MOCKENHAUPT
BENEFITS GROUP

ACTUARIAL VALUATION REPORT

Revised for Act 81 of 2004

for the

City of Pittsburgh

Firemen's Relief and Pension Fund

as of

January 1, 2003

Report Date: September 3, 2004

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Preface to Actuarial Valuation Report

Revised for Act 81 of 2004

This revised actuarial valuation of the City of Pittsburgh Firemen's Relief and Pension Fund as of January 1, 2003 has been prepared due to the City's election under Act 81 of 2004 to extend the amortization of investment losses for 2001 and 2002. The 2002 investment loss and the remaining balance, as of January 1, 2003, of the investment loss in 2001 are each amortized over a 30-year period beginning January 1, 2003. This valuation is the same in all other respects as the preceding report dated March 29, 2004.

Section Three, Section Five Tables 03-3 and 03-4, and Section Ten Table 03-7 have been appropriately modified to reflect this change. Section One has not been modified. Any reference to the amortization payment therein is based upon the original amount before the election. The effect of the election is to reduce the aggregate amortization payment by $1,218,871 from $8,363,333 to $7,144,462. All other sections of this report remain the same as the earlier report.

Section One: Introduction

At the request of the City of Pittsburgh, we have completed an actuarial valuation of the City of Pittsburgh Firemen's Relief and Pension Fund as of January 1, 2003. Our actuarial valuation is based upon participant data as of January 1, 2003 and upon asset information as of December 31, 2002 as provided by the City. This report has been completed in accordance with generally accepted actuarial principles and practices, and reflects our current understanding of applicable laws and regulatory requirements.

This valuation was prepared to satisfy the funding and disclosure requirements of Act 205 of 1984. It also contains the cost components that may be used to compute the Plan's Minimum Municipal Obligation (MMO).

The City has qualified under Distress Level III, as defined in Act 205 of 1984. The City is also permitted to utilize provisions of Act 82 of 1998. As a result, the unfunded actuarial accrued liability as of January 1, 1998 is being amortized over 40 years.

Under Act 205, a Level III municipality is mandated to aggregate the assets of its pension plans into a single trust. An annual calculation is made to determine each Plan's portion of the assets. The receipts and disbursements for each Plan are added to the Plan's allocated value from the prior year. Then, the year's investment income is allocated proportionately to each Plan in accordance with procedures set forth in Act 205. As of December 31, 2002, the calculated value of assets in the Firemen's Relief and Pension Fund is $114,527,374. Section Nine contains exhibits illustrating the calculation of this amount.

2003 Results

Certain highlights of this actuarial valuation compared with the prior valuation are shown in Section Three. The use of pension bond proceeds to reduce the Unfunded Actuarial Accrued Liability has split the funding of the pension plan into actuarial costs and debt service. The actuarial costs consist of Normal Cost, administrative expense contributions and amortization payments to eliminate the remainder of the Unfunded Actuarial Accrued Liability. The actuarial information used to develop contribution requirements according to the rules of Act 205 is shown in Section Five. Debt service payments repay the money borrowed and subsequently deposited into the plan. Information concerning the annual debt service is contained in Section Ten. The demographics of the Plan population are summarized in Section Eight.

The actuarial cost components as of January 1, 2003 compared to the prior year are as follows:

	Current Year 2003	Prior Year 2002
Normal Cost as a Percentage of Total W-2 Payroll	9.761%	10.196%
Expenses as a Percentage of Total W-2 Payroll	1.400%	1.500%
Amortization Payment	$8,363,333	$6,054,411

The change in actuarial costs from year to year can be affected by changes in Plan provisions, assumption changes, and experience changes. Pension bonds were issued in March 1998. The debt service payment for 2003 is approximately $5.29 million.

Act 82

Act 82 of 1998 also has an impact on the actuarial costs of this pension plan. Act 82 allowed the City to change the amortization schedule for its Unfunded Actuarial Accrued Liability since pension bond proceeds were deposited into the pension plan during 1998 that changed the ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability by more than 25 percent.

Act 82 allows the City to amortize the January 1, 1998 Unfunded Actuarial Accrued Liability, reduced by pension bond proceeds deposited during 1998, over a 40-year period. The annual amortization payment is calculated in several steps. An amortization payment is calculated that eliminates the Unfunded Actuarial Accrued Liability net of 1998 bond proceeds over a 40 year period using 8.75 percent interest. Next, the future value of these payments at the end of the 40-year period is calculated using 8.75 percent interest. Finally, an amortization payment is calculated using 10 percent interest that will have the same future value as the previous calculation. The 10 percent amortization amount becomes the amortization payment starting in 1998.

Act 82 requires that valuations include a comparative interest rate tabulation. This annual tabulation compares the balance of the accumulated Act 82 amortization payments using the actual earnings of the fund during the year with the balance assuming a 10 percent rate of return. If the fund earns more than 10 percent during the year, there will be an actuarial gain. If the fund earns less than 10 percent, there will be an actuarial loss. The gain or loss from the comparative interest rate tabulation will be combined with the other actuarial gains or losses for the year to determine the aggregate annual gain or loss. The comparative interest rate tabulation is included in Table 03-2. A similar calculation is included in Table 03-6 which is part of the information that will be used to determine State Aid.

Assumption Changes

Act 205 requires that the City have an experience study prepared every four years. The purpose of the experience study is to compare the plan's actual experience with the valuation assumptions. This comparison can indicate that actuarial assumptions should be changed.

