



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*



**EMPLOYEES'**  
**RETIREMENT SYSTEM**  
OF GEORGIA

**GEORGIA MILITARY PENSION FUND**

**REPORT OF THE ACTUARY ON THE VALUATION  
PREPARED AS OF JUNE 30, 2010**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

April 11, 2011

Board of Trustees  
Georgia Military Pension Fund  
Two Northside 75, Suite 300  
Atlanta, GA 30318

Members of the Board:

Section 47-24-22 of the law governing the operation of the Georgia Military Pension Fund provides that the actuary shall make periodic valuations of the contingent assets and liabilities of the Pension Fund on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the Fund prepared as of June 30, 2010. The report indicates that annual employer contributions of \$1,703,022 or \$130.68 per active member for the fiscal year ending June 30, 2013 are sufficient to support the benefits of the Fund.

Since the previous valuation, various assumptions and methods have been revised to reflect the results of the experience investigation for the period ending June 30, 2009.

In preparing the valuation, the actuary relied on data provided by the Fund. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the Fund enacted through the 2010 session of the General Assembly.

The Fund is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund. The assumptions and methods used for funding purposes meet the parameters set for the disclosures presented in the financial section by Governmental Accounting Standards Board (GASB) Statement Nos. 25 and 27. The funding objective of the plan is that contribution rates over time will remain level as a percent dollar per active member. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level dollar per active member. Gains and losses are reflected in the unfunded accrued liability which is being amortized as a level dollar per active member within a 20-year period.

The Fund is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law. In our opinion the Fund is operating on an actuarially sound basis. Assuming that contributions to the Fund are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the Fund may be safely anticipated.

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April 11, 2011  
Board of Trustees  
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This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Fund.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Edward Macdonald', written in a cursive style.

Edward A. Macdonald, ASA, FCA, MAAA  
President

A handwritten signature in blue ink, appearing to read 'Cathy Turcot', written in a cursive style.

Cathy Turcot  
Principal and Managing Director

EAM:mjn



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**GEORGIA MILITARY PENSION FUND  
REPORT OF THE ACTUARY  
ON THE VALUATION  
PREPARED AS OF JUNE 30, 2010**

**SECTION I - SUMMARY OF PRINCIPAL RESULTS**

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

Valuation Date	June 30, 2010	June 30, 2009
Number of active members	13,032	12,019
Retired members:		
Number	477	386
Annual pensions	\$ 519,720	\$ 421,200
Former members entitled to deferred vested pensions:		
Number	1,737	1,808
Annual deferred pensions	\$ 1,541,928	\$ 1,622,820
Assets:		
Market Value	\$ 6,696,000	\$ 5,229,000
Actuarial Value	7,558,000	6,413,000
Unfunded actuarial accrued liability	\$ 16,214,737	\$ 14,608,277
Amortization Period	20 years	20 years
Funded Ratio	31.8%	30.5%
<b>For Fiscal Year Ending</b>	<b>June 30, 2013</b>	<b>June 30, 2012</b>
Employer contribution rate per active member:		
Normal <sup>1</sup>	\$ 8.63	\$ 7.35
Accrued liability	<u>122.05</u>	<u>119.22</u>
Total	\$ 130.68	\$ 126.57
Annual Required Employer Contribution Rates (ARC):		
Normal <sup>1</sup>	\$ 112,466	\$ 88,340
Accrued liability	<u>1,590,556</u>	<u>1,432,905</u>
Total	\$ 1,703,022	\$ 1,521,245

<sup>1</sup> Beginning with the June 30, 2010 valuation, estimated budgeted administrative expenses are included in the normal contribution.

2. The valuation takes into account the effect of amendments to the Fund enacted through the 2010 session of the General Assembly. The major benefit and contribution provisions of the Fund as reflected in the valuation are summarized in Schedule F. There have been no changes since the previous valuation.



3. Since the previous valuation, various assumptions and methods have been revised to reflect the results of the experience investigation for the five year period ending June 30, 2009. These revised assumptions were adopted by the Board on December 16, 2010 and are shown below. Schedule D of this report outlines the full set of actuarial assumptions and methods used to prepare the current valuation.

