendix A, the valuation projected benefits to be paid for the following fiscal year (including GABA where applicable), whereas for the Board Summary, annual benefits are as of the valuation date.

APPENDIX A
MEMBERSHIP INFORMATION

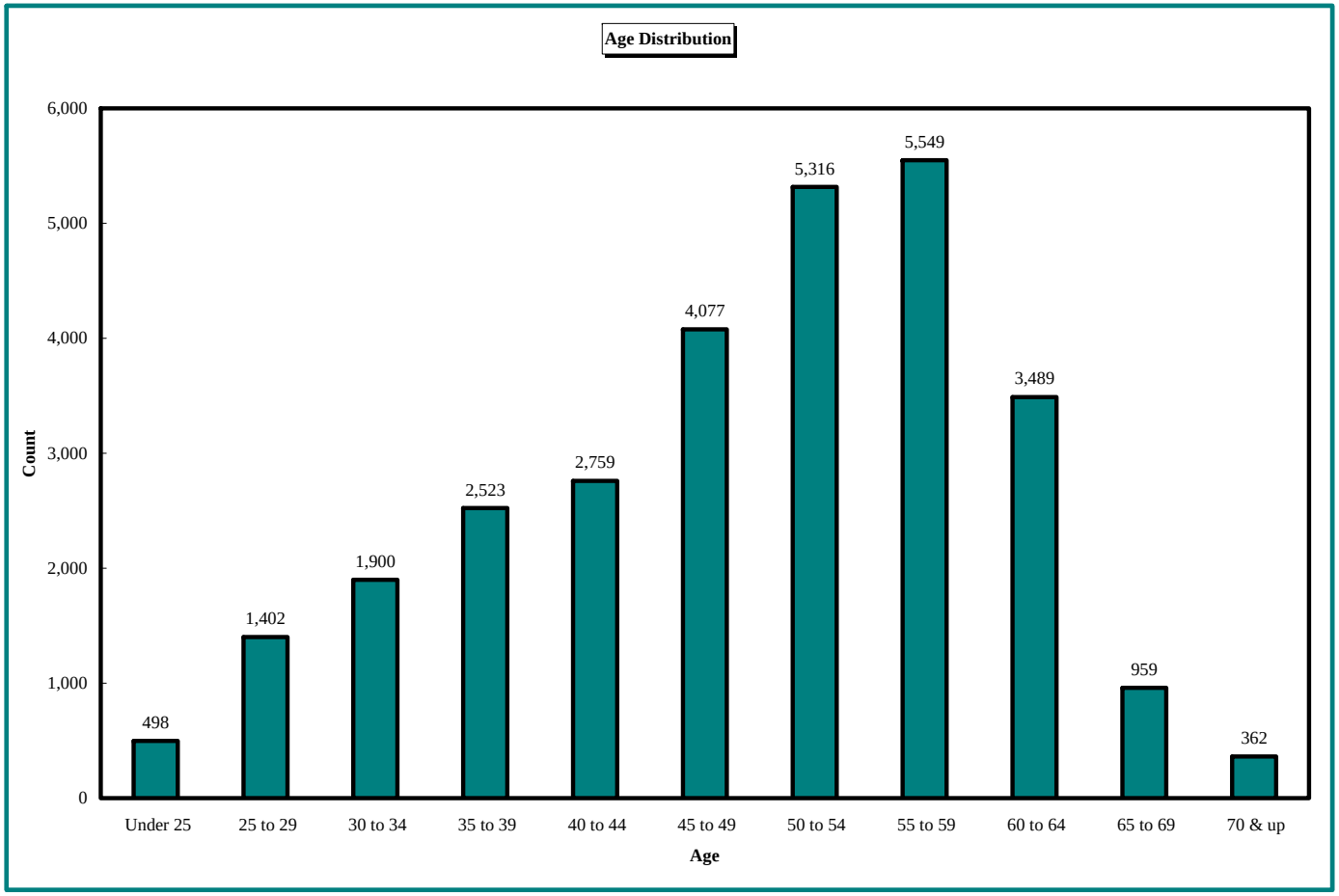
Montana Public Employees' Retirement System Distribution of Active Members by Age and Service as of June 30, 2010

COUNTS BY AGE/SERVICE

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 25	257	240	1	0	0	0	0	0	0	0	498
25 to 29	438	814	149	1	0	0	0	0	0	0	1,402
30 to 34	404	925	488	83	0	0	0	0	0	0	1,900
35 to 39	672	914	572	293	72	0	0	0	0	0	2,523
40 to 44	357	920	612	461	320	89	0	0	0	0	2,759
45 to 49	429	1,116	898	592	485	403	143	11	0	0	4,077
50 to 54	423	1,186	1,032	830	670	567	418	182	8	0	5,316
55 to 59	339	1,027	955	849	760	642	511	348	115	3	5,549
60 to 64	187	616	585	540	475	473	280	195	112	26	3,489
65 to 69	57	192	192	158	113	103	70	42	22	10	959
70 & up	29	97	80	47	41	23	21	12	7	5	362
Total	3,592	8,047	5,564	3,854	2,936	2,300	1,443	790	264	44	28,834

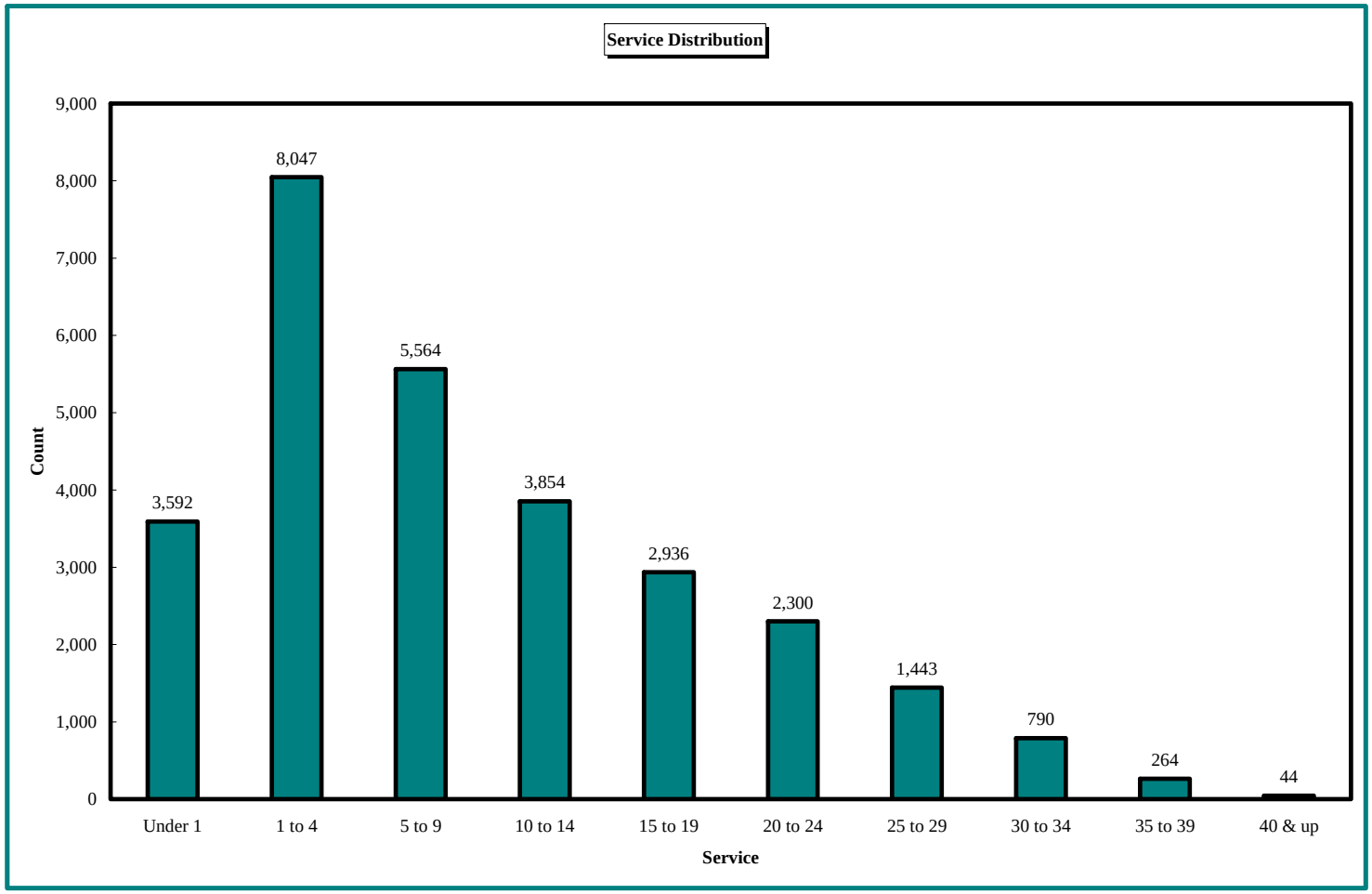
APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Service as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age and Service as of June 30, 2010

