## **City of Birmingham Retirement and Relief System**

Actuarial Valuation and Review as of July 1, 2007

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May 9, 2008

Board of Managers City of Birmingham Retirement and Relief System 710 North 20th Street, GA 100 City Hall Birmingham, Alabama 35203

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2007. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the upcoming fiscal year and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the Plan and the financial information was provided by the City's Finance Department. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Deborah K. Brigham, FCA, ASA, MAAA, EA.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board of Managers are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA, EA

Vice President and Consulting Actuary

Deborah K. Brigham, FCA, ASA, MAAA, EA

Vice President and Associate Actuary

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#### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the City of Birmingham Retirement and Relief System as of July 1, 2007. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- > The benefit provisions of the Pension Plan, as administered by the Board;
- > The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of July 1, 2007, provided by the Board;
- > The assets of the Plan as of June 30, 2007, provided by the Administrative Office;
- > Economic assumptions regarding future salary increases and investment earnings; and
- > Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

- > The recommended contribution for the upcoming year is \$29,637,800, or 17.66% of payroll. This is an increase of 0.25% of pay over the 17.41% recommended amount last year. City and employee contributions are 13.00% of payroll, producing a deficit of 4.66%. As of June 30, 2007, due to contributions in prior years being greater than the recommended amounts, the System has accumulated a Net Pension Asset of \$10,032,349 (see Exhibit V in Section 4). **Therefore, if the total contributions remain at 13.00% of payroll, the System's funding obligation will be met for the upcoming year.** However, it should be noted that the Net Pension Asset has decreased by over 44% since June 30, 2003, from \$18,012,681 to \$10,032,349. The Net Pension Asset has decreased by an average amount of almost \$2 million per year. At this rate, the Net Pension Asset will be depleted in five years. We will monitor this annually and report to the Board any changes in funding status.
- > The contribution rate includes a normal cost portion, for benefits allocated to the current year, and an amortization of the unfunded actuarial accrued liability. The Entry Age Normal Cost Method, which is used for the funding of this Plan, strives to maintain a level normal cost. This year's normal cost percentage is 14.47% as compared to 14.57% last year.
- > The Plan had a market value rate of return of 9.76% for the year ended June 30, 2007. The actuarial investment rate of return was 7.55%, which exceeded the assumed rate of 7.00% and resulted in an actuarial investment gain of \$4,888,854. The actuarial value of assets is \$935,821,094, or 98.0% of market value.

- > The administrative expense assumption was increased from \$150,000 to \$180,000 for the coming year. There have been no other assumption or plan changes since the prior valuation.
- > Note that the audited financial information received rounds all results to the nearest thousand. The results in this valuation report are shown to the dollar. Therefore, occasionally rounded numbers are combined with unrounded ones.

SECTION 1: Valuation Summary for the City of Birmingham Retirement and Relief System

Summary of Key Val	luation Results
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	2007	2006
Contributions for plan year beginning July 1:		
Recommended	\$29,637,800	\$28,346,705
Recommended contribution as a percentage of payroll	17.66%	17.41%
Actual contributions (employer and employee)		22,713,614
Funding elements for plan year beginning July 1:		
Normal cost, including administrative expenses	\$24,280,510	\$23,723,246
Market value of assets	955,376,508	898,671,013
Actuarial value of assets	935,821,094	898,671,013
Actuarial accrued liability	992,864,448	946,584,547
Unfunded actuarial accrued liability	57,043,354	47,913,534
GASB 25/27 for plan year beginning July 1:		
Annual required employer contributions	\$14,818,900	\$14,173,353
Actual employer contributions		12,006,508
Percentage contributed		84.71%
Funded ratio	94.25%	94.94%
Covered payroll	\$167,807,596	\$162,849,137
Demographic data for plan year beginning July 1:		
Number of retired participants and beneficiaries	2,352	2,255
Number of vested former participants*	211	204
Number of active participants	3,760	3,782
Total payroll	\$167,807,596	\$162,849,137
Average payroll	44,630	43,059

<sup>\*</sup> Includes future pensioners currently receiving benefits from the Supplemental System.

#### A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries. This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1
Participant Population: June 30, 1998 – June 30, 2007

Year Ended June 30	Active Participants	Vested Terminated Participants*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives	
1998	3,762	266	1,757	0.54	
1999	3,942	266	1,784	0.52	
2000	3,933	264	1,857	0.54	
2001	4,081	244	1,906	0.53	
2002	3,878	212	2,017	0.57	
2003	3,867	196	2,095	0.59	
2004	3,915	177	2,158	0.60	
2005	3,802	231	2,239	0.65	
2006	3,782	204	2,255	0.65	
2007	3,760	211	2,352	0.68	

<sup>\*</sup> Includes future pensioners currently receiving benefits from the Supplemental System.

## **Active Participants**

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 3,760 active participants with an average age of 44.6, average years of service of 12.4 years and average payroll of \$44,630. The 3,782 active participants in the prior valuation had an average age of 44.5, average service of 12.5 years and average payroll of \$43,059.

