



**Game Wardens' and Peace Officers'
Retirement System
of the
State of Montana**

**Actuarial Valuation
as of June 30, 2010**

Produced by **Cheiron**

October 2010

Table of Contents

Letter of Transmittal	i
Foreword	ii
Section I – Board Summary	1
Section II – Assets	9
Section III – Liabilities	15
Section IV – Contributions	20
Section V – Accounting Statement Information	23
Appendix A – Membership Information	28
Appendix B – Actuarial Assumptions and Methods	40
Appendix C – Summary of Plan Provisions	49

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 Game Wardens' and Peace Officers' 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.

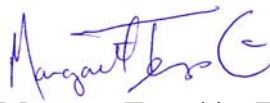
Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification 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.

I hereby certify that, to the best of my 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 a Members of the American Academy of Actuaries, I meet the Qualification Standards to render the opinions contained herein.

Sincerely,
Cheiron



Stephen T. McElhaney, FSA
Consulting Actuary



Margaret Tempkin, FSA
Consulting Actuary



**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

FOREWORD

Cheiron has performed the actuarial valuation of the Game Wardens' and Peace Officers' 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.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION I
BOARD SUMMARY

General Comments

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

At the June 30, 2009 valuation, the statutory contribution rates were not sufficient to amortize the unfunded actuarial liability. As of June 30, 2010 the statutory contribution rates are still not sufficient to amortize the unfunded actuarial liability. During the year ended June 30, 2010, the System's assets gained 12.21% 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 0.55%. This return was below the assumed rate of return of 8.0% and resulted in an actuarial loss on investments of \$7.1 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 experience loss added \$0.8 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. There was an additional loss on the System's liabilities of \$10.1 million due to the assumption changes that resulted from the 2009 experience study, resulting in a total loss on System liabilities equal to \$10.9 million.

As of the June 30, 2010 actuarial valuation, the System's unfunded actuarial liability was \$28.7 million. This is an increase from last year's unfunded actuarial liability of \$11.0 million. The funded ratio decreased from 88% at the prior valuation to 75% 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 \$11.0 million less than actuarial value. If market value were used rather than actuarial value, the funded ratio on the valuation date would be 65.11%, and the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability.

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.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I
BOARD SUMMARY**

Table I-1 Montana Game Wardens' and Peace Officers' Retirement System Summary of Assumption Changes		
	Previous Assumptions June 30, 2010	New Assumptions June 30, 2010
Valuation as of:		
Actuarial Accrued Liability (AL)	\$ 103,755,170	\$ 113,854,880
Actuarial Value of Assets (AVA)	<u>85,150,605</u>	<u>85,150,605</u>
Unfunded AL	\$ 18,604,565	\$ 28,704,275
Funded ratio	82.07%	74.79%
Amortization period for statutory funding rate	Does not amortize	Does not amortize
30-year Level Funding Rate	21.27%	23.03%
Shortfall (surplus) from statutory rate	1.71%	3.47%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I
BOARD SUMMARY**

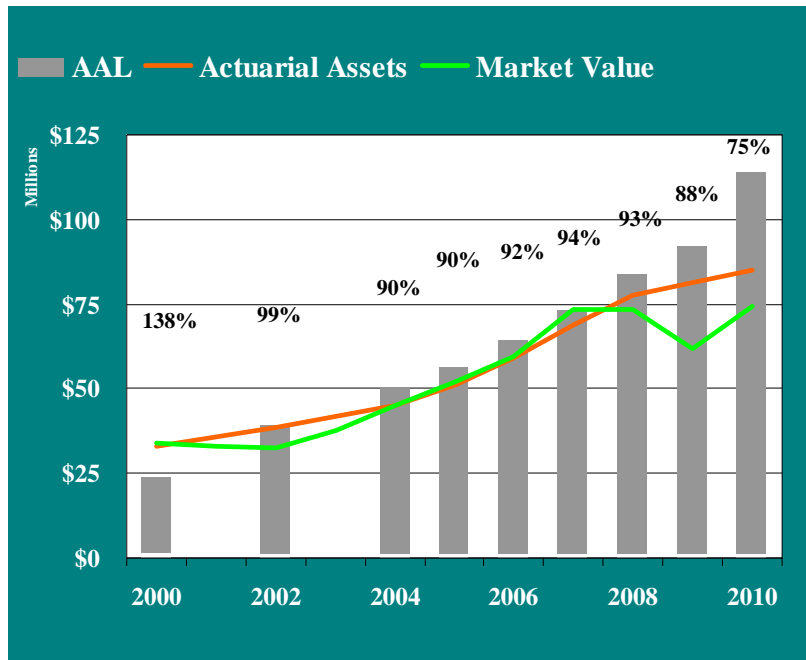
Trends

Assets and Liabilities

The market value of assets (MVA) increased over last year, gaining 12.21% 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, 2004 to June 30, 2010 the System's assets returned approximately 5.4% per year measured at actuarial value, compared to a valuation assumption of 8% per year.

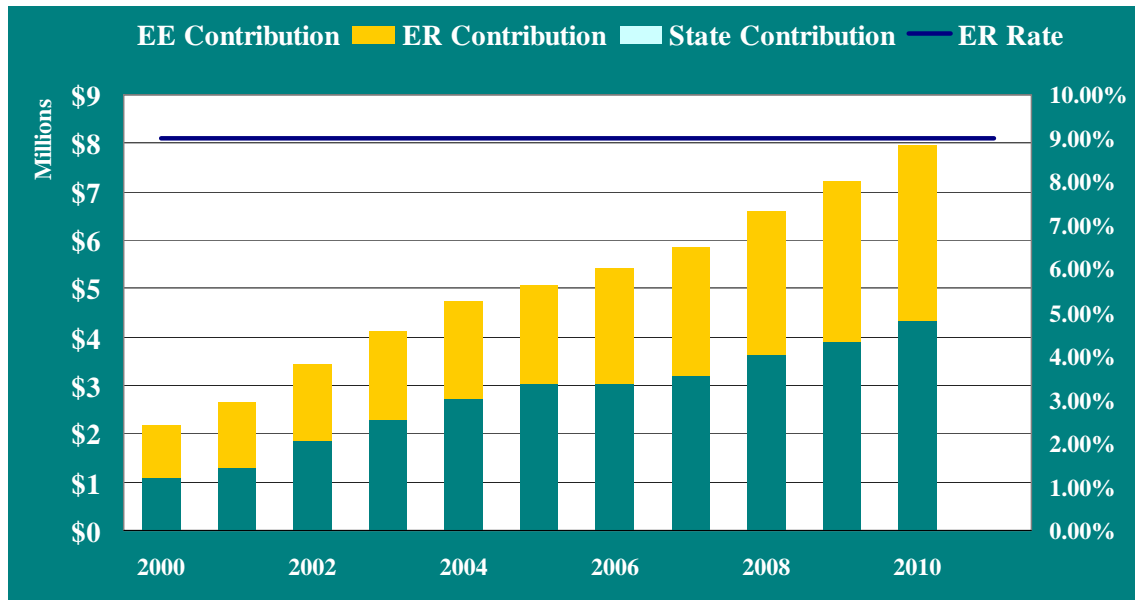
For funding purposes, the target amount is represented by the top of the gray bar. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.



**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I
BOARD SUMMARY**

Contribution Rates



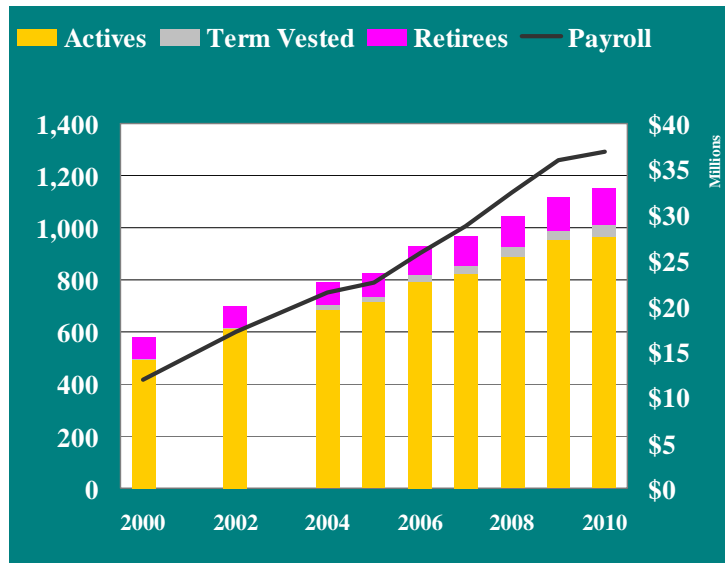
The stacked bars in this graph show the contributions made by members, employers and the State (left hand scale). The black line shows the employer contribution rate as a percent of payroll (right hand scale).

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 5.9 actives for each inactive in 2000 to 5.3 actives for each inactive today.