<b>Summary of Assumptions and Methods</b>	
<b>Economic Assumptions</b>	
<b>Investment Rate of Return</b>	Composed of Inflation component and Real Rate of Return component.
Inflation	Changed annual rate of inflation assumption from 3.75% to 3.00%.
Real Rate of Investment Return	Changed to a 4.50% assumption resulting in no change to the 7.50% net investment return assumption.
<b>Demographic Assumptions</b>	
<b>Withdrawal</b>	Changed Assumed Rates.
<b>Retirement</b>	Changed Assumed Rates.
<b>Mortality</b>	Changed Assumed Rates.
<b>Other Assumptions and Methods and Administrative Changes</b>	
<b>Administrative Expenses</b>	Changed assumption.
<b>Amortization Method</b>	Changed assumption (maximum amortization period of 20 years).
<b>Asset Smoothing</b>	No change to current method.
<b>All others</b>	No change to other actuarial methods.

4. The entry age actuarial cost method was used to prepare the valuation. Schedule E contains a brief description of this method.
5. Comments on the valuation results as of June 30, 2010 are given in Section IV, and further discussion of the contributions is set out in Section V.



## **SECTION II – MEMBERSHIP DATA**

1. Data for retired members of the Fund were furnished by the Retirement System. Data for active and deferred vested members of the Fund were furnished by the Defense Department. On this basis, the valuation includes 13,032 active National Guard members.
2. The following table shows the number of retired members and deferred vested members included in the valuation as of June 30, 2010, together with the amount of their annual retirement allowances payable under the Fund as of that date.

### **THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS AND DEFERRED VESTED MEMBERS AS OF JUNE 30, 2010**

<b>GROUP</b>	<b>NUMBER</b>	<b>ANNUAL RETIREMENT ALLOWANCES</b>
Retired Members, currently payable	477	\$ 519,720
Former Members, deferred allowances	1,737	1,541,928

## **SECTION III - ASSETS**

1. As of June 30, 2010 the total market value of assets amounted to \$6,696,000 as reported by the independent Auditor of the Fund. The actuarial value of assets at June 30, 2010 is \$7,558,000. Schedule B shows the development of the actuarial value of assets as of June 30, 2010.
2. Schedule C shows the receipts and disbursements of the Fund for the two years preceding the valuation date and a reconciliation of the fund balances.



#### **SECTION IV – COMMENTS ON VALUATION**

1. Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the Fund as of June 30, 2010. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.
2. The valuation balance sheet shows that the Fund has total prospective liabilities of \$24,071,889, of which \$14,014,819 is for the prospective benefits payable on account of present retired members, and members entitled to deferred vested benefits, and \$10,057,070 for the prospective benefits payable on account of present active members. Against these liabilities, the Fund has total present assets of \$7,558,000 as of June 30, 2010. The difference of \$16,513,889 between the total liabilities and the total present assets represents the present value of contributions to be made in the future.
3. The employer's contributions to the Fund consist of normal contributions and accrued liability contributions. The valuation indicates that annual employer normal contributions at the rate of \$4.96 per active member are required to provide the currently accruing benefits of the Fund. An additional \$3.67 per active member is required to fund the administrative expenses of the Fund.
4. Prospective normal contributions (net of expenses) at the rate of \$4.96 have a present value of \$299,152. When this amount is subtracted from \$16,513,889, which is the present value of the total future contributions to be made by the employers, the result is a prospective unfunded actuarial accrued liability of \$16,214,737.
5. The accrued liability contribution is the level annual amount which will liquidate the unfunded actuarial liability over a 20-year period. The annual accrued liability contribution determined on this basis is \$1,590,556, or \$122.05 per active member.





**SECTION V – CONTRIBUTIONS PAYABLE BY THE STATE**

1. The following table summarizes the employer contribution rates which were determined by the June 30, 2010 valuation and are recommended for use.

**ANNUAL REQUIRED EMPLOYER CONTRIBUTION RATES (ARC)  
FOR FISCAL YEAR ENDING JUNE 30, 2013**

<b>CONTRIBUTION</b>	<b>PER ACTIVE MEMBER</b>	<b>ANNUAL AMOUNT</b>
Normal	\$ 8.63	\$ 112,466
Accrued Liability	<u>122.05</u>	<u>1,590,556</u>
Total	\$ 130.68	\$ 1,703,022

**SECTION VI – ACCOUNTING INFORMATION**

1. Governmental Accounting Standards Board Statements 25 and 27 set forth certain items of required supplementary information to be disclosed in the financial statements of the Fund and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED MEMBERS  
AS OF JUNE 30, 2010**