## **Inactive Participants**

In this year's valuation, there were 211 participants with a vested right to a deferred or immediate vested benefit. This includes 185 possible future pensioners currently receiving benefits from the Firemen's and Policemen's Supplemental Pension System.

These graphs show a distribution of active participants by age and by years of service.

CHART 2
Distribution of Active Participants by Age as of June 30, 2007

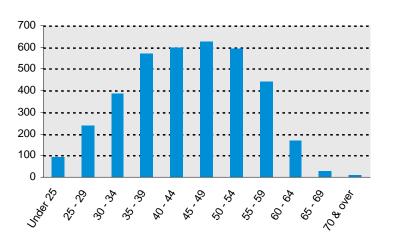
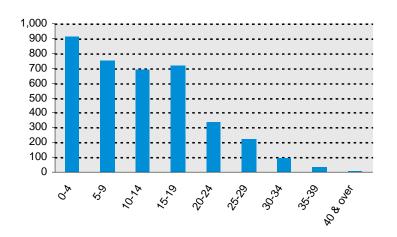


CHART 3

Distribution of Active Participants by Years of Service as of June 30, 2007



## **Retired Participants and Beneficiaries**

As of June 30, 2007, 1,921 retired participants and 431 beneficiaries were receiving total monthly benefits of \$3,995,680. For comparison, in the previous valuation, there were 1,822 retired participants and 433 beneficiaries receiving monthly benefits of \$3,724,803. There was one retired participant in suspended status this year and none in the prior valuation.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.



CHART 4
Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of June 30, 2007

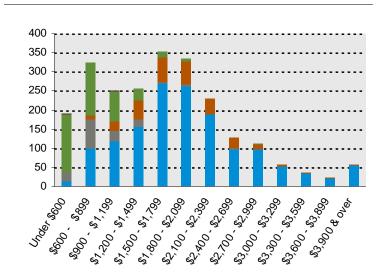
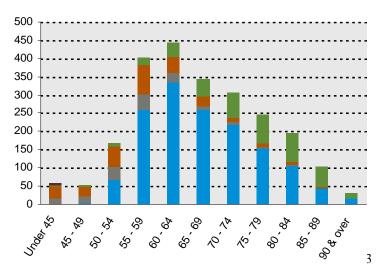


CHART 5
Distribution of Retired Participants and Beneficiaries by Type and by Age as of June 30, 2007



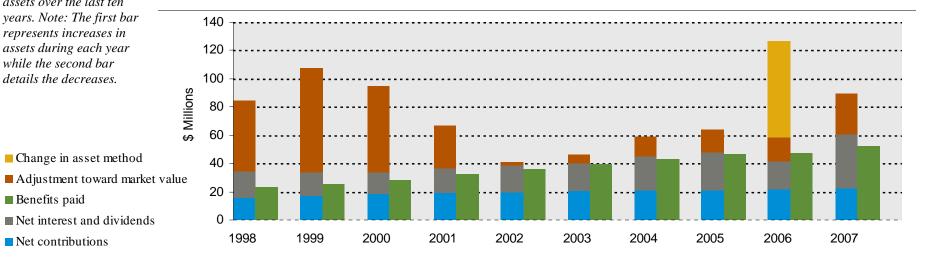
#### **B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C, D and E.

The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

## **CHART 6** Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1998 - 2007



■ Benefits paid

Net contributions

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date. This is the second year of the current asset smoothing method. Last year the funding assets were reset to market value. This year one year of return is being smoothed in, with 20% recognized for funding. Ultimately there will be five bases for unrecognized return.

# CHART 7 Determination of Actuarial Value of Assets for Year Ended June 30, 2007

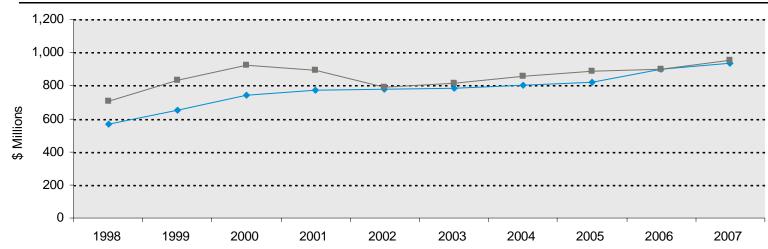
1.	Market value of assets			\$955,376,508
		Original	Unrecognized	
2.	Calculation of unrecognized return*	Amount	Amount	
	(a) Year ended June 30, 2007	\$24,444,268	\$19,555,414	
	(b) Total unrecognized return			19,555,414
3.	Preliminary actuarial value: (1) - (2b)			935,821,094
4.	Adjustment to be within 20% corridor			0
5.	Final actuarial value of assets: (3) + (4)			<u>\$935,821,094</u>
6.	Actuarial value as a percentage of market value: $(5) \div (1)$			98.0%

<sup>\*</sup> Total return minus expected return on a market value basis

Both the actuarial value and market value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years. The actuarial value was reset to market in the 2006 valuation, upon adoption of a new smoothing method.