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



MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

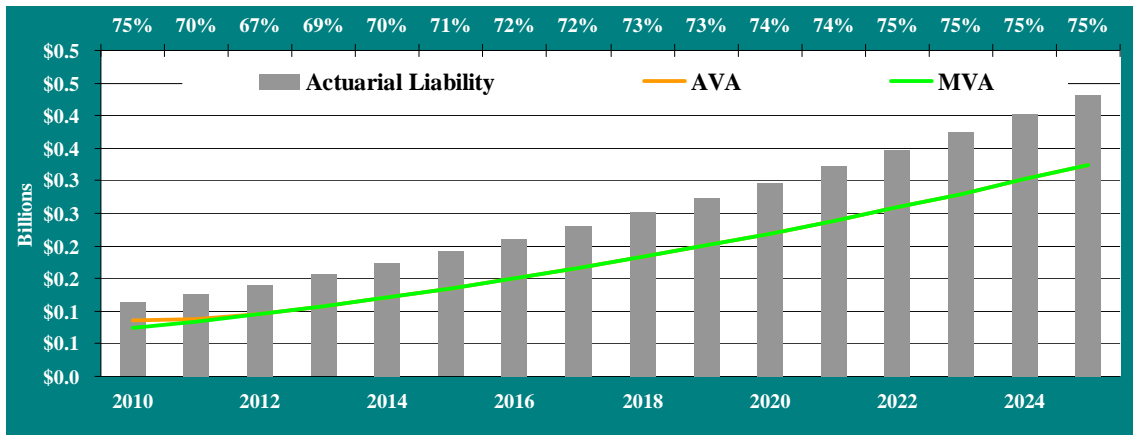
SECTION I
BOARD SUMMARY

Future Outlook

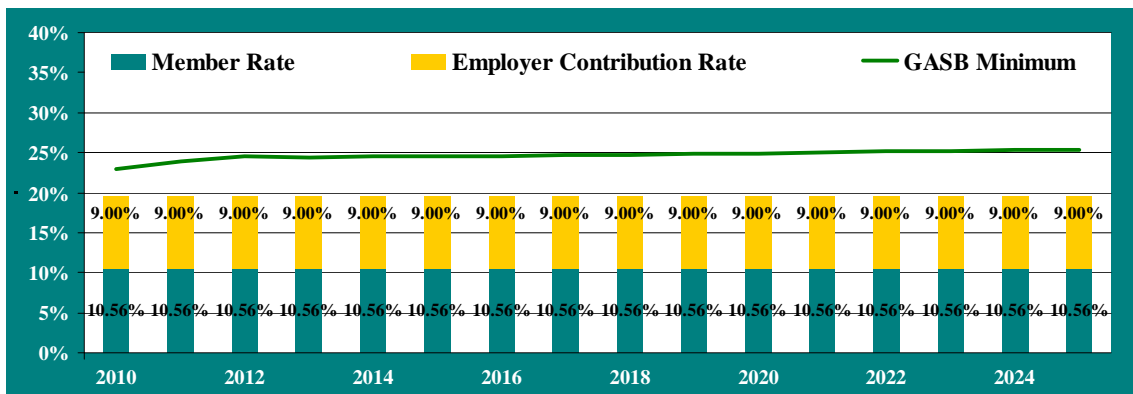
Base Line Projections

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 increase gradually over the remainder of the period.



The chart below shows that the total contribution computed on a GASB Minimum basis will increase to about 25% over the next several years and remain above the statutory rates for the remainder of the fifteen-year period.

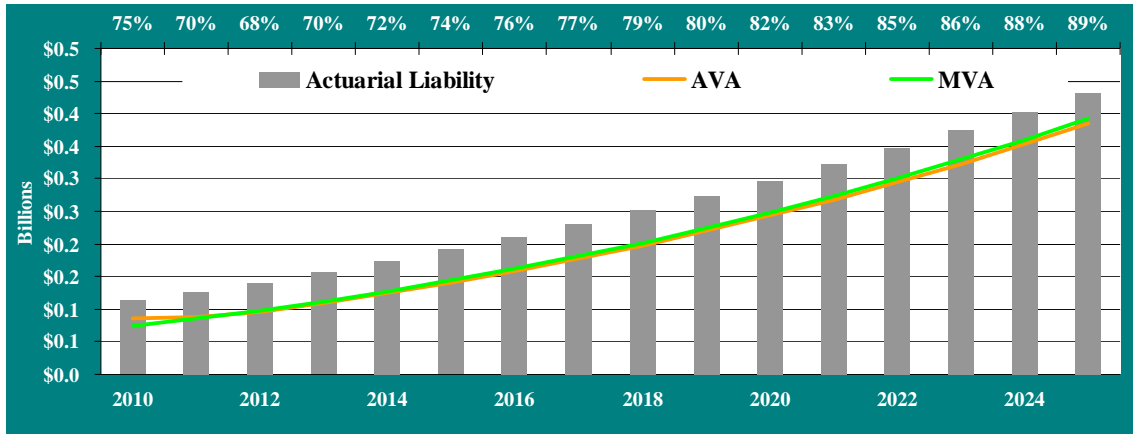


**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

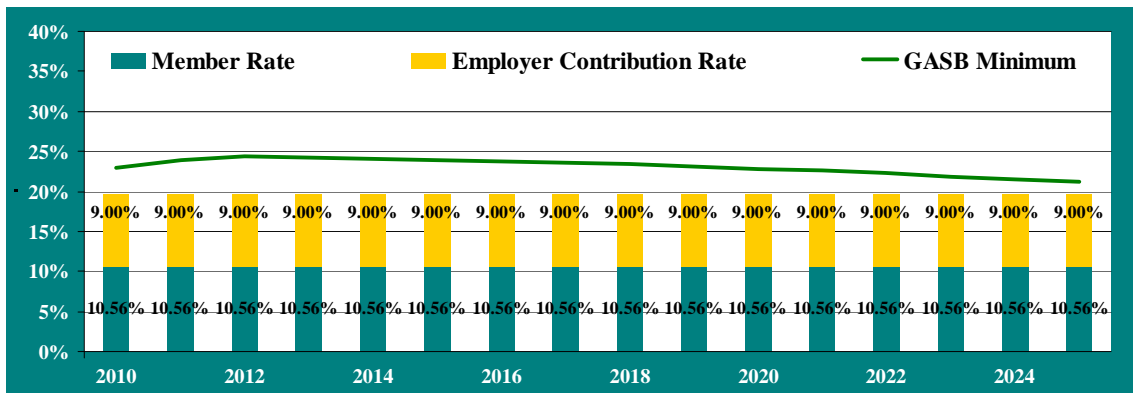
**SECTION I
BOARD SUMMARY**

Projections With Asset Returns of 9.25%

The future funding status of this System will be largely driven by the investment earnings. Relatively minor changes in market returns can have significant effects on the System's status. 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).



The funded status eventually approaches 90% after a decrease over the next two years. The GASB Minimum contribution remains slightly above the statutory contribution by the end of the fifteen-year period.

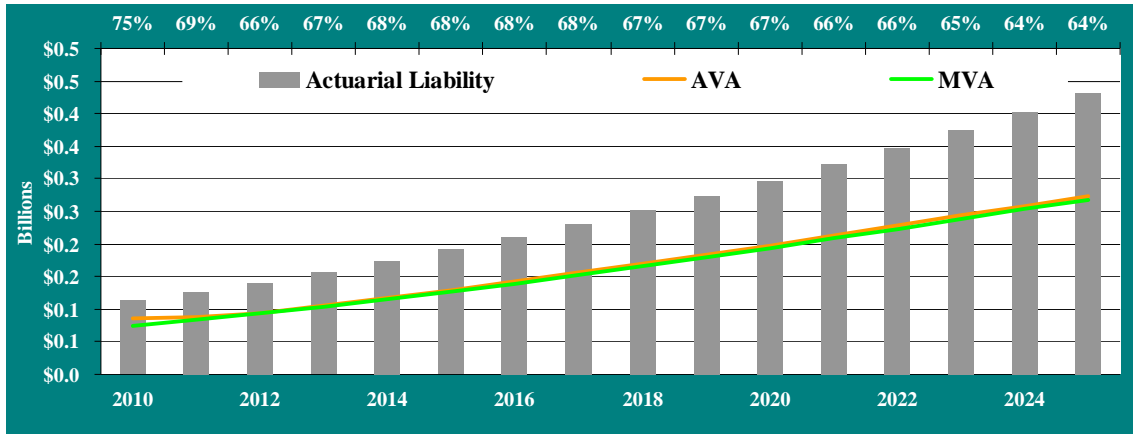


**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

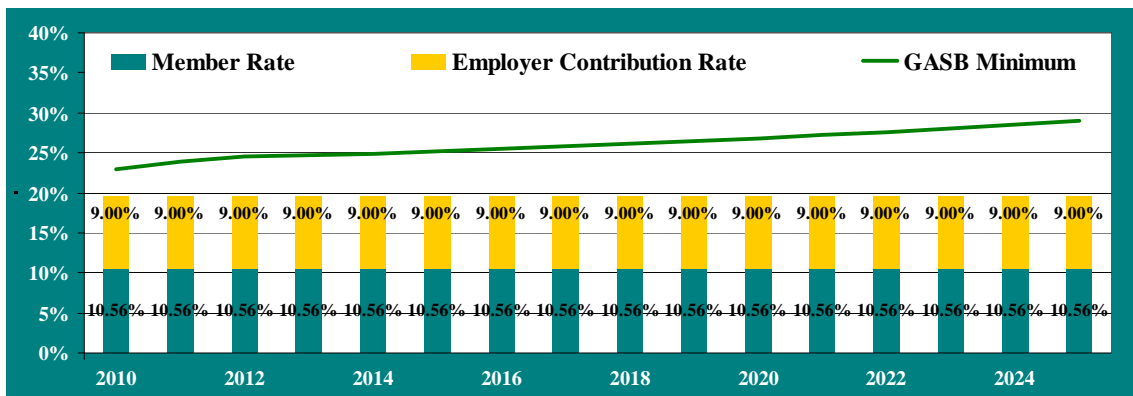
**SECTION I
BOARD SUMMARY**

Projections With Asset Returns of 6.25%

To further demonstrate how the future funding of this System will be driven by investment earnings, 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 decreases throughout the fifteen-year period and the GASB Minimum contribution approaches 30% of pay.



MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION I
BOARD SUMMARY

<p style="text-align: center;">Table I-2 Montana Game Wardens' and Peace Officers' Retirement System Summary of Principal System Results</p>			
Valuation as of:	June 30, 2009	June 30, 2010	% Change
<u>Participant Counts</u>			
Active Members	950	966	1.7%
Disabled Members*	0	0	N/A
Retirees and Beneficiaries*	127	136	7.1%
Terminated Vested Members	40	47	17.5%
Terminated Non-Vested Members	103	100	(2.9%)
Total**	1,220	1,249	2.4%
Annual Salaries of Active Members*	\$ 36,869,191	\$ 39,291,321	6.6%
Average Annual Salary	\$ 38,810	\$ 40,674	4.8%
Annual Retirement Allowances for Retired Members and Beneficiaries	\$ 2,513,477	\$ 2,710,723	7.8%
<u>Assets and Liabilities</u>			
Actuarial Accrued Liability (AAL)	\$ 92,155,438	\$ 113,854,880	23.5%
Actuarial Value of Assets (AVA)	81,176,976	85,150,605	4.9%
Unfunded AAL	\$ 10,978,462	\$ 28,704,275	161.5%
Funded Ratio (AVA/AAL)	88.09%	74.79%	
Present Value of Accrued Benefits (PVAB)	\$ 71,453,776	\$ 83,789,652	17.3%
Market Value of Assets	61,881,766	74,135,714	19.8%
Unfunded PVAB	\$ 9,572,010	\$ 9,653,938	0.9%
Accrued Benefit Funding Ratio	86.60%	88.48%	
Ratio of Actuarial Value to Market Value	131.18%	114.86%	
<u>Contributions as a Percentage of Payroll</u>			
Statutory Funding Rate	19.560%	19.560%	
Normal Cost Rate	18.530%	19.260%	
Available for Amortization of UAL	1.030%	0.300%	
Period to Amortize	Does not amortize	Does not amortize	
Projected 30-year Level Funding Rate	20.250%	23.030%	
Projected Shortfall (Surplus)	0.690%	3.470%	

* Based on PERA categorization for the annual report. For actuarial valuation purposes, 10 members in 2009 and 2010 were valued as disabled members with offsetting reductions to the number of retired members.

** A reconciliation of participant counts 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 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.

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MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION II
ASSETS

Table II-1 Changes in Market Values		
Value of Assets – June 30, 2009		\$ 61,881,766
<u>Additions</u>		
Member Contributions	\$ 4,333,884	
Employer Contributions	3,612,040	
State Contributions	0	
Investment Return	7,884,617	
Other	<u>6,148</u>	
Total Additions	\$ 15,836,689	
<u>Deductions</u>		
Benefit Payments	\$ 3,521,479	
Administrative Expenses	<u>61,262</u>	
Total Deductions	\$ 3,582,741	
Value of Assets – June 30, 2010		\$ 74,135,714

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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	\$ 61,881,766
Employer Contributions	\$ 7,952,072
Benefit Payments	(3,521,479)
Expected Return at 8.0%	<u>5,124,356</u>
Expected Value at June 30, 2010	\$ 71,436,715
Actual Value at June 30, 2010	\$ 74,135,714
Investment Gain/(Loss)	\$ 2,698,999

Table II-3 Develop Excluded Gain/(Loss)		
	Total Gain/(Loss)	Excluded Portion
Exclude 75% of 2010 Gain/(Loss)	\$ 2,698,999	\$ 2,024,250
Exclude 50% of 2009 Gain/(Loss)	\$ (21,220,281)	\$ (10,610,140)
Exclude 25% of 2008 Gain/(Loss)	\$ (9,716,000)	\$ (2,429,000)
Total Excluded Gain/(Loss) for AVA Calculation		\$ (11,014,891)

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION II
ASSETS**

Table II-4 Actuarial Value of Assets	
Market Value of Assets – June 30, 2010	\$ 74,135,714
Total Gain/(Loss) excluded	<u>(11,014,891)</u>
Actuarial Value of Assets – June 30, 2010	\$ 85,150,605

Investment Performance

The market value of assets (MVA) returned 12.21% during 2010, which is greater than the assumed 8% return. A return of (0.55%) 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
2005	7.92%	6.15%
2006	8.61%	9.16%
2007	17.78%	11.50%
2008	(4.87%)	7.31%
2009	(20.23%)	(0.22%)
2010	12.21%	(0.55%)

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION II
ASSETS**

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

Year Beginning July 1,	Expected Benefit Payments	Expected Contributions*
2010	\$ 4,139,879	\$ 8,214,626
2011	4,127,086	8,543,211
2012	4,448,903	8,884,939
2013	4,784,630	9,240,337
2014	5,218,999	9,609,950
2015	5,825,721	9,994,348
2016	6,399,067	10,394,122
2017	7,212,485	10,809,887
2018	8,060,163	11,242,283
2019	9,025,273	11,691,974

* 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.

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**.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

**SECTION III
LIABILITIES**

Table III-1		
Liabilities/Net (Surplus)/Unfunded		
	June 30, 2009	June 30, 2010
<u>Present Value of Benefits</u>		
Active Participant Benefits	\$ 116,295,524	\$ 141,533,696
Retiree and Inactive Benefits	31,829,276	35,641,652
Present Value of Benefits (PVB)	\$ 148,124,800	\$ 177,175,348
Market Value of Assets (MVA)	\$ 61,881,766	\$ 74,135,714
Future Member Contributions	33,308,505	35,743,069
Future Employer Contributions	28,387,930	30,462,843
Funding Shortfall/(Surplus)	24,546,599	36,833,722
Total Resources	\$ 148,124,800	\$ 177,175,348
<u>Actuarial Accrued Liability</u>		
Present Value of Benefits (PVB)	\$ 148,124,800	\$ 177,175,348
Present Value of Future Normal Costs (PVFNC)	55,969,000	63,320,468
Actuarial Accrued Liability (AAL=PVB-PVFNC)	92,155,800	113,854,880
Actuarial Value of Assets (AVA)	81,176,976	85,150,605
Net (Surplus)/Unfunded (AAL – AVA)	\$ 10,978,824	\$ 28,704,275
<u>Present Value of Accrued Liability</u>		
Present Value of Benefits (PVB)	\$ 148,124,800	\$ 177,175,348
Present Value of Future Benefit Accruals (PVFBA)	76,671,024	93,385,696
Present Value of Accrued Liability (PVAB=PVB-PVFBA)	71,453,776	83,789,652
Market Value of Assets (MVA)	61,881,766	74,135,714
Net Unfunded (PVAB – MVA)	\$ 9,572,010	\$ 9,653,938

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

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.

Table III-2			
(In Thousands)	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Liability
Liabilities June 30, 2009	\$ 148,124,800	\$ 92,155,438	\$ 71,453,776
Liabilities June 30, 2010	177,175,348	113,854,880	83,789,652
Liability			
Increase (Decrease)	29,050,548	21,699,442	12,335,876
Change Due to:			
Actuarial (Gain)/Loss	NC*	822,070	NC*
Assumption Changes	17,567,433	10,099,710	2,195,301
Benefits Accumulated and Other Sources	11,483,115	10,777,662	10,140,575

* NC = not calculated.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION III
LIABILITIES

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

Actuarial Liabilities as of July 1, 2009	\$ 92,155,438
Normal Cost	6,544,039
Actual Benefit Payments	(3,521,479)
Expected Earnings	<u>7,755,102</u>
Expected Actuarial Liability as of July 1, 2010	\$ 102,933,100
 Actual Liability as of July 1, 2010 (before assumption changes)	 \$ 103,755,170
 Liability (Gain)/Loss	 \$ 822,070
 Sources of Liability (Gain)/Loss	
Salary (Gain)/Loss	\$ 252,066
New Participant (Gain)/Loss	450,517
Active Retirements (Gain)/Loss	119,299
Active Terminations (Gain)/Loss	(472,519)
Active Deaths (Gain)/Loss	(109,609)
Active Disability (Gain)/Loss	(19,777)
Inactive Decrements (Gain)/Loss	602,093
 Actual Liability as of July 1, 2010 (after assumption changes)	 \$ 113,854,880
 Liability (Gain)/Loss due to assumption changes	 \$ 10,099,710
 Actuarial Value of Assets as of July 1, 2009	 \$ 81,176,976
Net Cash Flow	4,430,593
Expected Earnings	<u>6,667,972</u>
Expected Actuarial Value of Assets as of July 1, 2010	\$ 92,275,541
 Actual Actuarial Value of Assets as of July 1, 2010	 \$ 85,150,605
 Investment (Gain)/Loss	 \$ 7,124,936
Total Liability (Gain)/Loss	<u>10,921,780</u>
Total Actuarial (Gain)/Loss	\$ 18,046,716