Several assumption changes have been made as of January 1, 2003, to implement some of the changes recommended in the January 1, 2001 experience study. The assumed retirement age is no longer a single calculated age for each participant. A participant is now assumed to have a probability of retirement in each year from early retirement eligibility through an assumed maximum retirement age. The rates of retirement have been based on the actual retirement ages of plan participants. The interest rate used to calculate the liabilities has been lowered from 9.0 percent to 8.75 percent. The annual assumed salary increase has been lowered to 5.75 percent per year. Also, the rates of termination and disablement have been changed. These assumption changes decreased the Unfunded Actuarial Accrued Liability by $17,287,129. The assumptions currently in use are shown in Section Seven.

Benefit Changes

Act 64 of 2002 mandated ad hoc cost-of-living adjustments for retired and disabled firefighters. These adjustments increased the Unfunded Actuarial Accrued Liability by $6,733,210. In future years, a portion of the state aid pool will be used to provide reimbursements to municipalities to assist funding these ad hoc adjustments. Starting in 2003, longevity pay will be included in the pay used to determine employee contributions and benefit amounts. This change increased the Unfunded Actuarial Accrued Liability by $957,341. The salary scale assumption includes an adjustment of 0.20 percent per year to account for the longevity in the payroll.

Experience Changes

Plan experience during the year affects the Plan cost for the following year. Both the normal cost and the amortization payment can change. Normal cost is the portion of the total cost allocated to the current year by the actuarial cost method. Unless Plan provisions or assumptions change, normal cost usually remains fairly stable, changing only moderately from year to year. The changes that do occur relate to changes in the age and service distribution of the participant group.

Generally, experience changes affect the current year's actuarial gain or loss to a greater degree than they affect normal cost. Since foresight can never be perfect, actuarial assumptions will not perfectly match the experience that actually develops from year to year. The determination and amortization of actuarial gains and losses provide the mechanism for correcting these gains and losses and maintaining the Plan's funding on a sound basis.

The actuarial gain or loss computed in the current valuation reflects differences since the prior valuation between actual experience and the experience anticipated by the actuarial assumptions. Act 205 requires the amortization of actuarial gains or losses over a 15-year period. An actuarial gain will reduce the total amortization payment and an actuarial loss will increase the payment.

The Plan experienced a net actuarial loss of $26,627,216. The major factor contributing to the actuarial loss was a return on investment less than the 9.0 percent assumed in the prior valuation.

Accounting Information

This valuation also includes certain actuarial information required for accounting purposes. Section Six is a summary of the actuarial present values of accumulated Plan benefits and the pension benefit obligation.

Section Two: Certification

In the actuary's opinion, the actuarial assumptions used in the valuation are reasonably related to the experience of the Plan and to reasonable expectations. They represent the actuary's best estimate of anticipated experience under the Plan. To the best of our knowledge, the report is complete and accurate, based on the data herein.

We will be happy to answer any questions concerning this report and provide further information as needed.

MOCKENHAUPT BENEFITS GROUP

Prepared and certified by:

G. Herbert Loomis, F.S.A., E.A., M.A.A.A.
Consulting Actuary

Section Three: Valuation Highlights

Participant Count	01/01/03	01/01/02	Change
Total Active	867	898	(31)
Vested	391	395	(4)
Not Vested	476	503	(27)
Total In Payment Status	973	984	(11)
Retirement Benefits	410	416	(6)
Disability Benefits	211	211	0
Survivor Benefits	352	357	(5)
Deferred	1	1	0
Total	**1,841**	**1,883**	**(42)**

Average Monthly Benefit

In Payment Status			
Retirement Benefits	$1,681	$1,597	$ 84
Disability Benefits	$1,448	$1,354	$ 94
Survivor Benefits	$ 499	$ 489	$ 10
Deferred	$2,877	$2,877	$ 0

Active Participant Averages

Hire Age	29.3	29.3	0
Attained Age	46.5	45.9	0.6
Normal Retirement Age	53.4	53.3	0.1
Assumed Future Service	15.0	13.0	2.0
Monthly Compensation	$5,008	$4,751	$257

Financial Data

Market Value of Assets	$114,527,374	$136,441,784	$(21,914,410)
Accumulated Employee Contributions	$ 34,995,861	$ 36,880,777	$ (1,884,916)

Cost Components

Normal Cost as a percentage of total payroll	9.761%	10.196%	-0.435%
Expenses as a percentage of total payroll	1.400%	1.500%	-0.100%
Total	11.161%	11.696%	-0.535%
Amortization Payment	$7,144,462	$6,054,410	$1,090,052

Section Four: Summary of Plan Provisions

Plan Year	▼ Twelve-month period beginning January 1 and ending December 31
Plan Established	▼ May 25, 1933
Principal Definitions	
Employee	▼ Any uniformed employee of the City of Pittsburgh Bureau of Fire
Retirement Benefit Commencement Date	▼ Assumed to be the first day of the month coincident with or next following eligibility for and election to retire
Service Increment	▼ Additional monthly benefit of $20 for each completed year of service in excess of 20 years, excluding years of service after age 65
Service	▼ Completed years of service calculated from date of hire through date of retirement or severance, plus periods of service purchased
Normal Form of Payment	▼ Monthly pension benefit payable for life
Participation Requirements	
Entry date	▼ Date of hire
Compensation	▼ Total W-2 wages
Average Compensation	▼ Compensation averaged over the 36-month period prior to retirement or severance
Normal Retirement	
Eligibility	▼ Later of age 50 or Completion of 20 years of service
Members hired before January 1, 1976	▼ Completion of 20 years of service
Monthly Benefit	▼ Equal to 50% of average compensation plus service increment, if any
Late Retirement	
Eligibility	▼ Employment beyond normal retirement
Amount of Benefit	▼ Normal retirement benefit based upon average compensation as calculated at actual retirement
Disability	
Eligibility	▼ Permanent disablement in line of duty *or* ▼ Permanent disablement (not in line of duty) after completing 10 years of service