# CHART 8 Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998 – 2007



#### C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is \$3,834,343, including a gain of \$4,888,854 from investments, and a loss of \$8,723,197 from all other sources. The net experience variation from individual sources other than investments was 0.9% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

#### **CHART 9**

## Actuarial Experience for Year Ended June 30, 2007

1.	Net gain from investments*	\$4,888,854
2.	Net loss from administrative expenses	-30,951
3.	Net loss from other experience	<u>-8,692,246</u>
4.	Net experience loss: $(1) + (2) + (3)$	-\$3,834,343

<sup>\*</sup> Details in Chart 10

#### **Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.00%. The actual rate of return on an actuarial basis for the 2006-2007 plan year was 7.55%.

Since the actual return for the year was greater than the assumed return, the Plan experienced an actuarial gain during the year ended June 30, 2007 with regard to its investments.

This chart shows the calculation of the gain due to investment experience.

#### **CHART 10**

Actuarial Value Investment Experience for Year Ended June 30, 2007

1.	Actual return	\$66,843,172
2.	Average value of assets	885,061,680
3.	Actual rate of return: $(1) \div (2)$	7.55%
4.	Assumed rate of return	7.00%
5.	Expected return: (2) x (4)	\$61,954,318
6.	Actuarial gain: (1) – (5)	<u>\$4,888,854</u>

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages. Based upon this experience and future expectations, we have maintained the assumed rate of return of 7.00%.

This chart shows a history of actuarial and market values investment returns.

CHART 11
Investment Return – Actuarial Value vs. Market Value: 1998 - 2007

	Net Interest and Dividend Income		Recognition of Capital Appreciation		Change in Asset Method		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$18,932,743	3.77%	\$50,068,683	9.97%			\$69,001,426	13.74%	\$94,100,441	15.21%
1999	16,363,537	2.91	73,796,640	13.11			90,160,177	16.02	110,592,177	15.69
2000	15,703,307	2.35	61,285,291	9.19			76,988,598	11.54	99,628,658	12.01
2001	17,874,740	2.44	29,849,535	4.07			47,724,275	6.51	-17,602,046	-1.92
2002	18,574,794	2.42	2,263,863	0.30			20,838,657	2.72	-89,504,028	-10.11
2003	19,852,229	2.58	6,370,511	0.83			26,222,740	3.41	42,649,330	5.48
2004	23,403,588	3.02	14,220,308	1.83			37,623,896	4.85	69,023,086	8.61
2005	27,114,712	3.43	16,148,066	2.04			43,262,778	5.48	50,973,808	6.02
2006	19,901,991	2.46	17,031,771	2.11	\$68,127,085	8.44%	105,060,847	13.01	40,468,583	4.64
2007	38,017,026	4.30	28,826,146	3.25	<u></u>		66,843,172	7.55	86,398,586	9.76
Total	\$215,738,667		\$299,860,814		\$68,127,085		\$583,726,566		\$486,728,595	
						Five-year	average return	6.93%		6.92%
						Ten-year	r average return	8.04%		5.98%

Note: Each year's yield is weighted by the average asset value in that year.

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

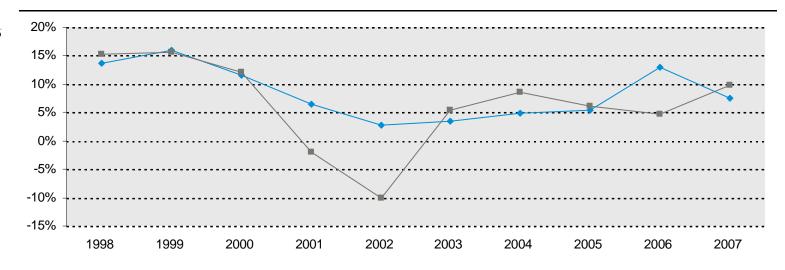
## **Administrative Expenses**

Administrative expenses for the year ended June 30, 2007 totaled \$180,000 compared to the assumption of \$150,000, payable monthly. This resulted in a loss of \$30,951 for the year. We have changed the assumption from \$150,000 to \$180,000 for the current year.

This chart illustrates how this leveling effect has actually worked over the years 1998 - 2007. The actuarial return for the year ended June 30, 2006 reflects a change in method.

CHART 12

Market and Actuarial Rates of Return for Years Ended June 30, 1998 - 2007



## **Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- > the extent of turnover among the participants,
- > retirement experience (earlier or later than expected),
- > mortality (more or fewer deaths than expected),
- > the number of disability retirements, and
- > salary increases different than assumed.

The net loss from this other experience for the year ended June 30, 2007 amounted to \$8,692,246, which is 0.9% of the actuarial accrued liability. This loss was primarily due to fewer deaths and more disability retirements than expected.