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

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	\$ 31,829,276	\$ 35,641,652
Active Member Benefits	<u>60,326,162</u>	<u>78,213,228</u>
Total Actuarial Liability	\$ 92,155,438	\$ 113,854,880
2. Actuarial Value of Assets	\$ 81,176,976	\$ 85,150,605
3. Unfunded Actuarial Liability	\$ 10,978,462	\$ 28,704,275
4. Funded Ratio	88.09%	74.79%

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	\$ 31,829,276	\$ 35,641,652
Active Members Benefits	<u>60,326,162</u>	<u>78,213,228</u>
Total Actuarial Liability	\$ 92,155,438	\$ 113,854,880
2. Market Value of Assets	\$ 61,881,766	\$ 74,135,714
3. Unfunded Actuarial Liability	\$ 30,273,672	\$ 39,719,166
4. Funded Ratio	67.15%	65.11%

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%.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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	10.560%	10.560%
Employers	9.000%	9.000%
Total	19.560%	19.560%
Normal Cost Rate	18.530%	19.260%
Funding Rate Available for Amortization	1.030%	0.300%
Unfunded Actuarial Liability (Surplus)	10,978,462	28,704,275
Years to Amortize*	Does not amortize	Does not amortize

* On a market value basis, the Years to Amortize the Unfunded Actuarial Liability does not amortize at both June 30, 2009 and at June 30, 2010.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION IV
CONTRIBUTIONS**

Table IV-2		
Calculated Contribution Basis		
	June 30, 2009	June 30, 2010
Normal Cost Rate	18.530%	19.260%
Educational Fund	0.000%	0.000%
Amortization Payment (30-years)	<u>1.720%</u>	<u>3.770%</u>
Total Calculated Contribution Rate	20.250%	23.030%
Less Statutory Rate	<u>19.560%</u>	<u>19.560%</u>
Shortfall (Surplus) in Statutory Rate	0.690%	3.470%

Table IV-3		
Calculated Contribution on Market Value (MCA 19-2-407)		
	June 30, 2009	June 30, 2010
Normal Cost Rate	18.530%	19.260%
Educational Fund	0.000%	0.000%
Amortization Payment (30-years)	<u>4.730%</u>	<u>5.220%</u>
Total Calculated Contribution Rate	23.260%	24.480%
Less Statutory Rate	<u>19.560%</u>	<u>19.560%</u>
Shortfall (Surplus) in Statutory Rate	3.700%	4.920%

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

Table IV-4	
Projected Calculated Contribution Rates	
Valuation Year	Rate
2011	23.87%
2012	24.46%
2013	24.43%
2014	24.48%
2015	24.55%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Accounting 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.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

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	\$ 29,535,640	\$ 32,382,916
b. Former Vested Members	2,293,636	3,258,736
c. Active Members	<u>39,624,500</u>	<u>48,148,000</u>
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	\$ 71,453,776	\$ 83,789,652
3. Assets at Market Value	<u>61,881,766</u>	<u>74,135,714</u>
4. Unfunded Present Value of Accrued Benefits (2 – 3)	\$ 9,572,010	\$ 9,653,938
5. Ratio of Assets to Present Value of Accrued Benefits (3 / 2)	86.60%	88.48%
B. GASB No. 25 Basis		
1. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$ 31,829,276	\$ 35,641,652
2. Actuarial Accrued Liabilities for current employees	<u>60,326,162</u>	<u>78,213,228</u>
3. Total Actuarial Accrued Liability (1 + 2)	\$ 92,155,438	\$ 113,854,880
4. Net Actuarial Assets available for benefits	<u>81,176,976</u>	<u>85,150,605</u>
5. Unfunded Actuarial Accrued Liability (3 – 4)	\$ 10,978,462	\$ 28,704,275

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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% - 7.3%
*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.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

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	\$ (908)	\$ 558	\$ 2,064	\$ (539)	\$ (6,529)	\$ (7,125)
Combined Liability Experience	<u>(171)</u>	<u>(1,260)</u>	<u>(1,430)</u>	<u>(2,013)</u>	<u>1,325</u>	<u>(822)</u>
(Loss)/Gain During Year from Financial Experience	\$ (1079)	\$ (702)	\$ 634	\$ (2,552)	\$ (5,204)	\$ (7,947)
Non-Recurring Items	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(10,100)</u>
Composite Gain (or Loss) During Year	\$ (1079)	\$ (702)	\$ 634	\$ (2,552)	\$ (5,204)	\$ (18,047)

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	\$ 85,151	\$ 113,855	75	\$ 28,704	39,436	73
2009	81,177	92,155	88	10,978	36,023	30
2008	77,511	83,449	93	5,938	32,365	18
2007	68,755	72,992	94	4,237	28,799	15
2006	58,813	64,183	92	5,370	25,846	21
2005	50,961	56,414	90	5,453	22,496	24

*Results prior to 2009 were not developed by Cheiron. Previous years were taken from reports prepared by prior actuary.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

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

Valuation Date June 30,	Active Member Contributions	Retirants & Beneficiaries	Active Member Employer Financed Contributions	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
2010	\$ 26,592	32,383	\$ 54,880	\$ 85,151	100	100	48
2009	23,800	29,536	38,820	81,177	100	100	72
2008	20,574	29,647	33,228	77,511	100	100	82
2007	17,813	27,070	28,109	68,755	100	100	85
2006	15,667	23,890	24,626	58,813	100	100	78
2005	14,416	19,599	22,399	50,961	100	100	76
2004	12,371	18,034	19,905	45,210	100	100	74

*Results prior to 2009 were not developed by Cheiron. Previous years were taken from reports prepared by prior actuary.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

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	966	10	126	47	100	1,249
Disabled members having attained normal retirement age		(10)	10			0
Beneficiaries of Disabled Members						0
Beneficiaries with less than one year of certain payments remaining			-			0
Other Adjustments						0
Participant counts shown in Annual Financial Report	966	0	136	47	100	1,249

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.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Age and Service as of June 30, 2010**