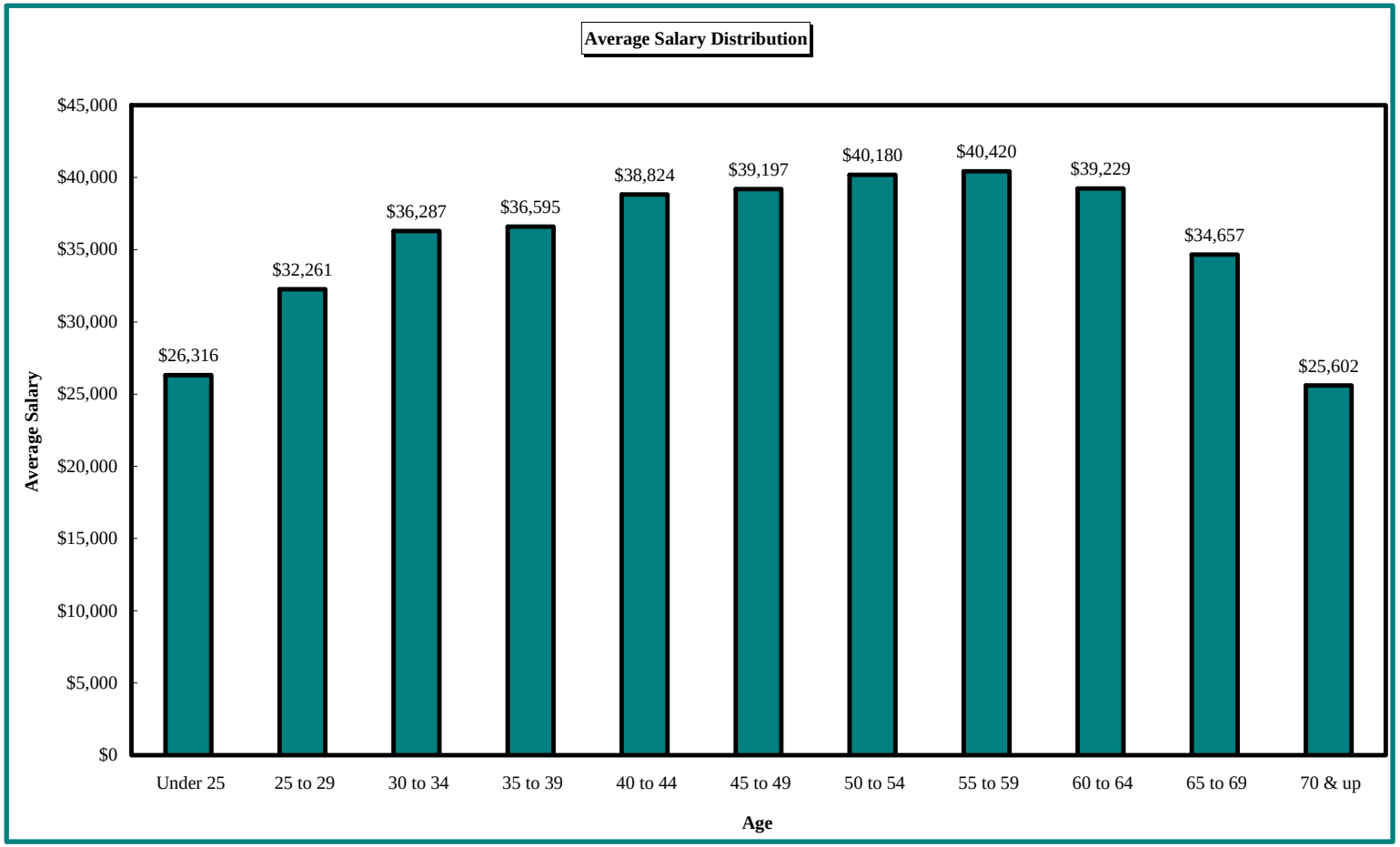
AVERAGE SALARY BY AGE/SERVICE

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 25	$25,129	$27,544	$36,747	$0	$0	$0	$0	$0	$0	$0	$26,316
25 to 29	$30,009	$32,704	$36,483	$29,969	$0	$0	$0	$0	$0	$0	$32,261
30 to 34	$31,495	$34,832	$41,860	$43,062	$0	$0	$0	$0	$0	$0	$36,287
35 to 39	$28,413	$33,941	$42,534	$48,261	$51,996	$0	$0	$0	$0	$0	$36,595
40 to 44	$27,409	$33,105	$39,304	$46,226	$52,608	$52,527	$0	$0	$0	$0	$38,824
45 to 49	$28,828	$32,289	$36,736	$42,526	$50,059	$51,361	$53,726	$52,925	$0	$0	$39,197
50 to 54	$30,090	$31,453	$35,917	$41,112	$45,197	$51,140	$53,549	$56,359	$57,138	$0	$40,180
55 to 59	$26,694	$30,186	$34,877	$38,909	$41,976	$48,552	$54,146	$57,963	$59,117	$63,116	$40,420
60 to 64	$26,990	$30,389	$33,888	$36,760	$41,438	$45,354	$47,927	$54,951	$58,797	$60,435	$39,229
65 to 69	$22,556	$22,566	$33,376	$35,862	$37,118	$39,259	$48,355	$50,072	$59,246	$51,442	$34,657
70 & up	$21,741	$17,407	$22,413	$27,638	$28,376	$34,279	$39,388	$39,438	$43,327	$60,244	$25,602
Total	$28,483	$31,814	$36,965	$41,049	$44,987	$48,619	$52,229	$56,079	$58,514	$58,552	$38,281

The salary shown in the above chart was used for valuation purposes and assumes pay increases for the year.