<b>GROUP</b>	<b>NUMBER</b>
Retirees and beneficiaries currently receiving benefits	477
Terminated plan members entitled to benefits but not yet receiving benefits	1,737
Active plan members	<u>13,032</u>
Total	15,246



2. Another such item is the schedule of funding progress as shown below.

**SCHEDULE OF FUNDING PROGRESS**  
(Dollar Amounts in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2005	\$ 2,176,000	\$ 14,453,668	\$ 12,277,668	15.06%	N/A	N/A
6/30/2006	3,100,000	17,625,320	14,525,320	17.59	N/A	N/A
6/30/2007	4,165,000	19,886,788	15,721,788	20.94	N/A	N/A
6/30/2008	5,269,000	19,124,342	13,855,342	27.55	N/A	N/A
6/30/2009	6,413,000	21,021,277	14,608,277	30.51	N/A	N/A
6/30/2010	7,558,000	23,772,737	16,214,737	31.79	N/A	N/A

3. The following shows the schedule of employer contributions:

<u>Year Ending</u>	<u>Annual Required Contribution</u>	<u>Percentage Contributed</u>
6/30/2006	\$ 891,000	100%
6/30/2007	1,005,000	100
6/30/2008	1,103,000	100
6/30/2009	1,323,000	100
6/30/2010	1,434,000	100



4. Additional information as of this actuarial valuation follows.

Valuation date	6/30/2010
Actuarial cost method	Entry age
Amortization method	Level dollar, open
Remaining amortization period	20 years
Asset valuation method	7-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.50%
Projected salary increases*	N/A
Cost-of-living adjustments	None
*Includes inflation at	3.00%

#### TREND INFORMATION

<u>Year Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Percentage of APC Contributed</u>	<u>Net Pension Obligation</u>
June 30, 2008	\$ 1,103,000	100%	\$ 0
June 30, 2009	1,323,000	100	0
June 30, 2010	1,434,000	100	0



**SCHEDULE A**

**VALUATION BALANCE SHEET**

**PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES  
AS OF JUNE 30, 2010**

<b><u>ACTUARIAL LIABILITIES</u></b>	
Present value of prospective benefits payable on account of:	
(1) Present retired members	\$ 4,993,567
(2) Former members entitled to deferred benefits	9,021,252
(3) Present active members	<u>10,057,070</u>
(4) Total Actuarial Liabilities	<u>\$ 24,071,889</u>
<b><u>PRESENT AND PROSPECTIVE ASSETS</u></b>	
(5) Actuarial Value of Assets:	\$ 7,558,000
(6) Present value of total future contributions = (4) – (5)	\$ 16,513,889
(7) Prospective normal contributions	299,152
(8) Prospective unfunded actuarial accrued liability contributions = (6) – (7)	<u>16,214,737</u>
(9) Total Present and Prospective Assets	<u>\$ 24,071,889</u>



**SCHEDULE B**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
(\$ in thousands)**

(1)	Actuarial Value Beginning of Year	\$ 6,413
(2)	Market Value End of Year	\$ 6,696
(3)	Market Value Beginning of Year	\$ 5,229
(4)	Cash Flow	
	(a) Contributions	\$ 1,434
	(b) Benefit Payments	<u>(532)</u>
	(c) Net: (4)(a) + (4)(b)	\$ 902
(5)	Investment Income	
	(a) Market Total: (2) – (3) – (4)(c)	\$ 565
	(b) Assumed Rate	7.50%
	(c) Amount for Immediate Recognition: [(3) x (5)(b)] + [(4)(c) x (5)(b) x 0.5]	\$ 426
	(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)	\$ 139
(6)	Phased-In Recognition of Investment Income	
	(a) Current Year: (5)(d) / 7	\$ 20
	(b) First Prior Year	(152)
	(c) Second Prior Year	(78)
	(d) Third Prior Year	35
	(e) Fourth Prior Year	(8)
	(f) Fifth Prior Year	0
	(g) Sixth Prior Year	<u>0</u>
	(h) Total Recognized Investment Gain	\$ (183)
(7)	Actuarial Value End of Year: (1) + (4)(c) + (5)(c) + (6)(h)	\$ 7,558
(8)	Difference Between Market & Actuarial Values: (2) – (7)	\$ (862)
(9)	Rate of Return on Actuarial Value	3.54%