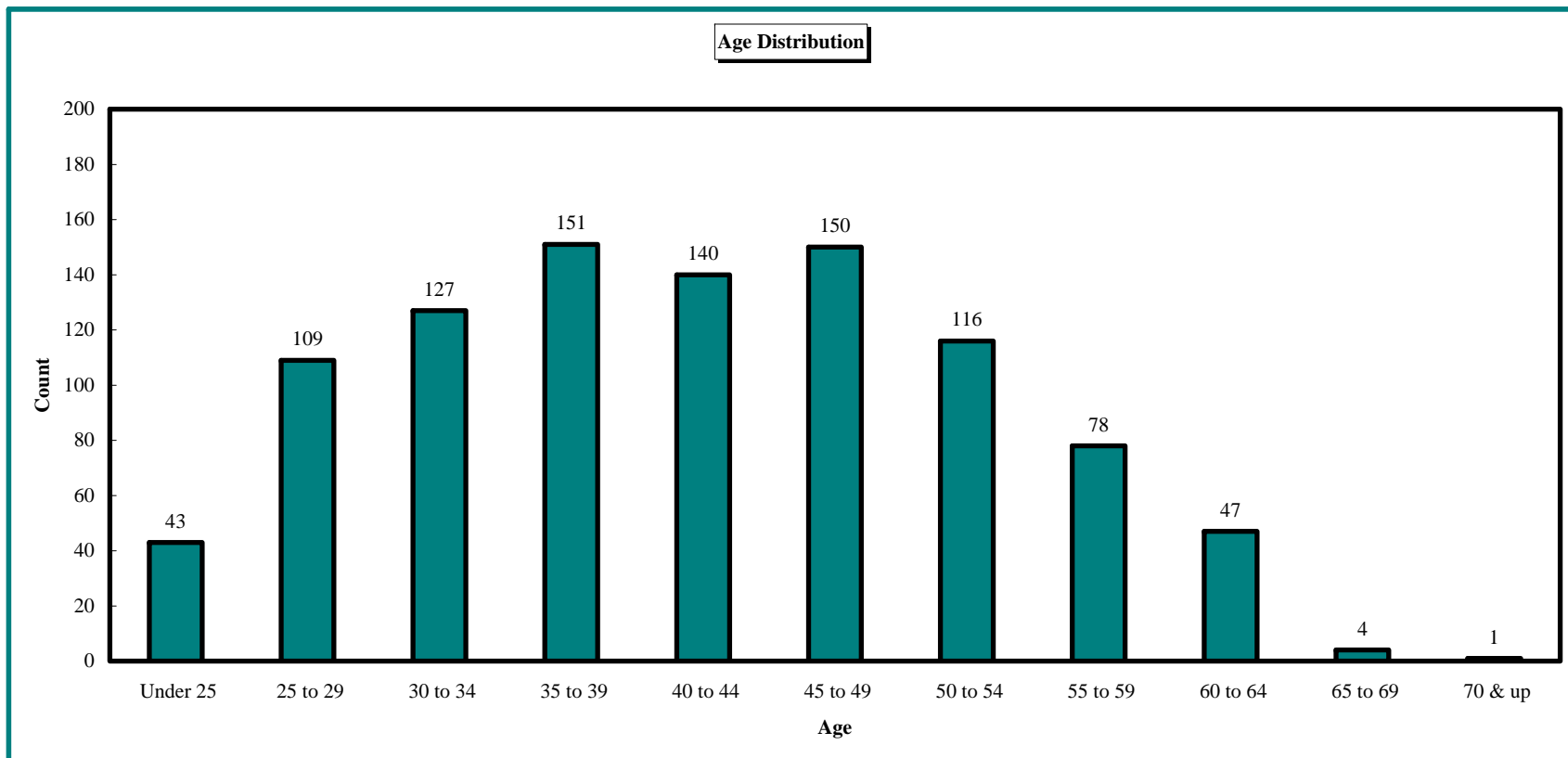
COUNTS BY AGE/SERVICE

Age	Service										Total
	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	
Under 25	13	30	0	0	0	0	0	0	0	0	43
25 to 29	23	75	11	0	0	0	0	0	0	0	109
30 to 34	20	63	37	7	0	0	0	0	0	0	127
35 to 39	19	51	51	26	4	0	0	0	0	0	151
40 to 44	14	42	44	29	9	2	0	0	0	0	140
45 to 49	8	48	43	36	7	4	3	1	0	0	150
50 to 54	13	32	24	28	7	5	5	2	0	0	116
55 to 59	6	21	22	20	3	2	2	1	1	0	78
60 to 64	7	10	13	14	3	0	0	0	0	0	47
65 to 69	0	1	3	0	0	0	0	0	0	0	4
70 & up	0	0	0	1	0	0	0	0	0	0	1
Total	123	373	248	161	33	13	10	4	1	0	966

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

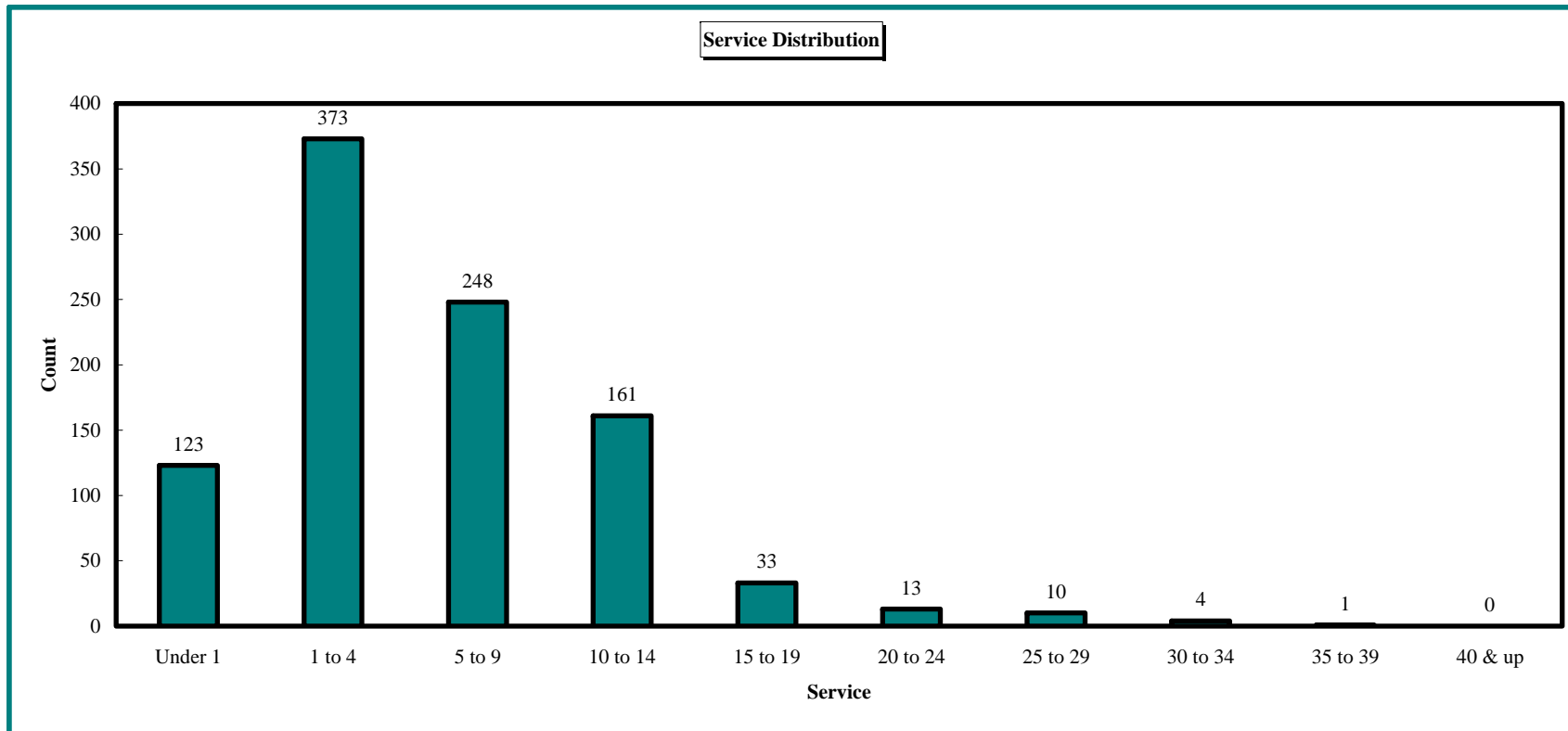
**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Age as of June 30, 2010**



MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Service as of June 30, 2010**



**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Age and Service as of June 30 2010**

AVERAGE SALARY BY AGE/SERVICE

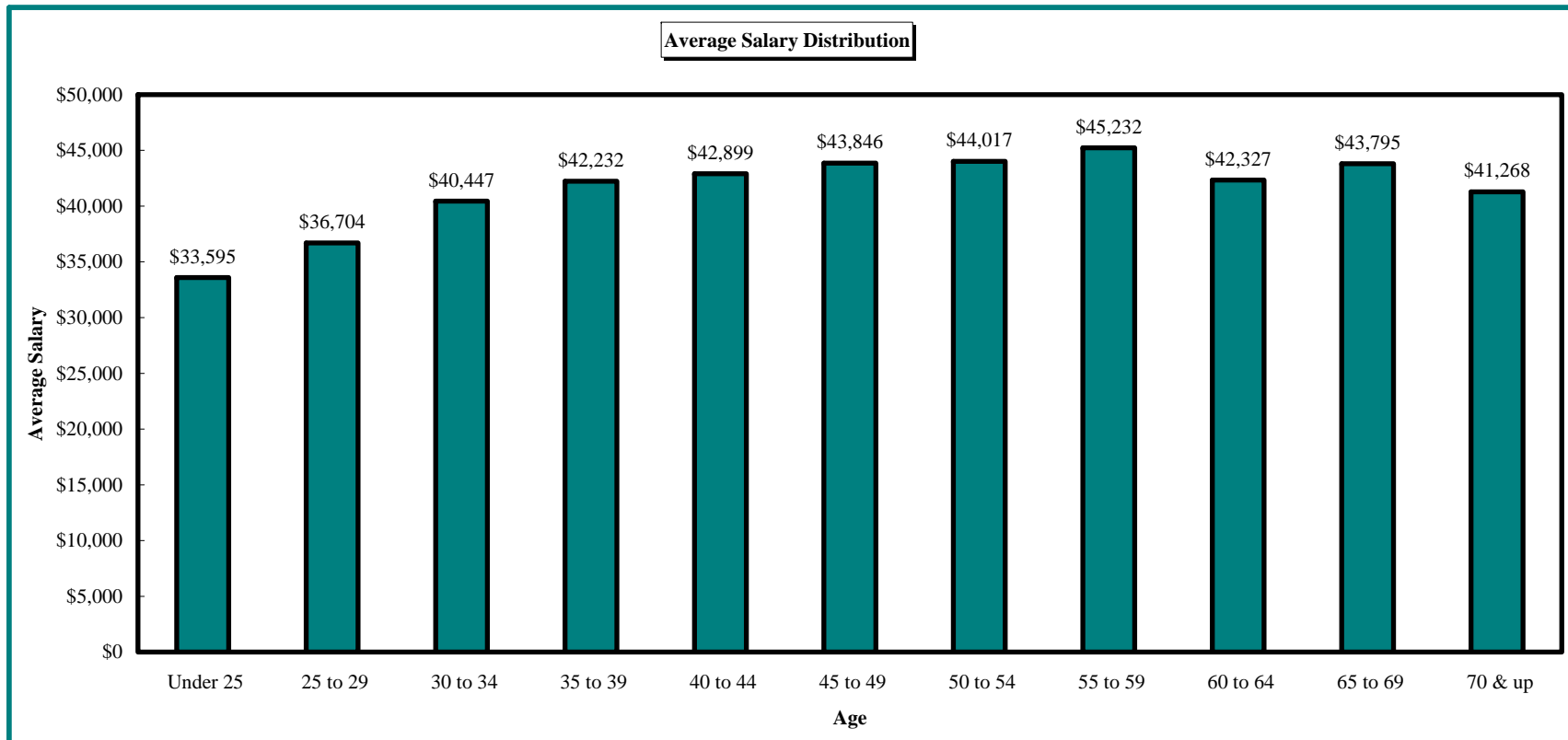
Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	\$36,830	\$32,193	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,595
25 to 29	\$30,906	\$37,906	\$40,634	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,704
30 to 34	\$35,499	\$38,004	\$46,098	\$46,705	\$0	\$0	\$0	\$0	\$0	\$0	\$40,447
35 to 39	\$31,743	\$38,964	\$44,290	\$50,126	\$56,148	\$0	\$0	\$0	\$0	\$0	\$42,232
40 to 44	\$32,835	\$37,166	\$45,397	\$47,706	\$54,018	\$59,062	\$0	\$0	\$0	\$0	\$42,899
45 to 49	\$32,483	\$39,046	\$42,124	\$49,563	\$55,626	\$56,521	\$57,232	\$60,074	\$0	\$0	\$43,846
50 to 54	\$43,231	\$37,390	\$40,735	\$48,225	\$44,243	\$59,696	\$59,663	\$56,548	\$0	\$0	\$44,017
55 to 59	\$39,174	\$37,850	\$44,219	\$51,166	\$49,030	\$64,216	\$52,332	\$60,876	\$60,964	\$0	\$45,232
60 to 64	\$31,925	\$39,926	\$44,605	\$45,454	\$50,137	\$0	\$0	\$0	\$0	\$0	\$42,327
65 to 69	\$0	\$37,336	\$45,948	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,795
70 & up	\$0	\$0	\$0	\$41,268	\$0	\$0	\$0	\$0	\$0	\$0	\$41,268
Total	\$34,494	\$37,676	\$43,905	\$48,753	\$51,738	\$59,317	\$57,468	\$58,512	\$60,964	\$0	\$41,803