#### D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of a normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the payroll for active members to determine the funding rate of 17.66% of payroll. The unfunded actuarial accrued liability is amortized on a level dollar basis over a rolling 30-year period.

Expected contributions for the year are \$21,814,987, or 13.00% of payroll, which leaves a deficit of 4.66% of payroll.

The chart compares this valuation's recommended contribution with the prior valuation.

# CHART 13 Recommended Contribution

	Year Beginning July 1					
	2007 2006					
	Amount	% of Payroll	Amount	% of Payroll		
1. Normal cost*	\$24,106,954	14.37%	\$23,578,977	14.48%		
2. Administrative expenses	173,556	0.10%	144,269	0.09%		
3. Total normal cost: (1) + (2)	\$24,280,510	14.47%	\$23,723,246	14.57%		
4. Actuarial accrued liability	992,864,448		946,584,547			
5. Actuarial value of assets	935,821,094		898,671,013			
6. Unfunded actuarial accrued liability: (4) - (5)	\$57,043,354		\$47,913,534			
7. Payment on unfunded actuarial accrued liability	4,296,186	2.56%	3,608,579	2.22%		
8. Total recommended contribution: (3) + (7), adjusted for timing**	<u>\$29,637,800</u>	<u>17.66%</u>	<u>\$28,346,705</u>	<u>17.41%</u>		
9. Total payroll	\$167,807,596		\$162,849,137			

<sup>\*</sup> Including net obligations from the Supplemental System of -\$1,253,071 for July 1, 2007 and -\$1,009,881 for July 1, 2006 (-\$1,299,600 and -\$1,047,380 adjusted for timing).

<sup>\*\*</sup> Recommended contributions are assumed to be paid at the beginning of every month.

The contribution rates as of July 1, 2007 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

#### **Reconciliation of Recommended Contribution**

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

# CHART 14 Reconciliation of Recommended Contribution from July 1, 2006 to July 1, 2007

Recommended Contribution as of July 1, 2006	\$28,346,705
Effect of rolling 30-year amortization period	-47,675
Effect of change in administrative expense assumption	30,000
Effect of contributions less than recommended contribution	458,105
Effect of investment gain	-385,959
Effect of other gains and losses on accrued liability	688,637
Net impact of other changes	<u>547,987</u>
Total change	<u>\$1,291,095</u>
Recommended Contribution as of July 1, 2007	\$29,637,800

#### E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded within the range of the GASB reporting requirements. Chart 15 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Although GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 16 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 15
Required Versus Actual Contributions

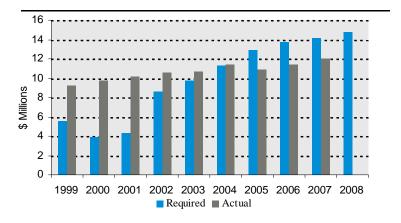
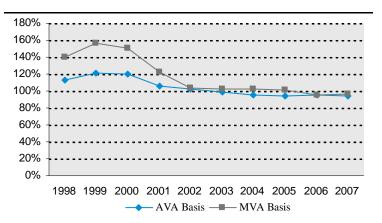


CHART 16 Funded Ratio



SECTION 3: Supplemental Information for the City of Birmingham Retirement and Relief System

EXHIBIT A

Table of Plan Coverage

	Year End	led June 30		
Category	2007	2006	Change From Prior Year	
Active participants in valuation:				
Number	3,760	3,782	-0.6%	
Average age	44.6	44.5	N/A	
Average service	12.4	12.5	N/A	
Total payroll	\$167,807,596	\$162,849,137	3.0%	
Average payroll	44,630	43,059	3.6%	
Account balances	99,216,412	97,736,506	1.5%	
Number with unknown age	0	3	-100.09	
Total active vested participants	2,845	2,952	-3.6%	
Vested terminated participants*	211	204	3.4%	
Retired participants:				
Number in pay status	1,464	1,387	5.6%	
Average age	67.7	67.7	N/A	
Average monthly benefit	\$2,013	\$1,945	3.5%	
Disabled participants:				
Number in pay status	457	435	5.19	
Average age	57.2	56.8	N/A	
Average monthly benefit	\$1,535	\$1,555	-1.3%	
Number in suspended status	1	0	N/A	
Beneficiaries in pay status	431	433	-0.5%	

<sup>\*</sup> Including future pensioners currently receiving benefits from the Supplemental System.