Benefit Amount	▼ 50% of earnings in year prior to disablement
Benefit Commencement Date	▼ First day of calendar month following determination of disablement *and* ▼ Continuing for the duration of disability prior to normal retirement date and life thereafter
Vesting	▼ If member completed 20 years of service, may collect normal retirement benefit based on average compensation at termination (providing terminated member continues contributions at rate in effect at termination) ▼ Benefit deferred to age 50
Death Benefits	
Accidental Death	▼ Benefit plus return of member's accumulated contributions ▼ Benefit plus workers' compensation or other payments is equal to 50% of member's wages at death ▼ Payable for 500 weeks or until surviving spouse dies or remarries ▼ If no surviving spouse or unmarried children, dependent parents receive payments
- *Children Benefits (No surviving spouse/ or discontinued payment to surviving spouse)*	▼ Unmarried child under age 18 receives payments equal to 25% of payments to spouse ▼ Total payments to one family may not exceed 50% of member's wages at time of death ▼ $60 minimum monthly payment if only one child ▼ If maximum amount payable, divide equally among entitled children ▼ Payments terminate when child reaches age 18, dies, marries ▼ Payments may continue indefinitely to incompetent child
Death Prior to Retirement Active service/ not accidental	▼ If so elected, spouse paid benefit equal to 50% of pension member would have received if retired on date of death ▼ No election, accumulated contributions without interest paid to beneficiary or estate

Death After Retirement

- ▼ If so elected, spouse paid benefit equal to 50% of pension member was receiving
- ▼ No surviving spouse, benefit may be paid to surviving children or dependent parents

Lump Sum Benefit

- ▼ Lump sum of $1,200 to beneficiary of any deceased member

Employee Contributions

- ▼ 6 percent of compensation plus $1 per month
- ▼ $1 per month ceases at age 65
- ▼ If surviving spouse benefit elected, add 1/2 percent of compensation

Section Five: Development of Contribution Requirements

Table 03-1: Normal Cost and Actuarial Accrued Liability

Normal Cost

Retirement Benefits	$3,193,997
Disability Benefits	1,548,358
Preretirement Death Benefits	426,873
Postretirement Death Benefits	3,341
Refunds to Withdrawals	122,679
Medicare Premium Benefits	0
Vested Benefits	11,104
Total	**$5,306,352**

Actuarial Accrued Liability

Actuarial Present Value of Benefits at Attained Age

	Deferred	In Payment	Active	All
Retirement Benefits	$235,502	$ 69,719,328	$121,827,998	$191,782,828
Disability Benefits	0	30,295,618	35,334,163	65,629,781
Survivor Benefits	0	15,250,253	0	15,250,253
Preretirement Death Benefits	0	0	8,390,367	8,390,367
Postretirement Death Benefits	0	0	113,361	113,361
Refunds to Withdrawals	0	0	1,520,439	1,520,439
Medicare Premium Benefits	0	0	0	0
Vested Benefits	0	0	236,864	236,864
Total	**$235,502**	**$115,265,199**	**$167,423,192**	**$282,923,893**

Actuarial Present Value of Future Normal Costs

Retirement Benefits	$31,785,384	
Disability Benefits	15,456,392	
Preretirement Death Benefits	4,225,745	
Postretirement Death Benefits	28,460	
Refunds to Withdrawals	1,200,574	
Medicare Premium Benefits	0	
Vested Benefits	135,335	
Total	**$52,831,890**	**($52,831,890)**

Actuarial Accrued Liability	**$230,092,003**

Unfunded Actuarial Accrued Liability

Actuarial Accrued Liability	$230,092,003
Actuarial Value of Assets	(114,527,374)
Unfunded Actuarial Accrued Liability	**$ 115,564,629**

Table 03-2: Actuarial (Gain) Loss Determination

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2002		$ 96,931,469
Normal Cost Assumed		6,242,495
Interest Charged at Valuation Rate		9,285,657
Contributions Made		
- *Municipality*	$ 662,790	
- *State Aid Allocated*	4,369,600	
- *Employees*	3,524,430	(8,556,820)
Interest Credited at Valuation Rate		(292,950)
Special Adjustment for Increase in Act 82 Interest Rate		(264,550)
Expected Unfunded Actuarial Accrued Liability Before Adjustments		$103,345,301
Experience from Investment Return		
- *Comparative Interest Rate Amortization Tabulation (Gain) Loss*	$ 5,757,922	
- *Other Investment Return (Gain) Loss*	22,071,184	27,829,106
Experience (Gain) Loss from all Other Sources		(6,013,200)
Increase (Decrease) in Actuarial Accrued Liability		
- *Benefit Modifications for Actives*	$ 957,341	
- *Benefit Modifications for Retirees*	6,733,210	
- *Changes in Actuarial Assumptions*	(17,287,129)	(9,596,578)
Actual Unfunded Actuarial Accrued Liability		$115,564,629

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2002		$ 21,815,906
Actuarially Required Contributions and Bond Proceeds with Interest	$13,661,080	
Actual Contributions with Interest	(8,849,770)	
Contribution (Gain) Loss		4,811,310
Loss (Gain) to be Amortized		$26,627,216

Comparative Interest Rate Amortization Tabulation

Balance Calculated Using Actual Investment Return		
Act 82 Amortization Balance at January 1, 2002	$22,121,702	
Act 82 Amortization Payment for 2002	4,333,255	
Comparative Interest Rate Balance at January 1, 2002		$26,454,957
Actual Investment Return on Balance		(3,112,426)
Actual Act 82 Amortization Balance at January 1, 2003		$23,342,531
Balance Calculated Using 10 Percent Investment Return		
Comparative Interest Rate Balance at January 1, 2002		$26,454,957
Interest at 10 Percent		2,645,496
Comparative Act 82 Amortization Balance at January 1, 2003		$29,100,453
Comparative Interest Rate Amortization Tabulation (Gain) Loss		$ 5,757,922