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

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

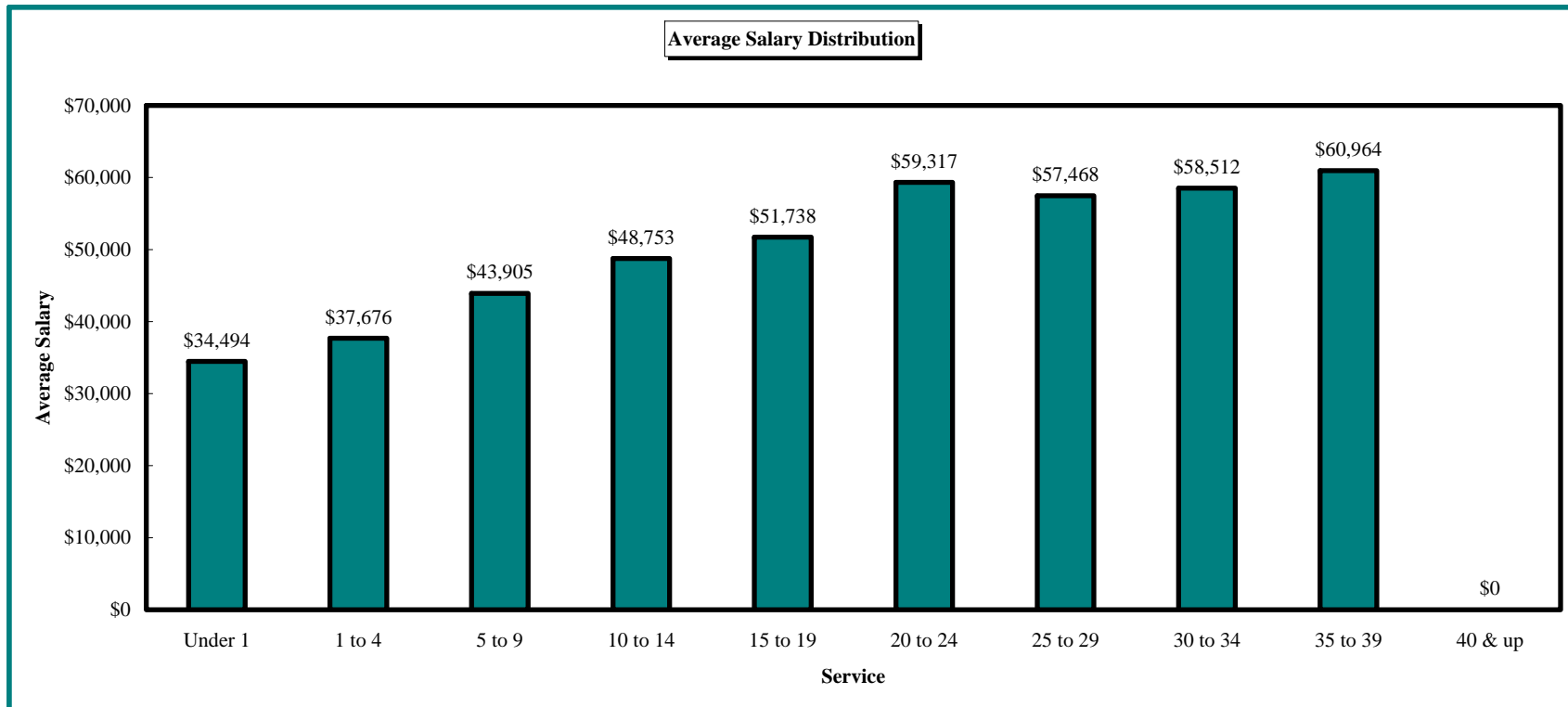
**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Age as of June 30, 2010**



MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of Active
Members
by Service as of June 30, 2010**



**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of
Retired Members,
Survivors, and Disabled Members as of June 30, 2010**