SECTION 3: Supplemental Information for the City of Birmingham Retirement and Relief System

EXHIBIT B
Participants in Active Service as of June 30, 2007
By Age, Years of Service, and Average Payroll

	Years of Service									
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	92	92								
	\$29,642	\$29,642								
25 - 29	238	188	50							
	33,393	32,158	\$38,034							
30 - 34	387	176	155	54	2					
	37,825	32,483	41,213	\$45,734	\$31,869					
35 - 39	573	159	157	198	59					
	42,750	33,139	44,046	47,865	48,042					
40 - 44	598	97	124	153	195	29				
	45,089	33,489	41,067	46,707	50,503	\$56,140				
45 - 49	628	86	91	130	202	95	22	2		
	46,674	34,067	43,689	45,833	48,537	54,712	\$60,607	\$56,135		
50 - 54	595	66	85	93	137	105	80	27	2	
	47,619	31,850	41,089	44,271	47,188	55,280	59,803	53,686	\$59,206	
55 - 59	441	35	60	44	84	75	78	49	15	1
	51,950	39,214	42,252	44,094	45,298	55,601	59,147	70,293	64,889	\$55,929
60 - 64	172	15	22	17	32	28	35	11	9	3
	50,955	36,838	47,843	55,121	44,556	47,515	56,658	65,044	67,521	53,254
65 - 69	26		5	4	4	3	3	2	3	2
	46,521		38,459	42,865	46,367	43,831	41,695	71,007	61,315	38,894
70 & over	10	1		1	2	1	1	1	2	1
	50,739	21,632		33,830	53,135	39,794	30,209	70,963	78,156	48,379
Total	3,760	915	749	694	717	336	219	92	31	7
	\$44,630	\$32,771	\$42,117	\$46,471	\$48,170	\$54,470	\$58,764	\$64,507	\$65,797	\$48,837

EXHIBIT C
Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended Ju	une 30, 2007	Year Ended Ju	une 30, 2006
Contribution income:				
Employer contributions	\$12,006,508		\$11,398,732	
Employee contributions	10,707,106		10,522,586	
Less administrative expenses	<u>-180,000</u>		<u>-160,000</u>	
Net contribution income		\$22,533,614		\$21,761,318
Other income		16,000		36,000
Investment income:				
Interest, dividends and other income	\$41,775,070		\$23,269,581	
Recognition of capital appreciation	28,826,146		17,031,771	
Less investment fees	<u>-3,758,044</u>		<u>-3,367,590</u>	
Net investment income		66,843,172		36,933,762
Total income available for benefits		\$89,392,786		\$58,731,080
Less benefit payments:				
Benefits	-\$50,747,485		-\$46,349,528	
Refunds	<u>-1,495,220</u>		<u>-1,004,360</u>	
Net benefit payments		-\$52,242,705		-\$47,353,888
Change in actuarial asset method		\$0		\$68,127,085
Change in reserve for future benefits		\$37,150,081		\$79,504,277

Note: A portion of the Retirement and Relief System's assets is allocated to the Health Department. The above summary excludes the Health Department portion.

EXHIBIT D

Table of Financial Information

	Year Ended J	une 30, 2007	Year Ended J	une 30, 2006
Cash equivalents		\$81,614,238		\$45,956,720
Accounts receivable:				
Employee loans	\$10,520,293		\$10,708,696	
Accrued interest and dividends	5,826,775		5,641,338	
Employee contributions	1,824,436		1,770,179	
Other funds	<u>580,905</u>		<u>572,010</u>	
Total accounts receivable		18,752,409		18,692,223
Investments:				
Corporate stock	\$430,715,663		\$413,805,416	
Debt securities	425,718,893		421,853,922	
Total investments at market value		<u>856,434,556</u>		835,659,338
Total assets		\$956,801,203		\$900,308,281
Less accounts payable		-\$1,424,695		-\$1,637,268
Net assets at market value		<u>\$955,376,508</u>		\$898,671,013
Net assets at actuarial value		<u>\$935,821,094</u>		\$898,671,013

SECTION 3: Supplemental Information for the City of Birmingham Retirement and Relief System

EXHIBIT E

Development of the Fund Through June 30, 2007

Year Ended June 30	Employer Contributions	Employee Contributions	Other Income	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1998	\$8,111,773	\$7,490,379	\$41,000	\$69,001,426	\$48,400	\$23,461,978	\$566,830,600
1999	9,215,729	8,026,104	0	90,160,177	56,400	25,617,710	648,558,500
2000	9,784,949	8,542,670	23,380,200**	76,988,598	46,100	28,310,977	738,897,840
2001	10,151,206	8,999,970	26,000	47,724,275	102,900	32,242,930	773,453,461
2002	10,537,461	9,521,128	31,000	20,838,657	92,000	35,684,461	778,605,246
2003	10,697,621	9,845,626	59,000	26,222,740	105,000	39,678,777	785,646,456
2004	11,347,715	10,373,268	24,000	37,623,896	292,000	43,111,069	801,612,266
2005	10,881,632	10,210,996	79,000	43,262,778	211,000	46,668,936	819,166,736
2006	11,398,732	10,522,586	36,000	105,060,847**	* 160,000	47,353,888	898,671,013
2007	12,006,508	10,707,106	16,000	66,843,172	180,000	52,242,705	935,821,094

<sup>\*</sup> Net of investment fees.

<sup>\*\*</sup> Includes \$23,338,200 transferred from Library Board Employees' System.