Table 03-3: Amortization of Unfunded Actuarial Accrued Liability

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Rem. Pymts	Annual Amount
Initial	$73,627,561	1998	2037	$82,891,483	35	$ 4,333,255
Assump. Change	$ (2,712,163)	1998	2017	$(2,394,894)	15	$ (269,183)
Experience Gain	$ (7,309,856)	1999	2013	$ (6,171,304)	11	$ (824,062)
Experience Gain	$ (10,034,869)	2000	2014	$(8,914,491)	12	$(1,130,373)
Experience Loss	$ 14,852,702	2001	2015	$13,795,441	13	$ 1,671,810
Experience Loss	$ 1,151,699	2002	2016	$ 1,112,474	14	$ 129,540
Investment Loss	$ 18,857,549	2002	2032	$18,215,282	30	$ 1,594,334
Aggregate Changes Through Last Val.	N/A	N/A	N/A	$ 15,642,508	N/A	$ 1,172,066
Assump. Change	$(17,287,129)	2003	2002	$(17,287,129)	20	$(1,710,460)
Ben. Mod. - Active	$ 957,341	2003	2002	$ 957,341	20	$ 94,723
Ben. Mod. - Retired	$6,733,210	2003	2012	$ 6,733,210	10	$ 954,163
Experience Gain	$(1,201,890)	2003	2017	$(1,201,890)	15	$ (135,091)
Investment Loss	$27,829,106	2003	2032	$27,829,106	30	$ 2,435,806
Agg. Changes-2003	N/A	N/A	2024	$ 17,030,638	22	$ 1,639,141
Aggregate Changes	N/A	N/A	2035	$ 32,673,146	33	$ 2,811,207
Aggregate	N/A	N/A		$115,564,629		$ 7,144,462

Details of the Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	$ 73,627,561
40-Year Amortization Payment	$ 6,138,285
Future Value at end of 40-Year period	$ 2,109,653,057
Payment to provide the same future value with 10% annual earnings	$ 4,333,255

Calculation of 2002 Experience (Gain) Loss Not Due to Investment Experience

Total Actuarial (Gain) Loss for 2002	$26,627,216
Investment Losses from 2002	$(27,829,106)
Net Actuarial and Contribution (Gain) Loss	$ (1,201,890)

Calculation of 2001 Experience (Gain) Loss Not Due to Investment Experience

Total Actuarial (Gain) Loss for 2001	$20,009,248
Investment Losses from 2001	$(18,857,549)
Net Actuarial and Contribution (Gain) Loss	$ 1,151,699

Table 03-4: Required Municipal Contributions

The Financial Requirement of the Plan is based on the Normal Cost Percentage and other components shown below. The Normal Cost Percentage is applied to the payroll of the members for the applicable fiscal year.

Normal Cost (Table 03-1)	$ 5,306,352
Total Annual Payroll	$ 54,364,053
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	9.761%
• Administrative Expense (as a % of Payroll)	1.400%
• Gross Normal Cost	11.161%
Net Amortization Payment (Table 03-3)	$ 7,144,462
Funding Adjustment	$ 0

Section Six: Accounting Information

Accumulated Plan Benefits		**01/01/03**	**01/01/02**
Assets at Market Value		**$114,527,374**	**$136,441,784**
Actuarial Present Value of Vested Benefits			
Retired	$115,265,199		
Deferred	235,502		
Employee Contributions	3,599,590		
Active	56,287,840		
Total		**$175,388,131**	**$201,088,685**
Unfunded Actuarial Present Value of Vested Benefits		**$ 60,860,757**	**$64,646,901**
Actuarial Present Value of Accrued Benefits			
Retired	$115,265,199		
Deferred	235,502		
Employee Contributions	803,876		
Active	87,961,038		
Total		**$204,265,615**	**$207,985,229**
Unfunded Actuarial Present Value of Accrued Benefits		**$ 89,738,241**	**$ 71,543,445**

Pension Benefit Obligation

Active Members	
Retirement Benefits	$ 81,333,778
Disability Benefits	23,708,653
Preretirement Death Benefits	5,639,591
Postretirement Death Benefits	82,563
Refunds to Withdrawals	1,010,990
Medicare Benefits	0
Vested Benefits	166,183
Subtotal	$111,941,758
Deferred Vested	$ 235,502
Retirees	$ 69,719,328
Disabled	30,295,618
Survivors	15,250,253
Total Pension Benefit Obligation*	$227,442,459
Net Assets Available for Benefits at Market Value	(114,527,374)
Unfunded Pension Benefit Obligation	$112,915,085

*Total Pension Benefit Obligation is the Actuarial Accrued Liability determined under the Projected Unit Credit Actuarial Cost Method as described in the recently superceded GASB Statement No. 5.

Section Seven: Actuarial Basis of Valuation

Actuarial Assumptions: January 1, 2003

Economic

Interest Rate	8.75 percent increase per annum
Salary Projection	5.75 percent increase per annum Merit Increase 2.25 percent increase per annum Inflation 3.5 percent increase per annum

Employee Characteristics

Mortality

Healthy: UP-1984 Table, with female ages set back five years

Disabled: UP-1984 Table, with male ages set forward five years

Withdrawal

Sample rates:

Age	Rate
20	0.82%
25	0.79%
30	0.76%
35	0.70%
40	0.53%
45	0.27%
50	0.06%
55	0.00%

Disablement

Sample rates:

Age	Male	Female
30	0.14%	0.17%
40	0.33%	0.64%
50	1.00%	1.26%
60	2.97%	2.27%

Retirement Age

Percentage of employees eligible for retirement who retire at each age:

Age	Percentage
50	8
51	3
52	3
53	3
54	3
55	3
56	3
57	3
58	9
59	9
60	9
61	9
62	18
63	18
64	18
65	100

Duty Related Mortality

Twenty percent of deaths in active service are assumed to be duty related.