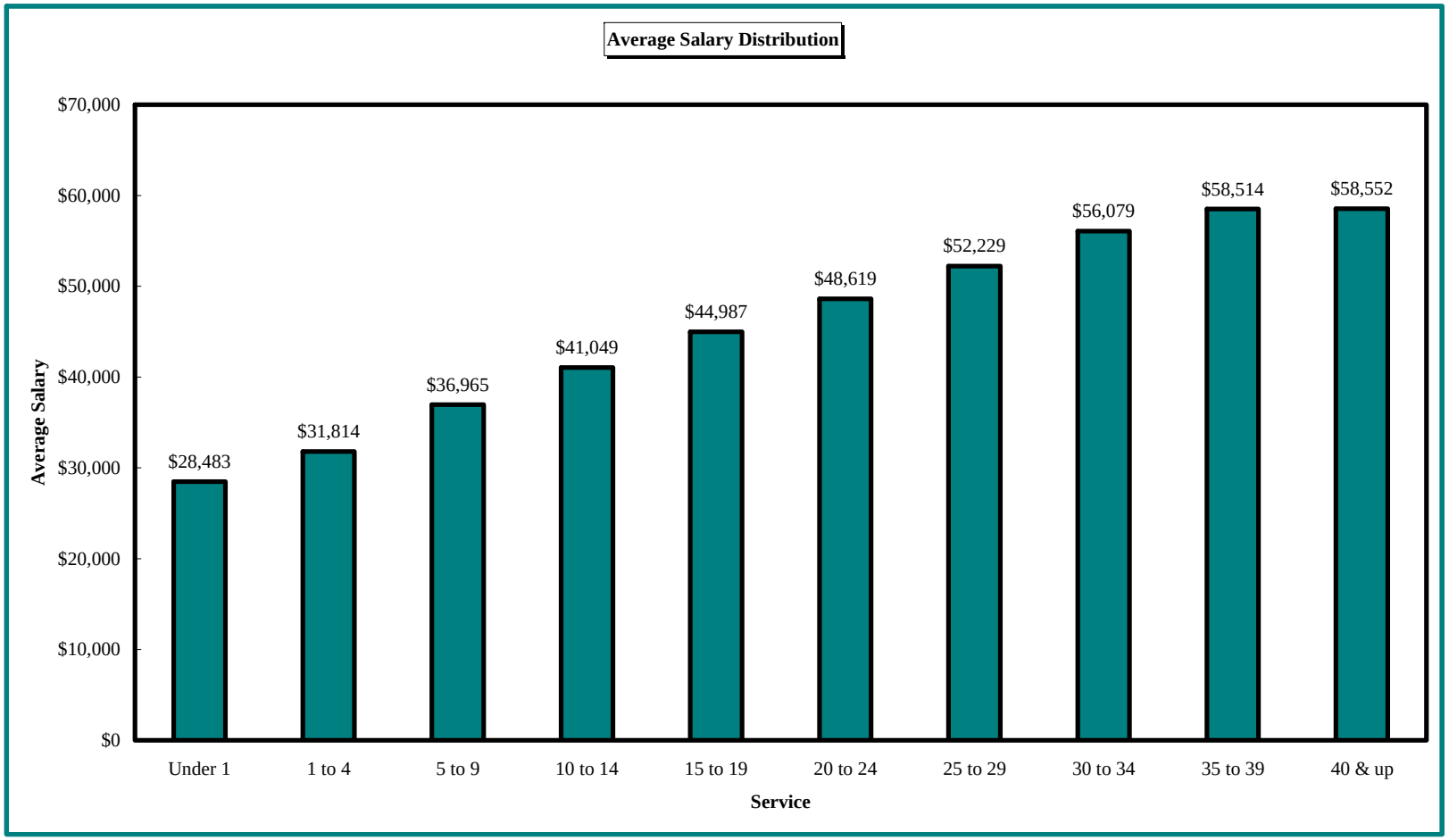
APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Service as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

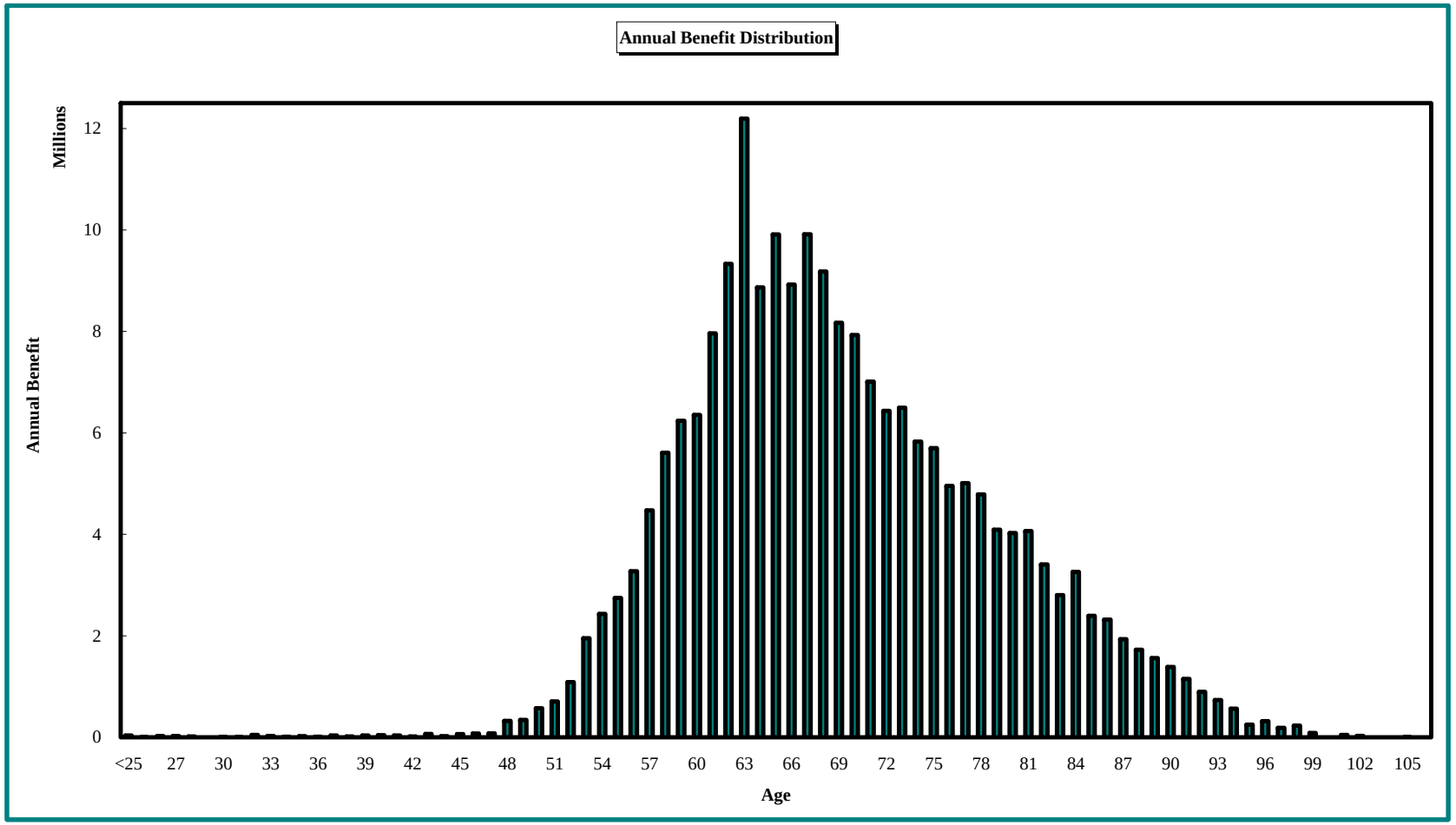
Montana Public Employees' Retirement System Distribution of Retired Members and Survivors as of June 30, 2010