<sup>\*\*\*</sup> Includes effect of change in asset method.

## **EXHIBIT F**

## Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2007

1. Unfunded actuarial accrued liability at beginning of year	\$47,913,534
2. Normal cost at beginning of year	23,723,246
3. Total contributions	-22,713,614
4. Interest	
(a) For whole year on $(1) + (2)$	\$5,014,575
(b) Monthly on (3)	<u>-728,729</u>
(c) Total interest	<u>4,285,846</u>
5. Expected unfunded actuarial accrued liability	\$53,209,012
6. Change due to experience loss	<u>3,834,342</u>
7. Unfunded actuarial accrued liability at end of year	<u>\$57,043,354</u>

#### **EXHIBIT G**

#### **Definitions of Pension Terms**

The following list defines certain technical terms for the convenience of the reader:

## Assumptions or Actuarial Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) <u>Investment return</u> the rate of investment yield that the Plan will earn over the long-term future;
- (b) <u>Mortality rates</u> the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) <u>Retirement rates</u> the rate or probability of retirement at a given age;
- (d) <u>Turnover rates</u> the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

#### **Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

## Actuarial Accrued Liability For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

## Actuarial Accrued Liability For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

# Unfunded Actuarial Accrued Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

**Amortization of the Unfunded** 

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial

accrued liability.

**Investment Return:** The rate of earnings of the Plan from its investments, including interest, dividends and

capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one

year to the next.

EXHIBIT H
Comparative Summary of Principal Valuation Results

	Year Ended June 30, 2007	Year Ended June 30, 2006
Participant data		
Active members	3,760	3,782
Total annual payroll	\$167,807,596	\$162,849,137
Retired members and beneficiaries	2,353	2,255
Total annualized benefit	\$47,952,960	\$44,697,636
Terminated vested members	25	34
Total annualized benefit	\$329,772	\$672,114
Future pensioners currently receiving benefits from Supplemental System	186	170
Total annualized benefit	\$6,386,328	\$5,498,190
Actuarial value of assets	\$935,821,094	\$898,671,013
Actuarial accrued liability:		
Active members	454,758,774	440,535,022
Terminated vested members	2,836,864	5,966,275
Retired members and beneficiaries	479,746,661	448,158,314
Future pensioners currently receiving benefits from Supplemental System	<u>55,522,149</u>	<u>51,924,936</u>
Total	\$992,864,448	\$946,584,547
Unfunded actuarial accrued liability	57,043,354	47,913,534

EX	HIBIT I		
Su	mmary of Actuarial Valuation Results as of July 1, 2007		
The	e valuation was made with respect to the following data supplied to us:		
1.	Retired participants as of the valuation date (including 431 beneficiaries in pay status and one retired participant in suspended status)		2,353
2.	Participants inactive during year ended June 30, 2007 with vested rights (including 185 future pensioners currently receiving benefits from the Supplemental System)		211
3.	Participants active during the year ended June 30, 2007		3,760
	Fully vested	2,845	
	Not vested	915	
The	e actuarial factors as of the valuation date are as follows:		
1.	Normal cost, including administrative expenses		\$24,280,510
2.	Actuarial accrued liability		992,864,448
	Retired participants and beneficiaries	\$479,746,661	
	Inactive participants with vested rights*	58,359,013	
	Active participants	454,758,774	
3.	Actuarial value of assets (\$955,376,508 at market value as reported by the City)		935,821,094
4.	Unfunded actuarial accrued liability		\$57,043,354

<sup>\*</sup> Includes liability for future pensioners currently receiving benefits from the Supplemental System.

## EXHIBIT I (continued)

## Summary of Actuarial Valuation Results as of July 1, 2007

Th	e determination of the recommended contribution is as follows:	
1.	Normal cost	\$24,106,954
2.	Administrative expenses	<u>173,556</u>
3.	Total normal cost: $(1) + (2)$	\$24,280,510
4.	Payment on unfunded actuarial accrued liability	4,296,186
5.	Total recommended contribution: (3) + (4), adjusted for timing	<u>\$29,637,800</u>
6.	Total payroll	\$167,807,596
7.	Total recommended contribution as a percentage of projected payroll: $(5) \div (6)$	17.66%

SECTION 4: Reporting Information for the City of Birmingham Retirement and Relief System

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended June 30	Annual Required Contributions	Actual Contributions	Percentage Contributed
2001	\$4,347,350	\$10,151,206	233.5%
2002	8,580,579	10,537,461	122.8%
2003	9,756,787	10,697,621	109.6%
2004	11,290,871	11,347,715	100.5%
2005	12,875,198	10,881,632	84.5%
2006	13,742,543	11,398,732	82.9%
2007	14,173,353	12,006,508	84.7%
2008	14,818,900		

SECTION 4: Reporting Information for the City of Birmingham Retirement and Relief System