Duty Related Disability

Fifty percent of disabilities occurring during employment are assumed to occur in the line of duty.

Percentage Married

Eighty percent of male participants and 65 percent of female participants.

Spouse Age

Female spouse assumed to be two years younger than male spouse.

Actuarial Basis of Valuation: Actuarial Cost Method

The actuarial costs of this Plan are determined under the Entry Age Normal Actuarial Cost Method as described in Act 205 of 1984. The total contribution (the financial requirements of the Pension Plan) is made up of three components: normal cost, administrative expense and amortization payment or funding adjustment.

Normal Cost

For each active participant covered by the Plan, normal cost is calculated to be the annual contribution necessary to completely fund the participant's pension by the participant's retirement age. Contributions are assumed to begin with the year of employment and to be a constant percentage of the participant's annual pay. For the Plan, normal cost is expressed as a percentage of the total annual payroll of the participants used in budgeting of required contributions.

Administrative Expense

Estimated annual expense to be incurred by the fund for the contribution year for which the financial requirements are determined.

Actuarial Accrued Liability

Total actuarial present value of all future benefits less the actuarial present value of the future normal costs. The total unfunded actuarial accrued liability as of the valuation date is the actuarial accrued liability less the total value of all assets owned by the Plan.

Amortization Payment

Sum of the annual level amortization contribution requirements specified by the Act for the applicable portions of the unfunded actuarial accrued liability. The Plan's unfunded actuarial accrued liability was re-established in 1998. In the subsequent years, experience gains and losses, changes in benefit provisions, and changes in valuation assumptions would result in increases or decreases to the unfunded actuarial accrued liability. If the unfunded actuarial accrued liability is negative, the amortization payment is zero and a funding adjustment is created.

Section Eight: Demographic Summaries

Distribution of Active Members by Age and Service

	Years of Service										
Age	Number of People in Category										
	1	2	3	4-5	6-10	11-15	16-20	21-25	26-30	30+	Total by Age
-20	0	0	0	0	0	0	0	0	0	0	**0**
20-24	1	0	0	0	0	0	0	0	0	0	**1**
25-29	6	10	8	3	1	0	0	0	0	0	**28**
30-34	4	5	25	18	20	0	0	0	0	0	**72**
35-39	9	9	16	24	30	14	0	0	0	0	**102**
40-44	7	4	10	8	24	30	18	9	0	0	**110**
45-49	3	3	2	5	14	32	47	73	14	0	**193**
50-54	2	0	0	1	3	19	32	65	86	0	**208**
55-59	0	0	0	1	3	5	17	18	60	7	**111**
60-64	0	0	0	0	1	1	3	3	14	18	**40**
65+	0	0	0	0	0	0	0	0	1	1	**2**
Total	**32**	**31**	**61**	**60**	**96**	**101**	**117**	**168**	**175**	**26**	**867**

Age Distribution of Retired Participants

Regular Retirements			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	0	0.00	0.00
45-49	0	0.00	0.00
50-54	16	$ 376,315.68	$ 23,519.73
55-59	28	700,156.44	25,005.59
60-64	50	1,301,818.56	26,036.37
65-69	65	1,787,323.56	27,497.29
70-74	97	2,019,179.04	20,816.28
75-79	83	1,268,938.20	15,288.41
80-84	45	567,704.04	12,615.65
84+	26	250,092.96	9,618.96
Total	**410**	**$8,271,528.48**	**$ 20,174.46**

Age Distribution of Retired Participants

Disability Retirements			
Age Group	**Number of People**	**Total Annual Benefit**	**Average Annual Benefit**
Under 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	1	$ 12,718.08	$12,718.08
45-49	6	122,371.08	20,395.18
50-54	25	516,801.96	20,672.08
55-59	26	588,355.32	22,629.05
60-64	21	446,276.04	21,251.24
65-69	23	438,588.60	19,069.07
70-74	46	685,675.08	14,905.98
75-79	45	647,617.08	14,391.49
80-84	8	91,289.88	11,411.24
84+	10	116,475.96	11,647.60
Total	**211**	**$3,666,169.08**	**$17,375.21**

Age Distribution of Retired Participants

Survivors			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	3	$ 16,977.24	$ 5,659.08
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	1	10,343.88	10,343.88
45-49	5	51,082.44	10,216.49
50-54	11	89,893.08	8,172.10
55-59	11	109,584.36	9,962.21
60-64	21	186,584.36	8,884.97
65-69	35	276,904.68	7,911.56
70-74	68	423,585.84	6,229.20
75-79	73	408,119.28	5,590.68
80-84	59	302,612.64	5,129.03
84+	65	230,751.72	3,550.03
Total	**352**	**$2,106,439.56**	**$ 5,984.20**

Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	3	$ 16,977.24	$ 5,659.08
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	2	23,061.96	11,530.98
45-49	11	173,453.52	15,768.50
50-54	52	983,010.72	18,904.05
55-59	65	1,398,096.12	21,509.17
60-64	92	1,934,679.00	21,029.12
65-69	123	2,502,816.84	20,348.10
70-74	211	3,128,439.96	14,826.73
75-79	201	2,324,674.56	11,565.55
80-84	112	961,606.56	8,585.77
84+	101	597,320.64	5,914.07
Total	**973**	**$14,044,137.12**	**$ 14,433.85**