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	7	$37,068	73	540	$6,497,647
25	1	$3,564	74	504	$5,831,304
26	2	$23,329	75	519	$5,700,285
27	3	$25,292	76	474	$4,953,672
28	2	$16,486	77	468	$5,009,527
29	0	$0	78	468	$4,789,018
30	2	$5,846	79	423	$4,093,566
31	2	$5,255	80	417	$4,025,944
32	5	$47,278	81	402	$4,065,401
33	5	$25,869	82	378	$3,408,404
34	2	$9,537	83	296	$2,803,090
35	4	$22,950	84	353	$3,259,240
36	1	$10,082	85	284	$2,393,299
37	5	$34,604	86	272	$2,318,404
38	5	$18,734	87	233	$1,933,287
39	6	$36,954	88	211	$1,727,790
40	6	$41,291	89	190	$1,561,524
41	5	$36,678	90	175	$1,389,036
42	5	$17,941	91	147	$1,151,068
43	7	$68,829	92	110	$898,272
44	5	$21,769	93	87	$733,719
45	9	$64,889	94	64	$564,779
46	8	$75,204	95	34	$251,601
47	12	$77,454	96	33	$318,108
48	20	$323,469	97	21	$185,549
49	22	$342,577	98	24	$228,416
50	35	$573,514	99	9	$83,579
51	49	$707,327	100	0	$0
52	60	$1,086,486	101	5	$46,437
53	96	$1,951,873	102	2	$26,960
54	128	$2,431,458	103	0	$0
55	138	$2,748,183	104	0	$0
56	188	$3,274,950	105	1	$4,592
57	231	$4,475,317	106	0	$0
58	285	$5,610,022	107	0	$0
59	312	$6,239,697	108	0	$0
60	387	$6,356,404	109	0	$0
61	455	$7,960,989	110	0	$0
62	551	$9,334,318	111	0	$0
63	730	$12,193,522	112	0	$0
64	558	$8,871,598	113	0	$0
65	656	$9,910,744	114	0	$0
66	654	$8,922,311	115	0	$0
67	730	$9,913,884	116	0	$0
68	677	$9,180,488	117	0	$0
69	634	$8,171,765	118	0	$0
70	646	$7,930,717	119	0	$0
71	579	$7,013,718	120	0	$0
72	559	$6,432,289			
			Totals	16,633	$212,938,036

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing. The benefit amounts shown have been projected using a half year cola assumption.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Retired Members and Survivors as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

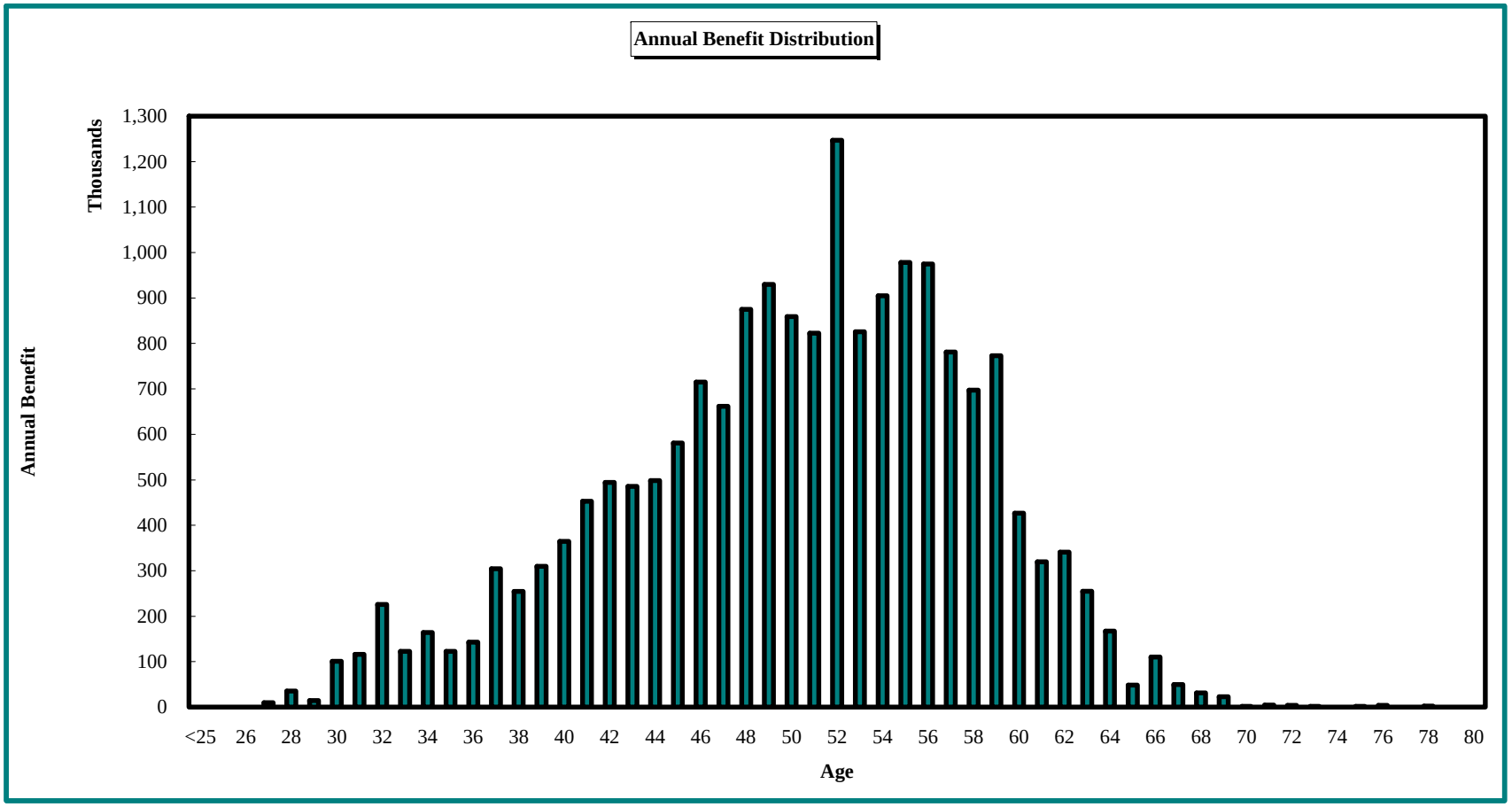
Montana Public Employees' Retirement System Distribution of Vested Members as of June 30, 2010

