

CITY OF GREENVILLE
FIREMEN'S PENSION FUND
ACTUARIAL REVIEW
July 1, 2001

Prepared By:
HUNT, DuPREE, RHINE & ASSOCIATES, INC.
Employee Benefit Consultants
Consulting Actuarial Services

September 10, 2001

Board of Trustees
Greenville Fire Department
22 West Broad Street
Greenville, South Carolina 29601

Gentlemen:

Hunt, DuPree, Rhine & Associates, Inc. has prepared an actuarial review for The City of Greenville Firemen's Pension Fund as of July 1, 2001. The financial information presented in this valuation is applicable to the twelve months ending June 30, 2001. The purpose of the review is to:

- determine the existing and projected plan liabilities for benefits earned by active, retiree, and widowed participants.
- determine the sufficiency of current funding levels and investment returns.
- provide disclosures which can be utilized to meet all of the requirements of the Government Accounting Standards Board Statements relating to the Pension Fund.

The Table of Contents following this letter outlines the text and tables included in this report.

Sincerely,

HUNT, DuPREE, RHINE & ASSOCIATES, INC.



Julian G. Hunt, Jr.
President



P. Martin McCaulay, F.S.A.
Pension Actuary

JGHjr:PMM/sml
attachments

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SECTION I
BASIS OF VALUATION

In this section, the basis of the valuation is presented and described. This information - the provisions of the plan and census of participants - is the foundation of the valuation, since these are the present facts upon which benefit payments will depend.

The valuation is based upon the premise that the plan will continue in existence, so that future events must also be considered. These future events are assumed to occur in accordance with the actuarial assumptions and concern such events as the earnings of the fund, the number of participants who will remain to retirement, their ages at retirement and expected benefits.

The actuarial assumptions and the actuarial cost method, or funding method, which has been adopted to guide the sponsor in funding the plan in a reasonable and acceptable manner, are described in this section.

SECTION I.A Summary of Plan Provisions

Effective Date

June 25, 1946

Eligibility Requirements

All regular employees of the Fire Department hired prior to the attainment of age 35 are eligible for benefits provided by this plan.

Contributions by Participating Employees

Participating employees contributed initially at the rate of 1% of salary. Salary deductions were increased, effective July 1, 1952, to 3% of salary. Deductions remained at this level until June 24, 1975 when they were raised to the current level of 5.775% of salary. Beginning in the 1997 plan year, the City offered to pay 4% of the State-directed contribution level, so that the net rate is now 1.775%.

Contributions from Other Sources

The following sums are also paid into the Fund:

1. Any money, real estate, personal property or other assets made available by gift, devise or bequest;
2. All forfeitures and fines imposed upon any member of the Department by way of discipline;
3. All proceeds from sales of condemned or discarded personal property and equipment in use by the Department;
4. The income from any tax levy imposed by the City Council in order to supplement or support this fund. The City currently contributes 19.425% of participating payroll.

SECTION I.A Summary of Plan Provisions (Continued)

Service Retirement Benefits

A member who has attained age 55 and completed at least 25 years of service may retire with a monthly benefit equal to 50% of his monthly compensation at the time of his retirement. For each year of service in excess of 25 years, an additional 2% of final compensation will be provided. In no event will more than 35 years of service be considered for the purpose of benefit determination. An adjustment of up to 6% of the percentage of compensation will be added to the benefit calculation to reflect accrued general leave time.

Disability Retirement Benefits

1. Line of Duty Disability
A member who incurs a disability while engaged in the performance of his duty will be retired with a monthly benefit equal to 50% of his monthly compensation at the time of his disability.
2. Disability Other Than in Line of Duty
 - a. A member who becomes disabled other than in the line of duty after the completion of 10 years of service will be retired with a monthly benefit equal to one-third of his monthly compensation at the time of disability.
 - b. A member who becomes disabled other than in the line of duty after the completion of 20 years of service will be retired with a monthly benefit equal to one-half of his monthly compensation at the time of disability.

SECTION I.A Summary of Plan Provisions (Continued)

Death Benefits

1. Upon the death of a retired member, the lawful widow will receive a monthly benefit equal to one-half of the benefit which the member was receiving, plus a lump sum of \$200. Such monthly benefit shall continue during her lifetime unless she remarries.

2. Upon death of an active member, the lawful widow will receive a monthly benefit equal to one-half of the member's monthly salary at the time of his death, plus a lump sum of \$200. Such monthly benefit shall continue during her lifetime unless she remarries.

3. If in the case of (1) or (2) above there is no lawful widow, the monthly benefits shall be paid to the surviving children until the youngest child attains age 18.