Age Distribution of Deferred Vested Participants

All Persons Entitled to Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	0	0.00	0.00
45-49	0	0.00	0.00
50-54	1	$34,521.84	$34,521.84
55-59	0	0.00	0.00
60-64	0	0.00	0.00
65-69	0	0.00	0.00
70-74	0	0.00	0.00
75-79	0	0.00	0.00
80-84	0	0.00	0.00
84+	0	0.00	0.00
Total	**1**	**$ 34,521.84**	**$ 34,521.84**

Demographic Data as of January 1, 2003

Changes in Plan Participation for Active Members

Active Members	Number
As of January 1, 2002	898
New Entrants	0
Total	898
Separation from Active Service	
Separation with a Deferred Benefit	0
Separation without a Deferred Benefit	(3)
Transfer to another Plan	0
Disability	(10)
Death	(1)
Retirement with a Service Retirement Benefit	(17)
Total Separations	(31)
Data Adjustments	
Net Adjustments	0
Active Members as of January 1, 2003	867

Changes in Plan Participants for Retired Members and Survivors

	Deferred Vested	Regular Retirements	Disability Retirement	Survivors Child	Survivors Other	Total
As of January 1, 2002	1	416	211	3	354	985
New Benefit Recipients	0	17	10	0	15	42
Death	0	(22)	(11)	0	(20)	(53)
Other Cessation of Benefits	0	0	0	0	0	0
Net Data Adjustments	0	(1)	1	0	0	0
As of January 1, 2003	1	410	211	3	349	974

Section Nine: Plan Assets

Source of Asset Information

The assets of the Aggregated Trust for the City's pension plans are summarized in the following tables based on the information provided by the City and by Terry & Stephenson, P.C. Assets are shown at market value.

Summary of Values for Aggregated Trust

	1/1/02	1/1/03
Market Value of Assets - Cash Basis	$381,772,840	$313,952,163
Accrued Interest	1,990,082	1,019,024
Accrued Contributions	0	0
Other Receivables	462	0
Accrued Expenses and Other Payables	(2,513,845)	(2,500,222)
Market Value of Assets - Accrual Basis	$381,249,539	$312,470,965

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2002		$381,249,539
Contributions Toward Pension Liability		
- Policemen's	$14,674,254	
- Firemen's	8,556,820	
- Municipal	6,490,621	$ 29,721,695
Miscellaneous Contributions and Pass Through Items		5,079,754
Interest and Dividends		10,146,781
Net Appreciation (Decline) in Fair Value Of Investments		(52,974,937)
Payments to Participants		
- Policemen's	$ 27,477,850	
- Firemen's	14,954,956	
- Municipal	16,330,547	(58,763,353)
Expenses		(1,988,514)
Balance as of December 31, 2002		$312,470,965

Undivided Participation Calculation Calendar Year 2002 - Accrual Basis

	Policemen's	Firemen's	Municipal	Total
January 1, 2002 Market Value	$133,279,704	$136,441,784	$111,528,051	$381,249,539
Plan-Specific Contributions	15,822,894	9,402,350	9,547,977	34,773,221
Plan-Specific Distributions	(27,771,605)	(15,171,771)	(16,556,608)	(59,499,984)
Sub-Total	$121,330,993	$130,672,363	$104,519,420	$356,522,776
Sub-Total Percentages	34.03%	36.65%	29.32%	100.00%
Allocated Expenses	(426,016)	(458,815)	(367,052)	(1,251,883)
Allocated Investment Earnings	(14,564,816)	(15,686,174)	(12,548,938)	(42,799,928)
December 31, 2002 Market Value	$106,340,161	$114,527,374	$91,603,430	$312,470,965

Contributions and Distributions for 2002 - Accrual Basis

Plan-Specific Contributions	Policemen's	Firemen's	Municipal	Total
State Aid: General Municipal Pension System State Aid	$ 9,173,920	$ 4,369,600	$ 2,456,480	$16,000,000
Supplemental State Aid	0	0	0	0
Total State Aid	$ 9,173,920	$ 4,369,600	$ 2,456,480	$16,000,000
Member Contributions	3,674,325	3,524,430	3,661,611	10,860,366
City Contributions	1,826,009	662,790	372,530	2,861,329
Pass Through Contributions	1,148,640	845,530	1,520,795	3,514,965
Miscellaneous Income	0	0	1,536,561	1,536,561
Total Contributions	**$15,822,894**	**$9,402,350**	**$9,547,977**	**$34,773,221**

Plan-Specific Distributions				
Benefit Payments to Participants	$27,070,391	$14,928,263	$15,885,020	$ 57,883,674
Refunds to Participants	407,459	26,693	445,527	879,679
Administrative Expenses	293,755	216,815	226,061	736,631
Total Distributions	**$27,771,605**	**$15,171,771**	**$16,556,608**	**$59,499,984**

Section Ten: Supplementary Exhibits for Plans Funded With Pension Bond Proceeds

Table 03-5: Unfunded Actuarial Accrued Liability Excluding Assets Arising from Pension Bond Proceeds

Assets Excluding Pension Bond Proceeds		
Assets Excluding Bond Proceeds at January 1, 2002		$67,550,377
Receipts		
Employer Contributions	$3,383,523	
Employee Contributions	3,524,430	
State Aid	4,369,600	
Supplemental State Assistance	0	
Investment Income	1,990,827	
Net Change in Market Value	(9,913,018)	
Pass Through Contributions	845,530	
Total Receipts		$ 4,200,892
Disbursements		
Monthly Benefit Payments	$14,082,733	
Refund of Employee Contributions	26,693	
Administrative Expenses	494,922	
Pass Through Payments	845,530	
Total Disbursements		(15,449,878)
Assets Excluding Bond Proceeds at January 1, 2003		**$56,301,391**
Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds		
Actuarial Accrued Liability (Table 03-1)		$230,092,003
Assets Excluding Bond Proceeds at January 1, 2003		(56,301,391)
Adjusted Unfunded Actuarial Accrued Liability		$173,790,612