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$0	73	1	$1,584
25	0	$0	74	0	$0
26	0	$0	75	1	$1,881
27	1	$9,640	76	1	$3,793
28	4	$35,393	77	0	$0
29	2	$14,338	78	1	$2,014
30	9	$100,814	79	0	$0
31	12	$115,865	80	0	$0
32	21	$225,676	81	0	$0
33	13	$122,597	82	0	$0
34	15	$164,100	83	0	$0
35	15	$122,747	84	0	$0
36	15	$142,830	85	0	$0
37	31	$304,341	86	0	$0
38	28	$254,647	87	0	$0
39	34	$309,524	88	0	$0
40	38	$364,753	89	0	$0
41	47	$452,938	90	0	$0
42	52	$494,488	91	0	$0
43	55	$485,591	92	0	$0
44	54	$498,376	93	0	$0
45	68	$581,063	94	0	$0
46	84	$715,118	95	0	$0
47	81	$661,677	96	0	$0
48	103	$875,076	97	0	$0
49	116	$929,869	98	0	$0
50	123	$859,438	99	0	$0
51	101	$822,906	100	0	$0
52	156	$1,247,022	101	0	$0
53	130	$825,689	102	0	$0
54	122	$905,398	103	0	$0
55	134	$978,383	104	0	$0
56	141	$974,710	105	0	$0
57	125	$781,334	106	0	$0
58	110	$697,393	107	0	$0
59	119	$773,398	108	0	$0
60	73	$426,406	109	0	$0
61	63	$319,642	110	0	$0
62	57	$341,094	111	0	$0
63	36	$254,897	112	0	$0
64	24	$167,213	113	0	$0
65	11	$48,686	114	0	$0
66	17	$110,203	115	0	$0
67	9	$49,819	116	0	$0
68	8	$31,531	117	0	$0
69	6	$22,936	118	0	$0
70	1	$1,722	119	0	$0
71	1	$4,629	120	0	$0
72	1	$4,082			
			Totals	2,470	$18,639,269

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Vested Members as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

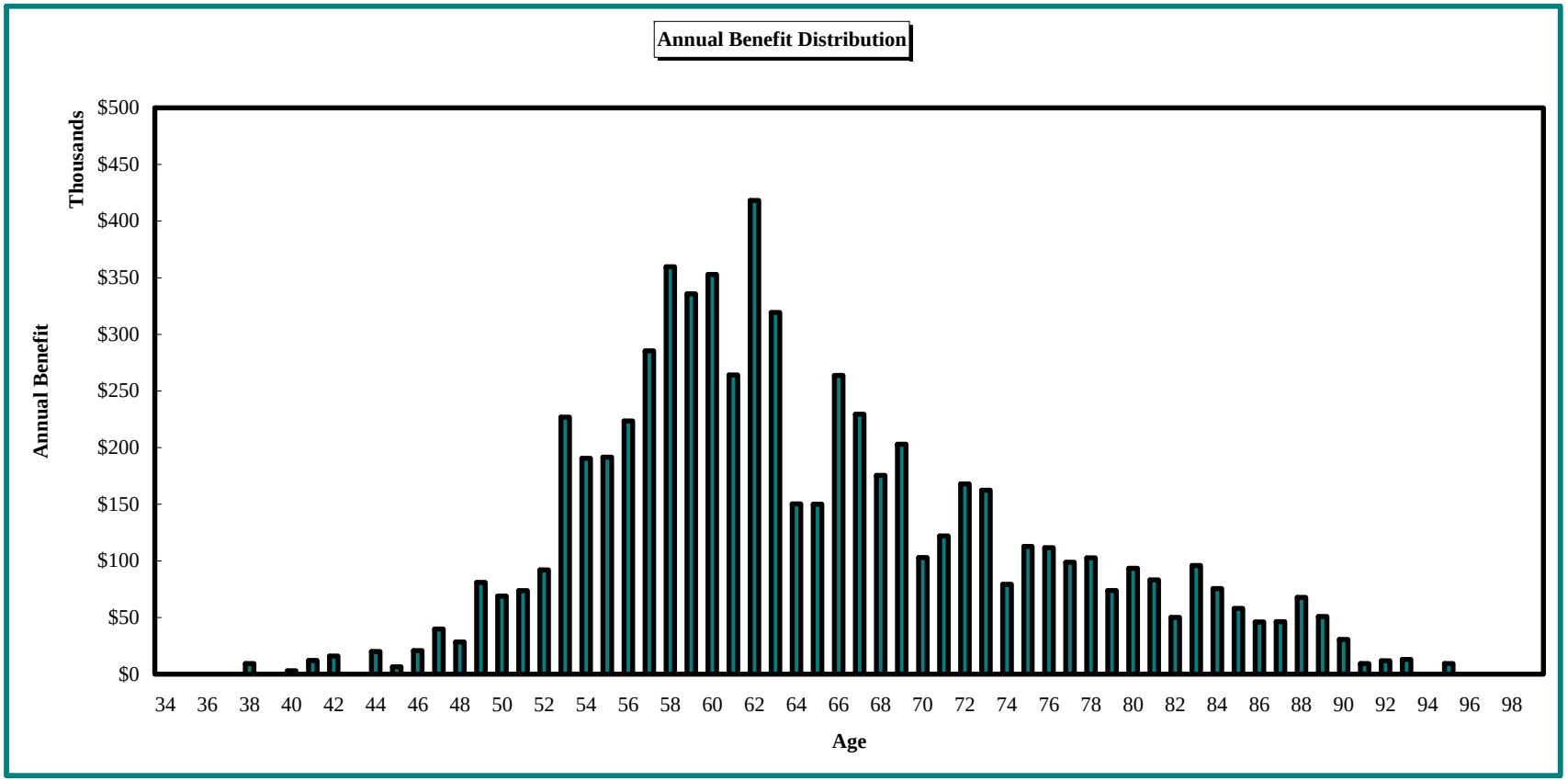
Montana Public Employees' Retirement System Distribution of Disabled Members as of June 30, 2010

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$0	73	24	$162,307
25	0	$0	74	12	$79,352
26	0	$0	75	15	$112,743
27	0	$0	76	16	$111,725
28	0	$0	77	13	$98,810
29	0	$0	78	12	$102,718
30	0	$0	79	11	$73,881
31	0	$0	80	12	$93,501
32	0	$0	81	9	$83,145
33	0	$0	82	6	$50,226
34	0	$0	83	11	$95,920
35	0	$0	84	9	$75,406
36	0	$0	85	7	$58,014
37	0	$0	86	5	$46,190
38	1	$9,335	87	6	$46,215
39	0	$0	88	7	$67,751
40	1	$2,880	89	4	$50,957
41	2	$12,127	90	3	$30,725
42	2	$16,020	91	1	$9,300
43	0	$0	92	1	$11,710
44	3	$19,945	93	1	$13,095
45	1	$6,416	94	0	$0
46	3	$20,817	95	1	$9,423
47	5	$39,826	96	0	$0
48	4	$28,543	97	0	$0
49	8	$80,939	98	0	$0
50	8	$68,912	99	0	$0
51	8	$73,711	100	0	$0
52	8	$92,113	101	0	$0
53	22	$226,804	102	0	$0
54	21	$190,531	103	0	$0
55	26	$191,529	104	0	$0
56	24	$223,623	105	0	$0
57	31	$285,383	106	0	$0
58	39	$359,750	107	0	$0
59	34	$335,806	108	0	$0
60	38	$352,799	109	0	$0
61	31	$264,236	110	0	$0
62	40	$418,293	111	0	$0
63	35	$319,210	112	0	$0
64	20	$150,176	113	0	$0
65	21	$150,125	114	0	$0
66	32	$263,699	115	0	$0
67	29	$229,391	116	0	$0
68	21	$175,350	117	0	$0
69	25	$202,948	118	0	$0
70	12	$102,779	119	0	$0
71	18	$121,948	120	0	$0
72	23	$167,957			
			Totals	782	$6,687,039