4. In the case of (2) above, the designated beneficiary may elect to take a refund of the member's contributions with 4% interest thereon in lieu of any monthly pension.

SECTION I.A Summary of Plan Provisions (Continued)

Withdrawal Benefits

A member who leaves the service of the Fire Department prior to becoming eligible for retirement benefits shall be entitled to a refund of his contributions plus four percent interest.

Members have a vested interest in their accrued benefits from the retirement plan of fifty percent after ten years of service. For each year of service beyond ten years, a member shall be entitled to an additional ten percent. A member becomes one hundred percent vested in his accrued retirement benefit after the completion of fifteen years of service.

A member's accrued retirement benefit will be based on earnings at the time of termination and will be prorated based on the number of years of actual service at date of termination to the total number of years of service anticipated at retirement age. For this purpose, retirement age is the later of age 55 and completion of 25 years of service. In lieu of a monthly pension, a vested participant may elect upon termination to take a refund of his contributions with 4% interest.

SECTION I.B Actuarial Assumptions

Development of Actuarial Assumptions

In determining costs for a retirement program, it is necessary to make certain assumptions as to the expected future experience that will take place within the program. These assumptions include the rates of mortality to be experienced by both the active, retired and widowed plan participants, the rates of termination of employment prior to retirement, the rates at which plan participants can be expected to take disability retirement, the age at which retirement will actually occur, the rates at which salaries will increase, the rate of investment return to be earned by the fund and the expenses to be incurred. The ultimate cost of any given retirement plan will depend upon actual plan experience.

It is possible to derive actuarial assumptions from the experience of the group under consideration. This is most often the case in very large groups. For plans of this size, the assumptions are best determined from the experience of similar groups, and standard published tables are available which can be used. Changes to assumptions will be considered when actual experience differs substantially and when estimates for the future suggest these changes.

SECTION I.B Actuarial Assumptions (Continued)

Actuarial Assumptions for Valuation of Liabilities

Mortality Rate: GAM 83 - Sex Distinct

Disability Rate: The following are examples of the probability that a participant will become disabled within one year. A disabled mortality assumption is also utilized. Duty-related disabilities are assumed to be 50% of all disabilities.

<u>Age</u>	<u>Percentage</u>
25	0.068%
40	0.230%
55	1.180%

Withdrawal Rate: The following are examples of the probability that a participant will terminate within one year for reasons other than death.

<u>Age</u>	<u>Percentage</u>
25	7.72%
40	5.15%
55	0.90%

Salary Scale: Assumes salaries increase at 4% per year (5% last year). The ratio of salary at age 55 to salary at

<u>Age</u>	<u>Percentage</u>
25	324%
40	180%

In addition, the inclusion of accrued general leave in the benefit calculation is assumed to increase retirement benefits by 4%.

Rate of Retirement: Assumed 50% retire each year following attainment of age 55 or the completion of 35 years of service, if later, but not beyond age 62.

Interest Rate:

<u>Funding Purposes -</u>	
Pre-Retirement:	7.0% (7.5% last year)
Post-Retirement:	7.0% (7.5% last year)

Marriage: It is assumed that 75% of the actives are married at death or retirement with spouses that are three years younger. There is a 0% remarriage assumption for surviving spouses whose benefits would stop upon remarriage.

Actuarial Assumptions for Valuation of Assets

Assets are carried at Market Value for valuation purposes.

Description of Valuation Method

The valuation method used is known as the Projected Unit Credit Method. The method divides the cost of funding benefits into two parts: normal cost and past service liability. Normal cost is the present value of the projected normal retirement benefit divided by a participant's total service. Past service liability is the present value of the projected retirement benefit multiplied by the ratio of past service over total service. If the past liability were fully funded, the total annual cost would be normal cost.

Because liabilities under a pension plan are based on actuarial assumptions (mortality, investment return, etc.) which will never precisely coincide with actual experience, variations known as actuarial gains and losses will occur, determined each time an actuarial valuation of the plan is made. Such gains or losses are a component of the unfunded liability and are amortized to determine the recommended contribution.

SECTION I.D

Changes From Prior Report

1. Plan Provisions

No Changes.

2. Actuarial Cost Method

No Changes.

3. Actuarial Assumptions

The interest rate assumption was changed from 7.5% to 7.0%, and the salary increase assumption was changed from 5.0% to 4.0%. Also, we now include an assumption of 4% for the amount of accrued general leave included in the benefit calculation.