Table 03-6: Actuarial (Gain) Loss Determination Excluding Assets Arising from Pension Bond Proceeds

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2002		$165,822,876
Normal Cost Assumed		6,242,495
Interest Charged at Valuation Rate		15,485,883
Contributions Made		
- Municipality	$3,383,523	
- State Aid Allocated	4,369,600	
- Employees	3,524,430	(11,277,553)
Interest Credited at Valuation Rate		(392,421)
Special Adjustment Because of Higher Act 82 Interest Rate		(541,468)
Expected Unfunded Actuarial Accrued Liability Before Adjustments		$175,339,812
Experience from Investment Return		
- Comparative Interest Rate Amortization Tabulation (Gain) Loss	$11,785,049	
- Other Investment Return (Gain) Loss	2,418,834	14,203,883
Experience (Gain) Loss from all Other Sources		(6,156,505)
Increase (Decrease) in Actuarial Accrued Liability		
- Benefit Modifications for Actives	$957,341	
- Benefit Modifications for Retirees	6,733,210	
- Changes in Actuarial Assumptions	(17,287,129)	(9,596,578)
Actual Unfunded Actuarial Accrued Liability		$173,790,612

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2002		$8,047,378
Actuarially Required Contributions	$16,896,167	
Actual Contributions with Interest	(11,669,974)	
Contribution (Gain) Loss		5,226,193
Loss (Gain) to be Amortized		$13,273,571

Comparative Interest Rate Amortization Tabulation

Balance Calculated Using Actual Investment Return		
- Act 82 Amortization Balance at January 1, 2002	$45,277,684	
- Act 82 Amortization Payment for 2002	8,869,108	
- Comparative Interest Rate Balance at January 1, 2002		$54,146,792
- Actual Investment Return on Balance		(6,370,370)
- Actual Act 82 Amortization Balance at January 1, 2003		$47,776,422
Balance Calculated Using 10 Percent Investment Return		
- Comparative Interest Rate Balance at January 1, 2002		$54,146,792
- Interest at 10 Percent		5,414,679
- Comparative Act 82 Amortization Balance at January 1, 2003		$59,561,471
Comparative Interest Rate Amortization Tabulation (Gain) Loss		$ 11,785,049

Table 03-7: Amortization of Unfunded Actuarial Accrued Liability Excluding Assets Arising from Pension Bond Proceeds

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Remaining Payments	Annual Amount
Initial	$150,697,522	1998	2037	$169,658,493	35	$8,869,108
Assump. Chg	$(2,712,163)	1998	2017	$(2,394,894)	15	$(269,183)
Experience Gain	$(8,740,776)	1999	2013	$(7,379,350)	11	$(985,374)
Experience Gain	$(5,967,507)	2000	2014	$(5,301,244)	12	$(672,207)
Experience Loss	$ 5,187,425	2001	2015	$ 4,818,168	13	$ 583,893
Experience Loss	$ 1,249,459	2002	2016	$ 1,206,904	14	$ 140,536
Investment Loss	$ 9,840,706	2002	2032	$ 9,505,542	30	$ 831,994
Agg. Changes thru Last Val	N/A	N/A	N/A	$ 455,126	N/A	$(370,341)
Assum. Chg.	$(17,287,129)	2003	2022	$(17,287,129)	20	$(1,710,460)
Ben. Mod. - Act.	$ 957,341	2003	2022	$ 957,341	20	$ 94,723
Ben. Mod. - Ret.	$6,733,210	2003	2012	$6,733,210	10	$ 954,163
Experience Gain	$ (930,312)	2003	2017	$ (930,312)	15	$ (104,566)
Investment Loss	$14,203,883	2003	2032	$14,203,883	30	$ 1,243,227
Agg. Chg – 2003	N/A	N/A	2014	$3,676,993	12	$ 477,087
Agg. Changes	N/A	N/A	N/A	$ 4,132,119	N/A	$ 106,746
Aggregate	N/A	N/A		$173,790,612		$8,975,854

Details of the Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	$ 150,697,522
40-Year Amortization Payment	$ 12,563,560
Future Value at end of 40-Year period	$ 4,317,941,320
Payment to provide the same future value with 10% annual earnings	$ 8,869,108

Calculation of 2002 Experience (Gain) Loss Not Due to Investment Experience

Total Actuarial (Gain) Loss for 2002	$13,273,571
Investment Losses from 2002	$(14,203,883)
Net Actuarial and Contribution (Gain) Loss	$ (903,312)

Calculation of 2001 Experience (Gain) Loss Not Due to Investment Experience

Total Actuarial (Gain) Loss for 2001	$11,090,165
Investment Losses from 2001	$ (9,840,706)
Net Actuarial and Contribution (Gain) Loss	$ 1,249,459