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing. The benefit amounts shown have been projected using a half year cola assumption.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Disabled Members as of June 30, 2010



APPENDIX A
MEMBERSHIP INFORMATION

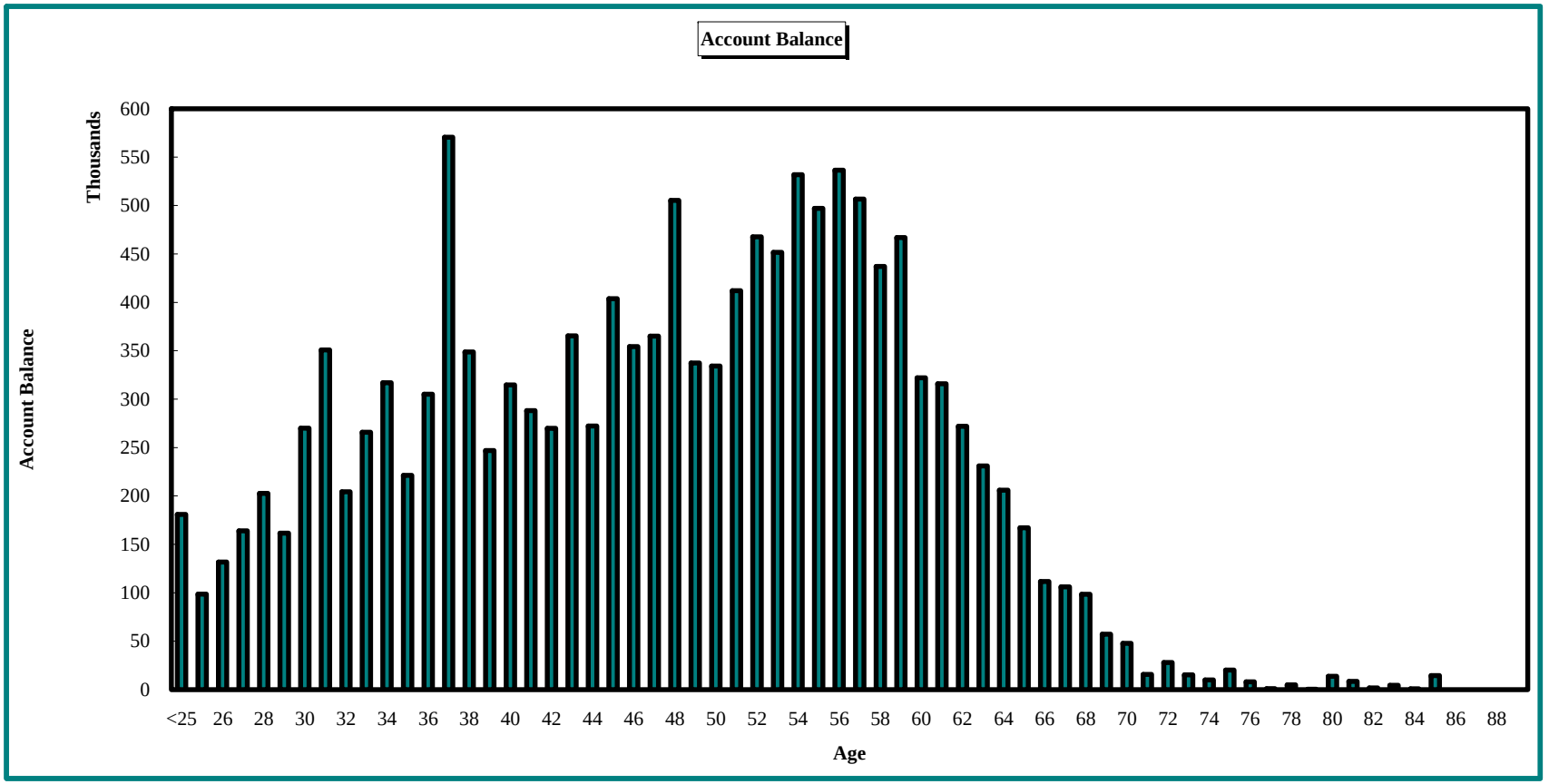
Montana Public Employees' Retirement System Distribution of Non-Vested Members as of June 30, 2010

Age	Count	Account Balance	Age	Count	Account Balance
<25	198	$180,958	73	8	$15,197
25	72	$98,711	74	9	$9,957
26	90	$131,731	75	7	$20,066
27	83	$164,078	76	3	$8,163
28	100	$202,568	77	2	$966
29	92	$161,656	78	2	$4,812
30	107	$270,188	79	2	$497
31	132	$350,968	80	6	$13,693
32	94	$204,352	81	4	$8,512
33	102	$265,940	82	1	$1,606
34	103	$316,905	83	4	$4,543
35	113	$221,201	84	2	$774
36	127	$305,041	85	2	$14,515
37	669	$570,528	86	0	$0
38	137	$348,780	87	0	$0
39	137	$246,859	88	0	$0
40	114	$314,617	89	0	$0
41	141	$288,057	90	0	$0
42	101	$269,775	91	0	$0
43	111	$365,299	92	0	$0
44	107	$272,310	93	0	$0
45	131	$403,821	94	0	$0
46	114	$354,327	95	0	$0
47	125	$365,090	96	0	$0
48	152	$505,322	97	0	$0
49	113	$337,347	98	0	$0
50	111	$334,239	99	0	$0
51	117	$412,098	100	0	$0
52	129	$467,619	101	0	$0
53	129	$451,775	102	0	$0
54	152	$531,877	103	0	$0
55	121	$497,163	104	0	$0
56	120	$536,584	105	0	$0
57	139	$506,701	106	0	$0
58	128	$437,054	107	0	$0
59	109	$466,925	108	0	$0
60	78	$322,141	109	0	$0
61	82	$315,832	110	0	$0
62	69	$272,065	111	0	$0
63	67	$231,072	112	0	$0
64	43	$206,065	113	0	$0
65	39	$167,281	114	0	$0
66	29	$111,661	115	0	$0
67	35	$106,116	116	0	$0
68	22	$98,439	117	0	$0
69	19	$57,278	118	0	$0
70	13	$47,765	119	0	$0
71	12	$15,777	120	0	$0
72	13	$27,994			
			Totals	5,393	$14,241,252

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Non-Vested Members as of June 30, 2010



APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

A. Long-Term Assumptions Used to Determine Plan Costs and Liabilities

1. Demographic Assumptions

a. Healthy Retirees, Beneficiaries and Non-Retired Members

RP-2000 Combined Healthy Male and Female Mortality Tables projected to 2015 with scale AA.

Sample Rates of Healthy Mortality		
Age	**Male**	**Female**
50	0.163%	0.130%
55	0.241%	0.241%
60	0.530%	0.469%
65	1.031%	0.900%
70	1.770%	1.553%
75	3.062%	2.492%
80	5.536%	4.129%
85	9.968%	7.076%
90	17.271%	12.588%

b. Disabled Inactive Mortality

RP-2000 Combined Healthy Male and Female Mortality Tables with no projections.