SECTION I.E

Summary of Plan Participants

	<u>June 30,</u> <u>2000</u>	<u>June 30,</u> <u>2001</u>
I. <u>ACTIVES</u>		
Number	142	141
Total Annual Earnings	\$4,919,721	\$5,131,857
Average Earnings	\$ 34,646	\$ 36,396
Average Current Age	37.4	38.1
Average Past Service	14.0	15.1
II. <u>DEFERRED VESTED</u>		
Number	4	5
Average Annual Deferred Pension	\$ 5,952	\$ 9,457
III. <u>PARTICIPANTS IN PAY STATUS</u>		
Retirees	60	57
Surviving Widows	27	27
Average Annual Retiree Pension	20,446	20,454
Average Annual Widow Pension	8,521	8,652

SECTION II
ACCOUNTING INFORMATION

We received bank statements from Carolina First for the appropriate periods within the Plan Year ending June 30, 2001. This section provides a comparative summary statement of assets and liabilities as of each June 30, as well as a statement of income and expenses for the plan year.

SECTION II
FINANCIAL STATEMENTS

Section II.A

Statement of Assets and Liabilities

	<u>06-30-00</u> <u>Market Value</u>	<u>06-30-01</u> <u>Market Value</u>
<u>Assets</u>		
Cash Equivalents:		
Cash	\$ 517,047	\$ 524,206
Accounts Receivable:		
Accrued Income	426,493	345,096
Investments:		
Government Securities	<u>21,649,767</u>	<u>23,738,548</u>
Total Assets	\$22,593,307	\$24,607,850
<u>Liabilities</u>		
Accounts Payable:		
Benefit Payments	<u>1,156</u>	<u>1,156</u>
Total Liabilities	1,156	1,156
Net Assets	<u>\$22,592,151</u>	<u>\$24,606,694</u>

Section II.B

Financial Statements (Continued)

Statement of Income and Expenses
For Plan Year 07-01-00 To 06-30-01

Net Assets at Beginning of Year			\$ 22,592,151
<u>Income</u>			
Employer Contribution	\$	974,739	
Employee Contribution		89,069	
Other Contributions		119,705	
Investment Earnings		1,466,245	
Net Realized Gain on Sale or Exchange of Assets		188,134	
Unrealized Appreciation of Assets		<u>682,539</u>	
Total Income			\$ 3,520,431
<u>Expenses</u>			
Participants Benefits		1,473,343	
Administrative Expenses		<u>32,545</u>	
Total Expenses			<u>1,505,888</u>
Net Income			<u>2,014,543</u>
Net Assets at End of Year			<u>\$ 24,606,694</u>

SECTION III

SUMMARY OF VALUATION RESULTS

Section III.A		Summary of Actuarial Valuation	
1.	Present Value of Benefits		
a.	Active Lives		
	(1) Retirement	\$13,686,676	
	(2) Vesting	3,191,878	
	(3) Death	678,712	
	(4) Disability	<u>1,240,104</u>	
	(5) Total		18,797,370
b.	Deferred Vesteds		182,658
c.	Retirees		11,077,521
d.	Widows		<u>2,075,666</u>
e.	Total		32,133,215
2.	Present Value of Future Normal Cost		6,241,312
3.	Accrued Liability		
a.	Active Lives		12,556,058
b.	Deferred Vesteds		182,658
c.	Retirees		11,077,521
d.	Widows		<u>2,075,666</u>
e.	Total		25,891,903
4.	Actuarial Value of Assets		24,606,694
5.	Actual Unfunded Liability [(3) - (4)]		1,285,209
6.	Increase in (3) Due to Method Change	0	
7.	Increase in (3) Due to Benefit Changes	0	
8.	Increase in (3) Due to Assumption Change	619,468	
9.	Expected Unfunded Liability	<u>1,289,919</u>	
10.	Gain or Loss(-) (9) - [(5) - (6) - (7) - (8)]		624,178
11.	Funding Requirements		
a.	Normal Cost		
	(1) Retirement	357,952	
	(2) Vesting	131,827	
	(3) Death	17,638	
	(4) Disability	<u>32,467</u>	
	(5) Total		539,884
b.	Less Expected Employee Contributions		(81,716)
c.	Net Employer Normal Cost (a) - (b)		458,168
d.	Ten Year Amortization of Unfunded Liability		171,014
e.	Minimum Employer Funding Requirement		629,182

Section III.B

Analysis of Results

Investment Return

During our compilation of the plan's accounting over the prior year, we determined the approximate investment return over each period. We have summarized our results below and included results since 1982.