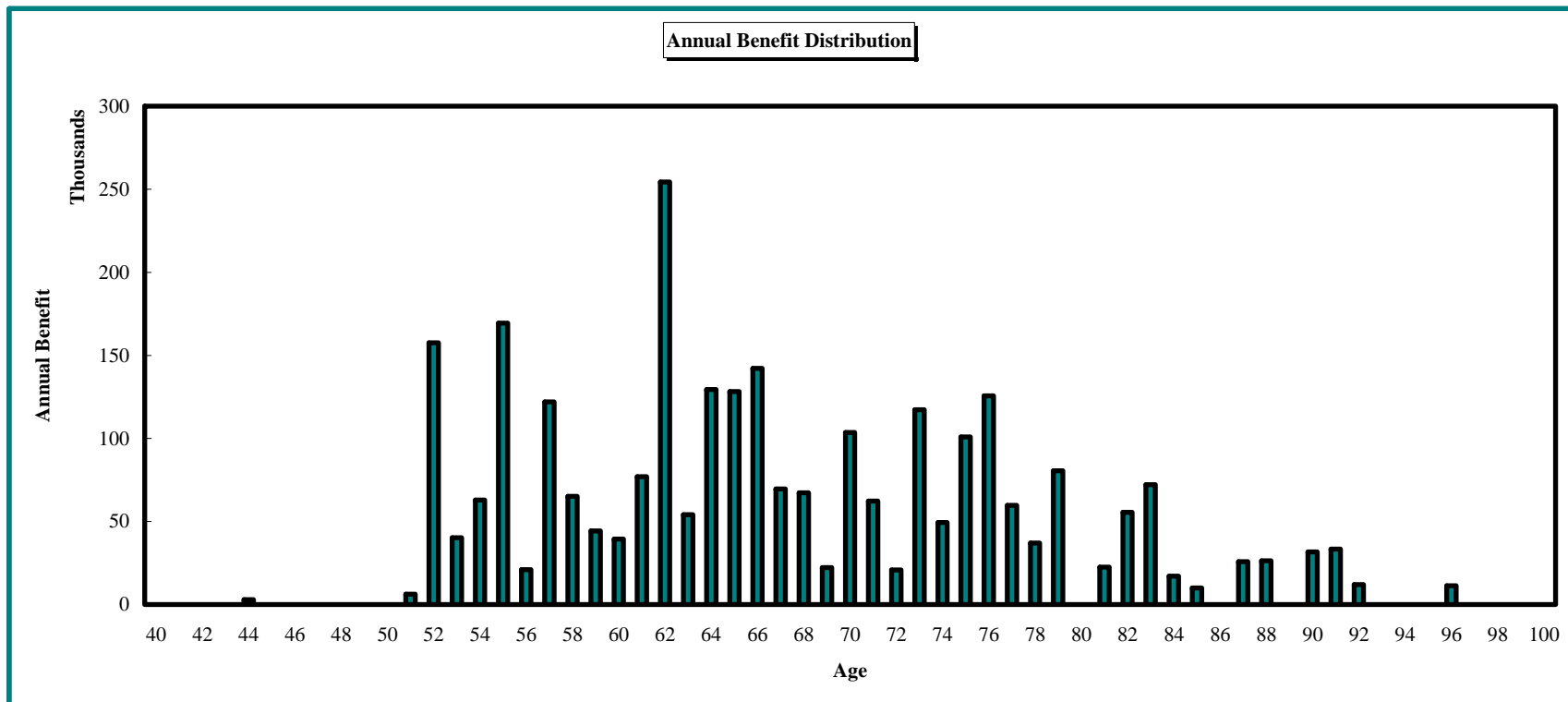
Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	\$0	73	4	\$117,301
25	0	\$0	74	2	\$49,432
26	0	\$0	75	5	\$100,853
27	0	\$0	76	4	\$125,640
28	0	\$0	77	2	\$59,742
29	0	\$0	78	2	\$37,137
30	0	\$0	79	3	\$80,543
31	0	\$0	80	0	\$0
32	0	\$0	81	3	\$22,548
33	0	\$0	82	3	\$55,616
34	0	\$0	83	2	\$72,194
35	0	\$0	84	1	\$17,074
36	0	\$0	85	1	\$10,001
37	0	\$0	86	0	\$0
38	0	\$0	87	1	\$25,835
39	0	\$0	88	2	\$26,370
40	0	\$0	89	0	\$0
41	0	\$0	90	2	\$31,659
42	0	\$0	91	2	\$33,346
43	0	\$0	92	1	\$12,055
44	1	\$2,895	93	0	\$0
45	0	\$0	94	0	\$0
46	0	\$0	95	0	\$0
47	0	\$0	96	1	\$11,320
48	0	\$0	97	0	\$0
49	0	\$0	98	0	\$0
50	0	\$0	99	0	\$0
51	1	\$6,230	100	0	\$0
52	5	\$157,611	101	0	\$0
53	1	\$40,321	102	0	\$0
54	2	\$62,896	103	0	\$0
55	7	\$169,355	104	0	\$0
56	2	\$21,043	105	0	\$0
57	4	\$121,999	106	0	\$0
58	5	\$65,184	107	0	\$0
59	3	\$44,395	108	0	\$0
60	5	\$39,448	109	0	\$0
61	4	\$76,967	110	0	\$0
62	13	\$254,431	111	0	\$0
63	6	\$54,120	112	0	\$0
64	5	\$129,470	113	0	\$0
65	6	\$128,254	114	0	\$0
66	5	\$142,145	115	0	\$0
67	6	\$69,564	116	0	\$0
68	5	\$67,269	117	0	\$0
69	1	\$22,295	118	0	\$0
70	4	\$103,639	119	0	\$0
71	3	\$62,317	120	0	\$0
72	1	\$20,869			
Totals				136	\$2,751,384

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.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

Montana Game Wardens' and Peace Officers' Retirement System Distribution of Retired
Members,
Survivors, and Disabled Members as of June 30, 2010



**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Montana Game Wardens' and Peace Officers' Retirement System Distribution of
Vested Members
as of June 30, 2010**

Age	Count	Annual Benefit	Account Balance*	Age	Count	Annual Benefit	Account Balance*
<25	0	\$0	\$0	73	0	\$0	\$0
25	0	\$0	\$0	74	0	\$0	\$0
26	0	\$0	\$0	75	0	\$0	\$0
27	0	\$0	\$0	76	0	\$0	\$0
28	0	\$0	\$0	77	0	\$0	\$0
29	0	\$0	\$0	78	0	\$0	\$0
30	0	\$0	\$0	79	0	\$0	\$0
31	0	\$0	\$0	80	0	\$0	\$0
32	0	\$0	\$0	81	0	\$0	\$0
33	1	\$4,098	\$0	82	0	\$0	\$0
34	0	\$0	\$0	83	0	\$0	\$0
35	0	\$0	\$0	84	0	\$0	\$0
36	3	\$21,562	\$0	85	0	\$0	\$0
37	1	\$5,310	\$0	86	0	\$0	\$0
38	2	\$7,987	\$96,541	87	0	\$0	\$0
39	4	\$33,743	\$0	88	0	\$0	\$0
40	2	\$15,169	\$0	89	0	\$0	\$0
41	3	\$24,511	\$61,544	90	0	\$0	\$0
42	2	\$8,278	\$72,076	91	0	\$0	\$0
43	1	\$6,444	\$0	92	0	\$0	\$0
44	1	\$13,985	\$0	93	0	\$0	\$0
45	2	\$23,045	\$0	94	0	\$0	\$0
46	1	\$21,184	\$0	95	0	\$0	\$0
47	2	\$12,062	\$0	96	0	\$0	\$0
48	5	\$26,078	\$23,589	97	0	\$0	\$0
49	2	\$11,728	\$0	98	0	\$0	\$0
50	3	\$12,493	\$63,191	99	0	\$0	\$0
51	1	\$16,834	\$0	100	0	\$0	\$0
52	2	\$14,369	\$0	101	0	\$0	\$0
53	3	\$21,505	\$0	102	0	\$0	\$0
54	1	\$7,634	\$0	103	0	\$0	\$0
55	0	\$0	\$0	104	0	\$0	\$0
56	0	\$0	\$0	105	0	\$0	\$0
57	1	\$6,643	\$0	106	0	\$0	\$0
58	2	\$16,472	\$0	107	0	\$0	\$0
59	0	\$0	\$0	108	0	\$0	\$0
60	0	\$0	\$0	109	0	\$0	\$0
61	1	\$4,674	\$0	110	0	\$0	\$0
62	0	\$0	\$0	111	0	\$0	\$0
63	1	\$4,112	\$0	112	0	\$0	\$0
64	0	\$0	\$0	113	0	\$0	\$0
65	0	\$0	\$0	114	0	\$0	\$0
66	0	\$0	\$0	115	0	\$0	\$0
67	0	\$0	\$0	116	0	\$0	\$0
68	0	\$0	\$0	117	0	\$0	\$0
69	0	\$0	\$0	118	0	\$0	\$0
70	0	\$0	\$0	119	0	\$0	\$0
71	0	\$0	\$0	120	0	\$0	\$0
72	0	\$0	\$0				
Totals					47	\$339,921	\$316,940

* projected to the greater of age 55 or current age

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

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A
MEMBERSHIP INFORMATION**

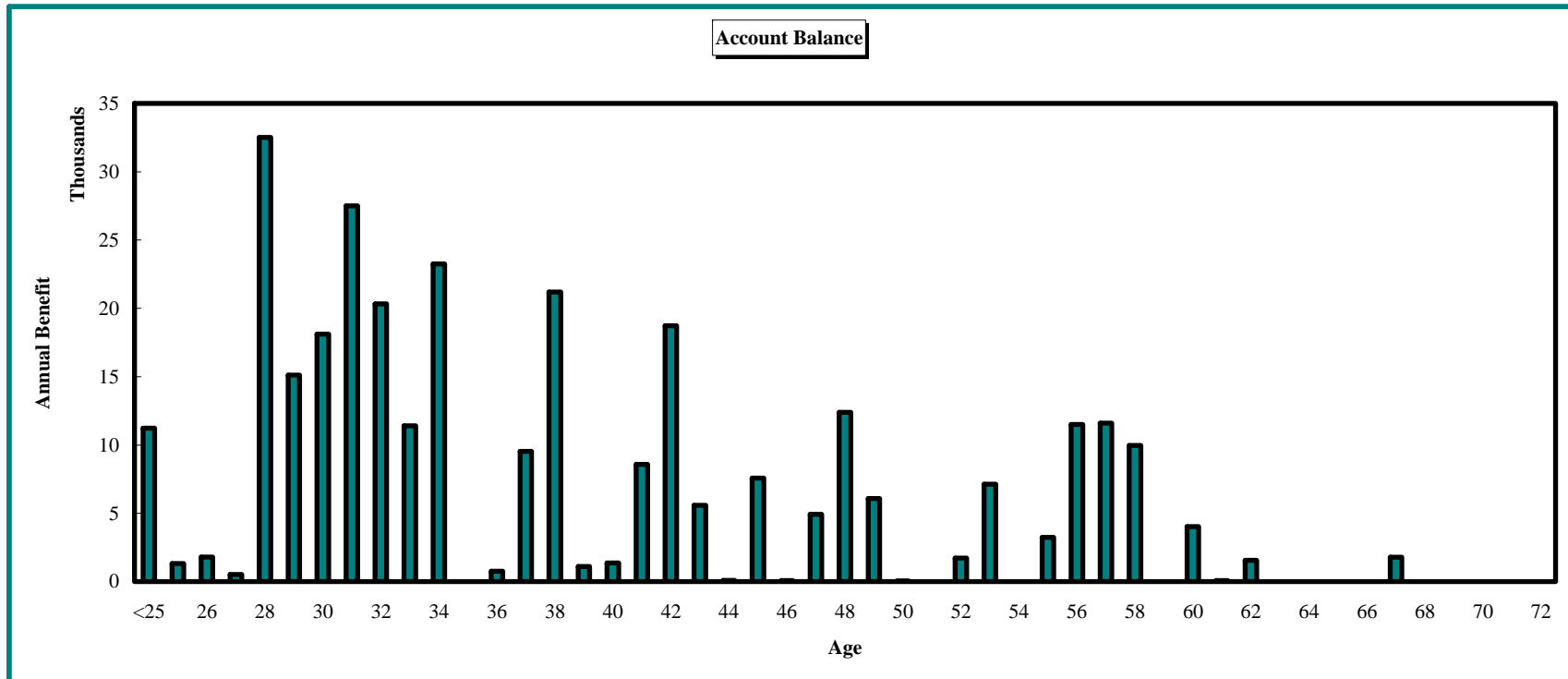
**Montana Game Wardens' and Peace Officers' Retirement System Distribution of
Non-Vested Members
as of June 30, 2010**