Sample Rates of Disabled Inactive Mortality		
Age	**Male**	**Female**
50	0.241%	0.168%
55	0.362%	0.272%
60	0.675%	0.506%
65	1.274%	0.971%
70	2.221%	1.674%
75	3.783%	2.811%
80	6.437%	4.588%
85	11.076%	7.745%
90	18.341%	13.168%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

c. Rates of Active Disability

Sample Rates of Active Disability	
Age	Rate
22	0.00%
27	0.01%
32	0.01%
37	0.04%
42	0.10%
47	0.13%
52	0.25%
57	0.36%
62	0.00%

All disabilities are assumed to be permanent and without recovery.

d. Termination of Employment (Prior to Normal Retirement Eligibility)

Service	Rate
0	25%
1	20%
2	15%
3	10%
4	10%
5-9	5%
10-14	5%
15 & over	2%

No terminations are assumed after age 50 with 5 years of service for either male or female.

e. Probability of Electing a Refund of Member Contributions Upon Termination

Probability of Electing Refund		
Age at Term.	Non-Vested	Vested
Under 35	100%	60%
35-39	100%	50%
40-44	100%	45%
45-49	100%	35%
50 & Over	100%	30%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

f. Retirement

Annual Retirement Rates		
Age	**<30 years**	**30 years or more and age 60 with 25 years**
<50	0.00%	10.00%
50 – 54	3.00	10.00
55	3.00	15.00
56	4.00	15.00
57	5.00	15.00
58	5.00	15.00
59	6.00	15.00
60	8.00	15.00
61	15.00	15.00
62	25.00	25.00
63	15.00	15.00
64	15.00	15.00
65	30.00	30.00
66	30.00	30.00
67	25.00	25.00
68	25.00	25.00
69	25.00	25.00
70 & Over	100.00	100.00

Vested terminations are assumed to retire at their earliest unreduced eligibility.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

g. Merit/Seniority Salary Increase (in addition to across-the-board increase)

Service based table plus an annual inflation rate of 4.00% (rates shown below exclude amount for inflation).

Service	Annual Increase
1	6.0%
2	4.9
3	3.9
4	3.1
5	2.4
6	1.8
7	1.4
8	1.0
9	0.7
10	0.5
11-15	0.3
16-20	0.1
21 & over	0.0

h. Family Composition

Female spouses are assumed to be three years younger than males.

100% of non-retired members are assumed married for both male and female members.

Actual marital characteristics are used for pensioners.

i. Vested Benefits for Terminated Members

Vested benefits for members who terminated during years ending June 30, 2009 and later were estimated based upon compensation and service information in the census data. For members who terminated prior to June 30, 2008, vested benefits valued were the same as had been calculated by the prior actuary for the June 30, 2008 actuarial valuation.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

2. Economic Assumptions

a.	Rate of Investment Return:	7.75%
b.	Rate of Wage Inflation:	4.00%
c.	Interest on Member Contributions:	3.50%
d.	Rate of Increase in Total Payroll (for Amortization):	4.00%

3. Changes Since Last Valuation

The demographic and economic assumptions were updated to reflect the 2009 experience study. The prior assumptions are listed below for those assumptions where changes were made:

a. Demographic Assumptions

i. Healthy Retirees, Beneficiaries and Non-Retired Members

Male: Male UP-1994 Mortality Table set back one year.
Female: Female UP-1994 Mortality Table set back one year.

Sample Rates of Healthy Mortality

Age	Male	Female
50	0.250%	0.141%
55	0.428%	0.224%
60	0.762%	0.415%
65	1.391%	0.819%
70	2.336%	1.367%
75	3.661%	2.192%
80	6.007%	3.802%
85	9.636%	6.557%
90	14.995%	11.247%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

ii. Disabled Inactive Mortality

Male: IRS Revenue Ruling 96-7, Male Table set back three years.
Female: IRS Revenue Ruling 96-7, Female Table set forward one year.

Sample Rates of Disabled Inactive Mortality		
Age	**Male**	**Female**
50	2.085%	1.697%
55	2.587%	1.976%
60	3.194%	2.344%
65	3.933%	2.828%
70	4.900%	3.492%
75	6.468%	4.710%
80	8.522%	6.346%
85	10.971%	9.015%
90	14.405%	13.322%

iii. Rates of Active Disability

Sample Rates of Active Disability		
Age	**Male**	**Female**
22	0.00%	0.00%
27	0.01%	0.01%
32	0.01%	0.01%
37	0.06%	0.03%
42	0.09%	0.15%
47	0.17%	0.15%
52	0.36%	0.30%
57	0.62%	0.36%
62	0.00%	0.00%

All disabilities are assumed to be permanent and without recovery.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

iv. Termination of Employment (Prior to Normal Retirement Eligibility)

Refer to the 15-year Select (age- and service-based) & Ultimate (age-based) tables below.*****

Male members:

	Service:							
Age Select:	0	1	2	3	4	5-9	10-14	15 & Over
<30	30%	25%	16%	14%	10%	6%	3%	0%
30-39	22	15	12	10	8	6	3	2
40>	15	12	10	8	6	5 *	3 *	2 *

Female members:

	Service:							
Age Select:	0	1	2	3	4	5-9	10-14	15 & Over
<30	30%	25%	16%	14%	10%	5%	4%	0%
30-39	22	16	14	11	8	5	4	2
40>	18	13	10	9	8	5*	3*	2*

* No other terminations of employment are assumed after attainment of age 55 with 5 years of service.

v. Probability of Electing a Refund of Member Contributions Upon Termination

	Probability of Electing Refund	
Age at Term.	Non-Vested	Vested
Under 35	100%	50%
35-39	100%	40%
40-44	100%	40%
45-49	100%	35%
50 & Over	100%	30%

vi. Retirement

The 30 years or more of service was changed to include participants age 60 with 25 years

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

vii. Merit/Seniority Salary Increase (in addition to across-the-board increase)

Service based table plus an annual inflation rate of 4.25% (rates shown below exclude amount for inflation).

b. Economic Assumptions

i.	Rate of Investment Return:	8.00%
ii.	Rate of Wage Inflation:	4.25%
iii.	Interest on Member Contributions:	5.00%
iv.	Rate of Increase in Total Payroll (for Amortization):	4.25%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method

The Entry Age Normal Actuarial Cost method is used to determine costs. Under this funding method, a normal cost is determined as a level percent of pay individually for each active member.

The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future normal costs. The difference between this liability and funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The portion of the actuarial accrued liability in excess of plan assets is amortized to develop an additional cost or savings which is added to each year's employer normal cost. Under this cost method, actuarial gains and losses are directly reflected in the size of the unfunded actuarial liability.

2. Actuarial Value of Assets

For purposes of determining the unfunded actuarial accrued liability, we use an actuarial value of assets. The asset adjustment method dampens the volatility in asset values that could occur because of fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

The actuarial value of assets is the current market value, adjusted by a four-year smoothing of gains and losses on a market value basis. Each year's gain or loss is determined as the difference between the actual market return and the expected market return using the assumed rate of investment return.

3. Amortization Method

The unfunded actuarial accrued liability is amortized as a level percentage of future payroll.

4. Changes Since Last Valuation

None.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

C. Plan Choice Rate Calculations

The current employer Plan Choice Rate for members of the Defined Contribution Retirement Plan (DCRP) and the Optional Retirement Plan (ORP) who would have been in PERS is determined as follows:

	Percent of Salary
Plan Choice Rate to DBRP (PCR)	2.370%
Additional PCR Contribution	
FY2008 (July 1, 2007)	0.135
FY2010 (July 1, 2009)	0.135
Total Plan Choice Contribution Rate	**2.640%**

The Plan Choice Rate (PCR) is the percent of the employer contribution allocated to the Defined Benefit Retirement Plan for members who choose the Defined Contribution Retirement Plan or the Optional Retirement Plan. The PCR is required by statute and actuarially determined to maintain the financial stability of the Defined Benefit Retirement Plan (DBRP).