<u>Year</u>	<u>Estimated Annual Rate of Return</u>	
1982	24.8%	
1983	5.2%	
1984	12.9%	
Three Year Average		13.9%
1985	15.1%	
1986	9.9%	
1987	3.5%	
Three Year Average		9.4%
1988	6.8%	
1989	10.8%	
1990	8.9%	
Three Year Average		8.8%
1991	12.9%	
1992	6.9%	
Two Year Average (compound yield)		9.4%
1993	7.9%	
1994	-2.6%	
Two Year Average (compound yield)		2.9%
12-31-95	16.3%	
6-30-96 (½ year)	-.3%	
6-30-97	7.7%	
Two and ½ Year Average (compound yield)		9.3%
One Year Return 7-1-97 - 6-30-98	8.4%	
One Year Return 7-1-98 - 6-30-99	3.4%	
One Year Return 7-1-99 - 6-30-00	2.4%	
One Year Return 7-1-00 - 6-30-01	10.3%	
Four Year Average (compound yield)		6.1%

Actual Salary Increases

Salaries increased over the past year an average of 6.9% (5.0% was assumed), reflecting both merit and cost of living components for some participants. Salaries increased by 15.3% for participants under age 30 and 5.3% for participants over age 30.

Retirement

Over the prior year, one participant retired and began receiving payments from the plan. From the prior year's retirement rate assumption, one participant was expected to retire.

Death

There were five deaths reported among retired plan participants and one death reported among surviving spouses receiving benefits. Based on the mortality assumption, this was two more than the expected number of deaths.

Disabilities

There were no disabilities during the period. Based on the disability assumption, we expect about one disability every three years.

Terminations

Four active participants terminated before the earliest retirement age. Two were paid the amount of their contributions plus interest. Based on the termination assumption, we expected about eight terminations.

Section III.D

Cost of Living Adjustment Projections
Based Upon an Assumed 2% Annual Cost of Living
Adjustment

1. Accrued Liability		
a. Active Lives		\$ 15,266,027
b. Deferred Vesteds		210,809
c. Retirees		12,945,315
c. Widows		<u>2,432,676</u>
e. Total		\$ 30,854,827
2. Actuarial Value of Assets		\$ 24,606,694
3. Unfunded Liability [(1)-(2)]		\$ 6,248,133
4. Funding Requirements		
a. Normal Cost		
(1) Retirement	433,449	
(2) Vesting	160,821	
(3) Death	22,292	
(4) Disability	<u>39,217</u>	
(5) Total Normal Cost		\$ 655,779
b. Less Expected Employee Contributions		<u>(81,716)</u>
c. Net Employer Normal Cost		\$ 574,063
Option 1:		
d. Ten Year Amortization of Unfunded Liability		<u>831,396</u>
e. Suggested Employer Funding for a 2% annual increase		\$ 1,405,459
Option 2:		
f. Twenty Year Amortization of Unfunded Liability		<u>551,196</u>
g. Suggested Employer Funding for a 2% annual increase		\$ 1,125,259

Section III.E

Cost of a One-Time COLA for Retirees and Widows

	<u>One-Time 1% COLA</u>	<u>One-Time 2% COLA</u>
1. Accrued Liability (Total)	\$ 26,025,261	\$ 26,158,620
2. Actuarial Value of Assets	\$ 24,606,694	\$ 24,606,694
3. Unfunded Liability [(1) - (2)]	\$ 1,418,567	\$ 1,551,926
4. Funding Requirements		
a. Net Employer Normal Cost	\$ 458,168	\$ 458,168
Option 1:		
b. Ten Year Amortization of Unfunded Liability	<u>188,759</u>	<u>206,504</u>
c. Suggested Employer Funding for a One-Time COLA	\$ 646,927	\$ 664,672
Option 2:		
d. Twenty Year Amortization of Unfunded Liability	<u>125,143</u>	<u>136,907</u>
e. Suggested Employer Funding for a One-Time COLA	\$ 583,311	\$ 595,075

Section III.F

Cost of Adding Special Retirement Age

35 & Out*

1. Accrued Liability (Total)	\$ 26,121,805
2. Actuarial Value of Assets	\$ 24,606,694
3. Unfunded Liability [(1)-(2)]	\$ 1,515,111
4. Funding Requirements	
a. Net Employer Normal Cost	\$ 460,937
Option 1:	
b. Ten Year Amortization of Unfunded Liability	<u>201,605</u>
c. Suggested Employer Funding for Adding Special Retirement Ages	\$ 662,542
Option 2:	
d. Twenty Year Amortization of Unfunded Liability	<u>133,660</u>
e. Suggested Employer Funding for Adding Special Retirement Ages	\$ 594,597

* 35 & Out - Members could retire at the earlier of age 55 with 25 years of service, or any age with 35 years of service.