Age	Count	Account Balance	Age	Count	Annual Benefit
<25	6	\$11,236	73	0	\$0
25	1	\$1,318	74	0	\$0
26	1	\$1,794	75	0	\$0
27	1	\$525	76	0	\$0
28	7	\$32,516	77	0	\$0
29	7	\$15,117	78	0	\$0
30	3	\$18,111	79	0	\$0
31	6	\$27,516	80	0	\$0
32	7	\$20,325	81	0	\$0
33	4	\$11,405	82	0	\$0
34	2	\$23,250	83	0	\$0
35	0	\$0	84	0	\$0
36	1	\$761	85	0	\$0
37	13	\$9,525	86	0	\$0
38	2	\$21,198	87	0	\$0
39	1	\$1,111	88	0	\$0
40	2	\$1,362	89	0	\$0
41	3	\$8,582	90	0	\$0
42	3	\$18,723	91	0	\$0
43	2	\$5,592	92	0	\$0
44	1	\$89	93	0	\$0
45	2	\$7,586	94	0	\$0
46	1	\$81	95	0	\$0
47	2	\$4,932	96	0	\$0
48	4	\$12,397	97	0	\$0
49	1	\$6,084	98	0	\$0
50	1	\$48	99	0	\$0
51	0	\$0	100	0	\$0
52	3	\$1,728	101	0	\$0
53	2	\$7,134	102	0	\$0
54	0	\$0	103	0	\$0
55	2	\$3,230	104	0	\$0
56	1	\$11,513	105	0	\$0
57	1	\$11,593	106	0	\$0
58	2	\$9,963	107	0	\$0
59	0	\$0	108	0	\$0
60	2	\$4,033	109	0	\$0
61	1	\$73	110	0	\$0
62	1	\$1,558	111	0	\$0
63	0	\$0	112	0	\$0
64	0	\$0	113	0	\$0
65	0	\$0	114	0	\$0
66	0	\$0	115	0	\$0
67	1	\$1,777	116	0	\$0
68	0	\$0	117	0	\$0
69	0	\$0	118	0	\$0
70	0	\$0	119	0	\$0
71	0	\$0	120	0	\$0
72	0	\$0			
Totals				100	\$313,787

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A
MEMBERSHIP INFORMATION

Montana Game Wardens' and Peace Officers' Retirement System Distribution of
Non-Vested Members as of June 30, 2010



MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION 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%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

c. Rates of Active Disability

Sample Rates of Active Disability	
Age	Male
22	0.00%
27	0.10%
32	0.10%
37	0.10%
42	0.40%
47	0.40%
52	0.40%
57	0.40%
62	0.00%

75% of disabilities are assumed to be duty-related. 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	12%
4	10%
5-9	6%
10-14	3%
15 & over	2%

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

Probability of Electing Refund		
Age at Term.	Non-Vested	Vested
Under 35	100%	70%
35-39	100%	60%
40-44	100%	50%
45-49	100%	40%
50 & Over	100%	0%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

f. Retirement

Age	Annual Retirement Rates	
	Age 55 with 5 years of service	20 years or more and age 60 with 5 years of service
<50	N/A	0%
50 – 54	N/A	15%
55	N/A	25%
50 – 59	15%	25%
60 – 61	5%	15%
62	N/A	40%
62 – 64	N/A	15%
65 & over	N/A	100%

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

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	7.3%
2	5.6%
3	4.4%
4	3.5%
5	2.8%
6	2.2%
7	1.7%
8	1.3%
9	1.0%
10	0.7%
11-15	0.4%
16-20	0.2%
21 & over	0.0%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

h. Family Composition

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

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

Actual marital characteristics are used for pensioners.

i. Vested Benefits for Terminated Members

Vested benefits for members who terminated during the 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.

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% |

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

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

Sample Rates of Healthy Mortality		
Age	Male	Female
50	0.250%	0.154%
55	0.428%	0.247%
60	0.762%	0.477%
65	1.391%	0.929%
70	2.336%	1.476%
75	3.661%	2.439%
80	6.007%	4.236%
85	9.636%	7.284%
90	14.995%	12.502%

70% of active employee deaths are assumed to be duty related.

ii. Beneficiaries

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

Sample Rates of Beneficiary 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%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

iii. Disabled Inactive Mortality

Male: Male UP-1994 Mortality Table set forward three years
Female: Female UP-1994 Mortality Table set forward two years

Sample Rates of Disabled Inactive Mortality		
Age	Male	Female
50	0.385%	0.186%
55	0.677%	0.314%
60	1.234%	0.627%
65	2.135%	1.157%
70	3.355%	1.775%
75	5.399%	3.050%
80	8.872%	5.285%
85	13.654%	9.035%
90	21.333%	15.266%

iv. Rates of Active Disability

Sample Rates of Active Disability		
Age	Male	Female
22	0.00%	0.00%
27	0.10%	0.10%
32	0.10%	0.10%
37	0.10%	0.10%
42	0.40%	0.40%
47	0.40%	0.40%
52	0.40%	0.40%
57	0.40%	0.40%
62	0.00%	0.00%

10% of disabilities are assumed to be duty-related. All disabilities are assumed to be permanent and without recovery.

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

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

Service	Rate
0	20%
1	15%
2	10%
3	6%
4	6%
5-9	5%
10-14	5%
15 & over	5%

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

Probability of Electing Refund		
Age at Term.	Non-Vested	Vested
Under 35	100%	70%
35-39	100%	60%
40-44	100%	40%
45-49	100%	40%
50 & Over	100%	0%

vii. Retirement

Annual Retirement Rates	
Age	20 years or more
<50	0.00%
50 – 54	5.00%
55	10.00%
56	10.00%
57	10.00%
58	10.00%
59	10.00%
60 & over	100.00%

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

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

viii. 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 employee.

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 C
SUMMARY OF PLAN PROVISIONS

1. Membership

The Plan is a multiple-employer cost sharing plan that covers persons employed as a game warden, warden supervisor, or state peace officer.

2. Contributions

Members contribute 10.56% 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 9.0% of each member’s compensation.

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 worked 160 hours. This includes certain transferred and purchased service.

4. Membership Service

Service used to determine eligibility for vesting, retirement or other GWPORS benefits. One month of membership service is earned for any month member contributions are made to GWPORS, 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 is specifically defined by law.

6. Normal Retirement

Eligibility: Age 50 with 20 years of membership service.

Benefit: 2.5% of highest average compensation times years of service credit.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

7. Early Retirement

Eligibility: Age 55 with 5 years of membership service.

Benefit: Normal retirement benefit calculated using highest average compensation and service credit at early retirement.

8. Disability Benefit

Eligibility: (i) Five years of membership service for duty-related disability, or (ii) any service for regular disability.

Benefit: (i) For duty-related disability, (a) If less than 20 years of membership service: 50% of highest average compensation and (b) If 20 years or more of membership service: 2.5% of highest average compensation multiplied by years of service credit.

(ii) For regular disability, the actuarial equivalent of the accrued normal retirement benefit on a retirement age of 50.

9. Survivor's Benefit

Eligibility: Active or retired member.

Benefit: For duty-related deaths, a monthly survivor benefit to the designated beneficiary equal to (i) If less than 20 years of membership service: 50% of highest average compensation or (ii) If deceased member has more than 25 years of membership service: 2% of highest average compensation multiplied by years of service credit.

For non-duty-related deaths, a refund of the member's accumulated contributions.

A beneficiary may elect to receive the payment as an annuity that is the actuarial equivalent of the amount of benefit based on a retirement age of 55.

For retired members without a contingent annuitant, a payment will be made to the member's designated beneficiary equal to the accumulated contributions reduced by any retirement benefits already paid.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

10. Vesting

Eligibility: Five years of membership service.

Benefit: Accrued normal retirement benefit, payable at normal or early retirement date. 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 shall be forfeited.

11. Withdrawal of Employee Contributions

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

Benefit: Accumulated member contributions.

12. Form of Payment

The normal form of payment is a life annuity.

Optional benefits: (i) Option 2, a joint and 100% survivor benefit, (ii) Option 3, a joint and 50% survivor benefit, or (iii) Option 4, a life annuity with a period certain.

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.

14. Changes Since Last Valuation

None.