Without the PCR, there are two reasons the DBRP costs could potentially increase; one is the financing of the Unfunded Actuarial Liability (UAL) at the time of the transfers, and the other is the potential for an increase in the Normal Cost Rate.

1. The PCR provides that the amortization of the DBRP UAL at the time of the transfer is financed over the sum of payroll of the DBRP and DCRP members. This method ensures a continuation of the amortization schedule that was in place just prior to the transfers. The legislation provided a starting point for this element of the PCR equal to 2.37% of the payroll of DCRP members and the ORP members who would have been in the DBRP.

2. Compared to the members who remain in the DBRP, if the transferring DCRP and ORP members are, on average, either younger at the time of hire, or have a shorter career, the DBRP Normal Cost Rate could increase. The dollar amount of the increase in the DBRP Normal Cost is financed as a percentage of DCRP and ORP payroll. Therefore, the employers whose employees choose the DCRP and ORP will fund any increase in the Normal Cost of the DBRP. This rate is known as the PCR Normal Cost Rate (PCR-NCR).

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Amortization Test: The current PCR, less the PCR-NCR, will be available to amortize the remaining PCR-UAL. The initial amortization period was set at 12.75 years as of June 30, 1998. The amortization period will decline by one year each biennium, but the PCR will not change unless the amortization period is more than 10 years different than the scheduled amortization period.

Amortization of PCR-UAL

	Baseline	Acceptable Range	
1998 Valuation	12.75	2.75	22.75
2000 Valuation	11.75	1.75	21.75
2002 Valuation	10.75	0.75	20.75
2004 Valuation	9.75	n/a*	19.75
2006 Valuation	8.75	n/a*	18.75
2008 Valuation	7.75	n/a*	17.75
2010 Valuation	6.75	n/a*	16.75
2012 Valuation	5.75	n/a*	15.75
2014 Valuation	4.75	n/a*	14.75
2016 Valuation	3.75	n/a*	13.75
2018 Valuation	2.75	n/a*	12.75
2020 Valuation	1.75	n/a*	11.75
2022 Valuation	0.75	n/a*	10.75

*Assumes immediate amortization of PCR UAL.
Lower end only applies after 2002 if the PCR UAL is fully amortized.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

1. Membership

The Plan is a multiple-employer cost sharing plan that covers employees of the State, local governments, and certain employees of the university system and school districts, who are not covered by a separate retirement system governed by Title 19 of Montana Code Annotated.

2. Member Contributions

Members contribute 6.9% of their compensation. Interest is credited at rates determined by the Board.

Member contributions are made through an "employer pick-up" arrangement which results in deferral of taxes on the contributions.

Employers contribute 6.9% of each member's compensation, increased to 7.035% on July 1, 2007 and 7.17% on July 1, 2009. This is offset by a 0.1% of compensation from the State for local governments and school districts, increased to 0.235% on July 1, 2007 and 0.37% on July 1, 2009 for school districts. These increased contributions and offsets as of 2007 and 2009 will terminate if an actuarial valuation shows that the period required to amortize the system's unfunded liabilities is less than 25 years, and that the termination of those increases would not cause the amortization to increase beyond 25 years.

3. Service Credit

Service used to determine the amount of retirement benefit. One month of service credit is earned for each month where the member is paid for 160 hours. This includes certain transferred and purchased service.

4. Membership Service

Service used to determine eligibility for vesting, retirement or other PERS benefits. One month of membership service is earned for any month member contributions are made to PERS, regardless of the number of hours worked.

5. Highest Average Compensation

Highest Average Compensation is the average of any 36 consecutive months (or shorter period of total service) of compensation paid to the member. Compensation generally means all remuneration paid, excluding certain allowances, benefits and lump sum payments.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

6. Normal Retirement

Eligibility: (i) age 60 with five years of membership service; or (ii) age 65 regardless of service; or (iii) any age with 30 years of membership service.

Benefit: (i) If less than 25 years of membership service, the greater of (a) 1/56 of highest average compensation multiplied by years of service credit, or (b) the actuarial equivalent of double the member's regular contributions plus interest plus the actuarial equivalent of any additional contributions plus interest.

(ii) If 25 years of membership service or more, 1/50 of highest average compensation multiplied by years of service credit, or (b).

7. Early Retirement

Eligibility: (i) age 50 with 5 years of membership service; or (ii) any age with 25 years of membership service.

Benefit: Normal retirement benefit calculated using highest average compensation and service at early retirement, and reduced for each month which retirement age precedes the earlier of age 60 or the attainment of 30 years of service by 0.5% for the first 60 months and 0.3% for the next 60 months.

8. Disability Benefit

Eligibility: Five years of membership service

Benefit: (i) If hired on or before February 24, 1991, the greater of (a) or (b):

(a) Less than 25 years of membership service: 90% of 1/56 of highest average compensation multiplied by service credit.

At least 25 years of membership service: 90% of 1/50 of highest average compensation multiplied by service credit, or

(b) 25% of highest average compensation.

(ii) If hired after February 24, 1991:

90% is replaced by 100% in the above formulas, but there is no 25% minimum benefit.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

9. Survivor's Benefit

Eligibility: (i) active, (ii) within 6 months after severance, (iii) receiving disability benefit for less than 6 months, (iv) continuously disabled without receiving a disability benefit, or (v) inactive.

Benefit: The sum of (i) accumulated contributions plus (ii) monthly compensation multiplied by the lesser of service credit or six, plus (iii) interest. However an inactive member will receive only accumulated contributions.

For an active member who had completed five years of membership service, the benefit will be the actuarial equivalent of the accrued retirement benefit at the time of death subject to the minimum in the above paragraph.

A beneficiary may elect to receive the payment as an annuity that is the actuarial equivalent of the amount of benefit.

For retired members receiving the normal form of annuity, a payment will be made equal to the accumulated contributions reduced by any retirement benefits already paid.

10. Vesting

Eligibility: Five years of membership service.

Benefit: Accrued normal retirement benefit, payable at age 60. In lieu of a pension, a member may receive a refund of accumulated contributions. Upon receipt of a refund of contributions a member's vested right to a monthly benefit is forfeited.

11. Withdrawal of Employee Contributions

Eligibility: Terminates service and is not eligible for other benefits.

Benefit: Accumulated employee contributions.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

12. Form of Payment

The normal form of payment is a life annuity with a refund of any remaining account balance to a designated beneficiary. (Option 1)

Optional benefits: (i) Option 2, a joint and 100% survivor benefit, (ii) Option 3, a joint and 50% survivor benefit, and (iii) Option 4, a life annuity with a period certain. If a retiring member selects Option 2 or 3 and the designated beneficiary predeceases the member, the benefit reverts to the higher Option 1 benefit available at retirement if the retiree provides notification within 18 months.

13. Post Retirement Benefit Increases

For retired members who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year equal to (i) 3% for members hired before July 1, 2007 and (ii) 1.5% for members hired on or after July 1, 2007. Ad hoc adjustments may be made to assure that the current benefit is no less than 75% of the purchasing power of the original benefit.

14. Changes Since Last Valuation

None.