Section III.G

Cost of Adding Special Retirement Age
and a One-Time COLA

	35 & Out and One-Time <u>1% COLA</u>	35 & Out and One-Time <u>2% COLA</u>
1. Accrued Liability (Total)	\$ 26,255,163	\$ 26,388,522
2. Actuarial Value of Assets	\$ 24,606,694	\$ 24,606,694
3. Unfunded Liability [(1)-(2)]	\$ 1,648,469	\$ 1,781,828
4. Funding Requirements		
a. Net Employer Normal Cost	\$ 460,937	\$ 460,937
Option 1:		
b. Ten Year Amortization of Unfunded Liability	<u>219,350</u>	<u>237,095</u>
c. Suggested Employer Funding for Adding Special Retirement Ages and a One-Time COLA	\$ 680,287	\$ 698,032
Option 2:		
d. Twenty Year Amortization of Unfunded Liability	<u>145,424</u>	<u>157,189</u>
e. Suggested Employer Funding for Adding Special Retirement Ages and a One-Time COLA	\$ 606,361	\$ 618,126

SECTION IV
INFORMATION FOR ACCOUNTANTS PURSUANT TO
GOVERNMENT ACCOUNTING STANDARDS BOARD'S (GASB) STATEMENT NO. 27

A.	Development of Pension Cost for fiscal year ending 6-30-01	
1.	Annual Required Contribution	\$ 689,174
2.	Interest on Net Pension Obligation	(186,533)
3.	Amortization of Net Pension Obligation	337,057
4.	Pension Cost (1)+(2)+(3)	839,698
B.	Net Pension Obligation as of 6-30-01	
1.	Net Pension Obligation at Beginning of Year	(2,487,108)
2.	Actual Employer Contribution	1,094,443
3.	Pension Cost	839,698
4.	Net Pension Obligation 6-30-01 (1) - (2) + (3)	(2,741,853)
5.	Increase/(Decrease) in NPO from Beginning of Period	(254,745)
C.	Basic Information	
1.	Amortization Method: Level Dollar	
2.	Amortization Period: 10 years	
3.	Amortization Period: Closed Method	
4.	The employer funding policy is based upon a 1974 City Ordinance (as subsequently modified) requiring an employer contribution of 19.425% of participating payroll. Employee contributions are mandatory at 1.775% of compensation.	
5.	See contents of 7-1-01 actuarial report for other required disclosures.	

Section IV.

GASB Statement No. 27 (Continued)

D. Trend Data

	<u>06-30-01</u>	<u>06-30-00</u>	<u>06-30-99</u>
1. Valuation Date	7-1-01	7-1-00	7-1-99
2. Actuarial Value of Assets	\$24,606,694	\$22,592,151	\$21,883,909
3. Actuarial Accrued Liability	25,891,903	24,412,503	22,835,201
4. Unfunded Actuarial Accrued Liability	1,285,209	1,820,352	951,292
5. Assets as % of Actuarial Accrued Liability	95.0%	92.5%	95.8%
6. Annual Covered Payroll	5,131,857	4,919,721	4,557,143
7. Unfunded Actuarial Liability as % of Payroll	25.0%	37.0%	20.9%

E. Development of Pension Cost for fiscal year ending 6-30-02

1. Annual Required Contribution	\$ 629,182
2. Interest on Net Pension Obligation	(191,930)
3. Amortization of Net Pension Obligation	<u>364,839</u>
4. Pension Cost (1)+(2)+(3)	\$ 802,091

CITY OF GREENVILLE FIREMEN'S PENSION FUND

VALUATION AS OF 07/01/2001

AGE - SERVICE DISTRIBUTION FOR ACTIVE PARTICIPANTS

COMPLETED YEARS OF SERVICE

Age Group	<u>< 1 Yr</u>		<u>1-4 Yrs</u>		<u>5-9 Yrs</u>		<u>10-14 Yrs</u>		<u>15-19 Yrs</u>		<u>20-24 Yrs</u>		<u>25-29 Yrs</u>		<u>30-34 Yrs</u>		<u>35-39 Yrs</u>		<u>40 Yrs & ></u>		
	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	
0-24	3	23642	7	25,638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-29	1	23642	8	27,190	7	29,657	1	30,311	0	0	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	2	26,253	8	29,319	15	31,621	1	35,336	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	1	27,338	3	32,198	12	34,106	12	37,583	1	42,681	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	3	30,225	2	33,061	13	40,551	7	41,175	2	45,021	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	3	38,769	7	45,979	8	45,653	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0	0	0	5	51,254	5	49,170	2	45,024	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	59,989	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0	0	0	0	0	1	61,040	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70&up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0