**SCHEDULE C**

**SUMMARY OF RECEIPTS AND DISBURSEMENTS  
(\$ in thousands)**

<u>Receipts for the Year</u>	<b>YEAR ENDING</b>	
	<u>June 30, 2010</u>	<u>June 30, 2009</u>
Contributions:		
Members	\$ 0	\$ 0
Employers	<u>1,434</u>	<u>1,323</u>
Total	\$ 1,434	\$ 1,323
Investment earnings	565	(657)
Administrative expense allotment	<u>0</u>	<u>0</u>
Total	\$ 1,999	\$ 666
<u>Disbursements for the Year</u>		
Retirement allowances	\$ 489	\$ 382
Refunds to members	0	0
Administration expense	<u>43</u>	<u>0</u>
Total	\$ 532	\$ 382
<u>Excess of Receipts over Disbursements</u>	\$ 1,467	\$ 284
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year (Market Value)	\$ 5,229	\$ 4,945
Excess of receipts over disbursements	<u>1,467</u>	<u>284</u>
Asset Balance as of the End of Year (Market Value)	<u>\$ 6,696</u>	<u>\$ 5,229</u>
Return of Return	9.95%	(12.13)%



**SCHEDULE D**

**OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

Adopted by the Board December 16, 2010

**INTEREST RATE:** 7.50% per annum, compounded annually.

**SEPARATIONS FROM ACTIVE SERVICE:** Representative values of the assumed annual rates of separation from active service are as follows:

RATES OF WITHDRAWAL FROM ACTIVE SERVICE	
SERVICE	RATES
10 or less	17.5%
11-13	15.0
14-19	9.5
20 or more	14.5

AGE	RATES OF RETIREMENT
60	65.0%
61	65.0
62	65.0
63	65.0
64	65.0
65 and over	100.0

AGE	RATES OF DEATH	
	Male	Female
25	.038%	.021%
30	.044	.026
35	.077	.048
40	.108	.071
45	.151	.112
50	.214	.168
55	.362	.272
60	.675	.506

**DEATHS AFTER RETIREMENT:** The RP-2000 Combined Morality Table.

**ADMINISTRATIVE EXPENSES:** Budgeted administrative expenses for the fiscal year are added to the normal cost.

**AMORTIZATION METHOD:** Level dollar amortization, with maximum period of 20 years.



**ASSET METHOD:** Actuarial value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected value of assets, based on the assumed valuation rate of return. The amount recognized each year is  $1/7$  of the difference between market value and expected market value.

**VALUATION METHOD:** Entry age actuarial cost method. See Schedule E for a brief description of this method.





## **SCHEDULE E**

### **ACTUARIAL COST METHOD**

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.50%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members, beneficiaries and members entitled to deferred vested benefits to obtain the present value of all expected benefits payable from the Fund on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the Fund are determined following a level funding approach, and consist of a normal contribution and an unfunded actuarial accrued liability contribution.
3. The normal contribution is determined using the entry age actuarial cost method. Under this method, a calculation is made to determine the level amount which, if applied for the average member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded actuarial accrued liability contributions are determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets, from the present value of expected benefits to be paid from the Fund.



## **SCHEDULE F**

### **SUMMARY OF PROVISIONS**

#### **MEMBERSHIP**

All persons who are members of the Georgia National Guard on and after July 1, 2002 are Members of the Fund.

#### **BENEFITS**

##### **Retirement Allowance**

###### **Condition for Allowance**

A member who has attained age 60 and has completed 20 or more years of creditable service, including at least 15 years, 10 of which immediately precede discharge, of Georgia National Guard duty, and who has received an honorable discharge, is entitled to a monthly allowance.

###### **Amount of Allowance**

The amount of the allowance is equal to \$50 per month for 20 years' creditable service with an additional \$5 per month for each additional year of creditable service, provided that the total allowance shall not exceed \$100 per month. The allowance is payable for the life of the member.

##### **Deferred Retirement Allowance**

###### **Condition for Allowance**

A member whose service is terminated after he has 20 years of creditable service, including at least 15 years, 10 of which immediately precede discharge, of Georgia National Guard duty, and who has received an honorable discharge, is eligible to receive a deferred retirement allowance commencing at age 60.

###### **Amount of Allowance**

The amount is the same as that for a service retirement.

#### **CONTRIBUTIONS**

The State makes annual contributions sufficient to meet the cost of the benefits under the Fund.