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll* [(b) - (a)] / (c)
07/01/2001	\$773,453,461	\$727,360,834	-\$46,092,627	106.34%	\$149,422,297	0.00%
07/01/2002	778,605,246	758,085,228	-20,520,018	102.71%	151,180,057	0.00%
07/01/2003	785,646,456	796,083,861	10,437,405	98.69%	152,242,441	6.86%
07/01/2004	801,612,266	838,485,603	36,873,337	95.60%	158,062,119	23.33%
07/01/2005	819,166,736	875,792,038	56,625,302	93.53%	158,898,488	35.64%
07/01/2006	898,671,013	946,584,547	47,913,534	94.94%	162,849,137	29.42%
07/01/2007	935,821,094	992,864,448	57,043,354	94.25%	167,807,596	33.99%

<sup>\*</sup> Not less than zero

## **EXHIBIT IV**

## **Supplementary Information Required by the GASB**

Valuation date	July 1, 2007			
Actuarial cost method	Entry Age Normal Cost Method			
Amortization method	Level dollar			
Remaining amortization period	Rolling, 30 years			
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecogn return is equal to the difference between the actual market return and the expected return the actuarial value, and is recognized over a five - year period, further adjusted, if necess to be within 20% of the market value.			
Actuarial assumptions:				
Investment rate of return	7.00%			
Projected salary increases:				
Inflation	3.50%			
Merit, longevity, etc.	Varies from 0.00% to 6.00%			
Plan membership:				
Retired participants and beneficiaries receiving benefits	2,352			
Terminated participants entitled to, but not yet receiving benefits	211			
Active participants	<u>3,760</u>			
Total	6,323			

SECTION 4: Reporting Information for the City of Birmingham Retirement and Relief System

EXHIBIT V

Development of the Net Pension Obligation and the Annual Pension Cost Pursuant to GASB 27

Plan Year Ended June 30	Employer Annual Required Contribution (a)	Employer Amount Contributed* (b)	Interest on NPO (h)* 7.00%* (c)	ARC Adjustment (h) / (e) (d)	Amortization Factor (e)	Pension Cost (a) + (c) - (d) (f)	Change in NPO (f) – (b) (g)	NPO Balance NPO + (g) (h)
2002	\$8,580,579	\$10,537,461	-\$1,236,872	-\$1,923,386	8.5743	\$9,267,093	-\$1,270,368	-\$17,761,997
2003	9,756,787	10,697,621	-1,332,150	-2,022,300	8.7831	10,446,937	-250,684	-18,012,681
2004	11,290,871	11,347,715	-1,350,951	-2,089,340	8.6212	12,029,259	681,544	-17,331,137
2005	12,875,198	10,881,632	-1,299,835	-2,035,605	8.5140	13,610,968	2,729,336	-14,601,802
2006	13,742,543	11,398,732	-1,095,135	-1,150,095	12.6962	13,797,503	2,398,771	-12,203,031
2007	14,173,353	12,006,508	-915,227	-919,064	13.2777	14,177,190	2,170,682	-10,032,349

<sup>\*</sup> Interest was 7.50% prior to the year ended June 30, 2007.

#### **EXHIBIT VI**

**Actuarial Assumptions and Actuarial Cost Method** 

**Mortality Rates:** 

Healthy: 1983 Group Annuity Mortality Table Disabled: Healthy table set forward 10 years

## **Termination Rates Before Retirement:**

Rate (%)

	Mor	tality	Dis	ability		Withdrawal	
Age	Male	Female	General	Fire & Police	General*	Fire**	Police***
20	0.04	0.02	0.09	0.18	6.53	2.52	4.58
25	0.05	0.03	0.13	0.26	6.35	1.80	3.26
30	0.06	0.03	0.17	0.33	6.08	1.38	2.51
35	0.09	0.05	0.22	0.44	5.64	1.06	1.93
40	0.12	0.07	0.33	0.66	5.03	0.80	1.45
45	0.22	0.10	0.54	1.08	4.24	0.54	0.99
50	0.39	0.16	0.91	1.82	2.97	2.27	2.48
55	0.61	0.25	1.51	3.03	1.13	5.00	5.00
60	0.92	0.42	2.44	4.88	0.00	0.00	0.00

<sup>\*</sup> Withdrawal rates shown for general employees are multiplied by 1.25 and have 0.015 added during the first five years of employment.

<sup>\*\*</sup> Withdrawal rates shown for firemen are multiplied by 3.8181 during the first five years of employment.

<sup>\*\*\*</sup> Withdrawal rates shown for policemen are multiplied by 3.0 during the first five years of employment.

## **Retirement Rates:**

Fire and Police employees are assumed to retire on a Retirement and Relief pension in accordance with the following rates:

Fire		Police	
Years of Service	Rate	Years of Service	Rate
20	5%	20	20%
21-22	5	21-22	7
23	10	23	7
24	10	24	3
25	15	25	10
26	5	26	10
27	10	27	10
28	15	28	10
29	30	29	30
30-32	0	30-32	0
33	50	33	50
34	25	34	25
35	100	35	100
a 1 1			

General employees are assumed to retire, after meeting the service requirements, in accordance with the following rates:

<u>Age</u>	Rate*
Under 50	0%
50-51	35
52-54	10
55	20
56-59	10
60	5
61-66	20
67-74	25
Over 74	100

<sup>\*</sup> Rates are decreased by 75% when employee has 31-32 years of service. Rates are increased to 1.5 times the rate shown when employee reaches 33 years of service.