Debt Service Schedule by Plan Year
Pension Bond Issue of March 10, 1998

	Date of Original Borrowing	Total Principal Borrowed	Total Principal to this Plan	Percentage to this Plan	Date of Refinancing
	3/10/98	$255,865,000.00	$77,782,960.48	30.1%	N/A
Plan Year	Required Principal Pymt.	Required Interest Pymt.	Annual Debt Service	Premium or Discount Amortized	Principal Balance at Valuation Date
1997					
1998		$2,531,176.79	$2,531,176.79		$77,782,960.48
1999	$ 304,000.00	5,053,765.57	5,357,765.57		77,782,960.48
2000	304,000.00	5,036,665.57	5,340,665.57		77,478,960.48
2001	304,000.00	5,019,474.37	5,323,474.37		77,174,960.48
2002	304,000.00	5,001,963.97	5,305,963.97		76,870,960.48
2003	304,000.00	4,984,316.77	5,288,316.77		76,566,960.48
2004	304,000.00	4,966,487.17	5,270,487.17		76,262,960.48
2005	761,520.00	4,934,627.98	5,696,147.98		75,958,960.48
2006	705,280.00	4,890,447.65	5,595,727.65		75,197,440.48
2007	747,840.00	4,846,303.81	5,594,143.81		74,492,160.48
2008	779,760.00	4,799,614.54	5,579,374.54		73,744,320.48
2009	842,080.01	4,746,261.58	5,588,341.59		72,964,560.48
2010	915,040.01	4,688,193.78	5,603,233.79		72,122,480.47
2011	981,920.01	4,628,913.78	5,610,833.79		71,207,440.46
2012	2,398,560.01	4,522,674.15	6,921,234.16		70,225,520.45
2013	3,339,440.02	4,341,092.29	7,680,532.31		67,826,960.44
2014	3,553,760.02	4,119,567.87	7,673,327.89		64,487,520.42
2015	3,865,360.02	3,878,446.47	7,743,806.49		60,933,760.40
2016	4,122,240.03	3,618,849.46	7,741,089.49		57,068,400.38
2017	5,546,480.03	3,304,616.06	8,851,096.09		52,946,160.35
2018	4,023,440.02	2,993,593.66	7,017,033.68		47,399,680.32
2019	6,089,120.04	2,661,890.89	8,751,010.93		43,376,240.30
2020	6,505,600.04	2,246,265.13	8,751,865.17		37,287,120.26
2021	6,949,440.04	1,802,248.81	8,751,688.85		30,781,520.22
2022	7,425,200.06	1,327,885.67	8,753,085.73		23,832,080.18
2023	7,932,880.06	821,069.03	8,753,949.09		16,406,880.12
2024	8,474,000.06	279,641.99	8,753,642.05		8,474,000.06

Section Eleven: Glossary

Accrued Benefit
The portion of the participant's retirement benefit that is attributable to service completed before the calculation date. The calculation typically uses actual service as of the calculation date and may involve other factors such as average pay at the determination date and projected service through the retirement eligibility date.

Act 205 of 1984
Municipal Pension Plan Funding Standard and Recovery Act of December 18, 1984, P.L. 1005, No. 205. The Act controls pension funding in Pennsylvania. This Act also provides for reporting of actuarial information and for a recovery program for qualifying municipalities.

Actuarial Accrued Liability
The portion of the actuarial cost assigned to prior years.

Actuarial Assumptions
Factors used by the actuary to forecast future events. These factors include items relating to future economic conditions, the survival of the participants and their beneficiaries, and the length of employment.

Actuarial Cost Method
A means of assigning costs to periods of employment. This method is used to determine a funding level that will provide sufficient assets to pay benefits for each participant upon retirement. Act 205 specifies that the entry age normal cost method, as described in the Act, should be used for this determination.

Actuarial Gain or Loss
The effect on the actuarial accrued liability of differences between events as predicted by the actuarial assumptions and those that actually occurred. This difference can increase or decrease the contribution in future years.

Actuarial Present Value
The lump sum value that is equivalent to an expected series of future payments. This value is determined by using the actuarial assumptions. An actuarial present value, as of the valuation date, represents the amount of funds that would be sufficient to provide the series of payments, if experience precisely matches the actuarial assumptions.

Actuarial Value of Assets
The value of current plan assets which is used by the actuary to evaluate the current funding status and determine future funding requirements. Pennsylvania Code, Title 16, Part IV, Section 203.2(a) requires that this value be between 80 and 120 percent of the fair market value of the assets.

Administrative Expenses
The average of expenses to administer the plan that is paid in the year preceding the most recent valuation and the anticipated expenses for the year following this valuation. The average is converted to a percentage of payroll and used as part of the Minimum Municipal Obligation calculation.

Amortization Payment
The annual payment required to eventually eliminate the unfunded actuarial accrued liability according to the schedule established in Act 205.

Funding Adjustment
Occurs when the actuarial value of assets exceeds the actuarial accrued liability; it is defined by Act 205 as 10 percent of the excess. This adjustment reduces the amount that must be contributed to the pension plan.

General Municipal Pension System State Aid
Annually municipalities receive a portion of the insurance premium tax levied on casualty insurance companies headquartered outside of Pennsylvania. If they have paid firefighters, they also receive a portion of the premium tax on out-of-state fire insurance companies. These taxes are distributed according to formula contained in Act 205.

Minimum Municipal Obligation
The amount that must be contributed to a pension plan by a municipality for a given year. The calculation of this amount uses the normal cost, anticipated administrative expenses, amortization payment or funding adjustment, and anticipated employee contributions to determine a municipality's contribution requirement. General Municipal Pension System State Aid may be used to reduce the contribution.

Normal Cost
The actuarial cost assigned to a given year to pay for the portion of the anticipated benefit derived from service during that year.

Unfunded Actuarial Accrued Liability
The amount by which the actuarial accrued liability exceeds the actuarial value of assets. A valuation will identify the value of changes in the unfunded actuarial accrued liability that result from changes in plan benefits, actuarial assumptions, or actuarial gains and losses.

Vesting
The participant's non-forfeitable right to receive a benefit, provided that the participant survives until benefit eligibility.