SECTION 4: Reporting Information for the City of Birmingham Retirement and Relief Systemm

**Retirement Age for Inactive** 

**Vested Participants:** 60

**Unknown Data for Participants:** Same as those exhibited by Participants with similar known characteristics. If not

specified, Participants are assumed to be male.

**Percent Married:** 1972 Social Security Awards

**Age of Spouse:** Females 3 years younger than males

On the Job Disability:

**General** 30% **Fire and Police** 90%

On the Job Death:

**General** 5% **Fire and Police** 15%

**Net Investment Return:** 7.00%

**Salary Scale:** 

## Annual increase Rate (%)

_		Fire and
<u>Age</u>	<u>General</u>	<u>Police</u>
20	7.50	9.50
25	6.75	7.60
30	6.00	6.20
35	5.50	5.10
40	5.00	4.50
45	4.50	4.00
50	4.25	4.00
55	4.00	4.00

Includes allowance for inflation of 3.50% per year.

SECTION 4: Reporting Information for the City of Birmingham Retirement and Relief Systemm

\$180,000, payable monthly, equivalent to \$173,556 at the beginning of the year.
Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant would have commenced employment if the plan had always been in existence. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect. Actuarial Liability is allocated by salary.

#### **EXHIBIT VII**

## **Summary of Plan Provisions**

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

**Plan Year:** July 1 through June 30

#### **Normal Pension:**

Eligibility A participant may retire at (a) age 60 if he has completed 5 years of credited service,

or (b) any age if he has completed 30 years of credited service.

Amount: 2.50% of final average salary for each year of credited service. This amount cannot

be greater than 75.0% of the final average salary nor less than \$400 per month.

Service credit used to determine the benefit amount may be increased by credit

granted for unused sick leave (on a percent of possible total basis).

Final average salary is defined as the highest average compensation over any

36-month period of the employee's last ten years of participation.

## **Early Retirement Pension:**

Eligibility A City participant may retire at age 55 if he has completed 25 years of credited

service.

Amount 1.85% of final average salary for each year of credited service.

Disability:		
Ordinary		
Service Requirement	5 years credited service.	
Amount	2.00% of final average salary at disability for each year of credited service, payable immediately. This amount cannot be greater than 60% of final average salary nor less than \$400 per month.	
Extraordinary		
Service Requirement	None	
Amount	70% of final monthly salary at disability, payable immediately. The amount cannot be less than \$400 per month.	
Termination:	To a participant terminating before becoming eligible for a vested deferred pension from the plan, a lump sum of his or her own contributions without interest is payable.	
	Participants terminating after 5 years of actual service who leave their contributions in the System Fund have a non-forfeitable right to a monthly pension beginning at age 60. The form and amount of the pension are the same as the normal pension.	
Death Benefits:	If a participant dies prior to his or her attainment of eligibility for retirement, a lump sum of his or her own contributions without interest is payable to his or her beneficiary.	
	If an active participant who is eligible to retire or a retired participant dies, 60% of the accrued pension benefit is payable to the surviving spouse, if any, during his or her remaining lifetime. If an active participant (other than a participant of the Firement and Policemen Supplemental System) who is not eligible to retire, but who has completed 5 years of service dies, a portion of 60% of the accrued pension benefit is payable to the spouse during her remaining lifetime. This portion is defined as follows:	

	Number of Years <u>of service</u>	Portion of his entitled benefit		
	have attained age 60 or (b) the da	50% 60 70 80 90 100 lier of (a) the date that the deceased participant would ate the deceased participant would have completed 20 pove, for all participants, an annuity of 60% of salary		
	is payable to the surviving spouse and 10% is payable to a minor child if death is service connected; the maximum for spouse and children is 75% and the maximum for children if no spouse is 60%. The minimum spouse benefit is \$320 per month.  *60% benefit is effective July 1, 2002. Prior to July 1, 2002 the percentage was 45%.			
Back-DROP:	An employee with 33 years of service or who is at least age 63 with 23 years of service may elect up to a 36-month Back-DROP. The employee's monthly benefit will be calculated using service and final average salary as of the Back-DROP date and the employee will receive a lump sum equal to the number of months dropped back times the retirement benefit, accumulated with interest.			
Participation:	All qualified employees of the R participate.	etirement and Relief System are required to		
<b>Contributions:</b>	The City and the City employees	each contribute 6.50% of compensation for the year.		
Changes in Plan Provisions: 6184671v1/02030.001	There have been no changes in p	lan provisions since the last valuation.		