MOCKENHAUPT
BENEFITS GROUP

ACTUARIAL VALUATION REPORT

Revised for Act 81 of 2004

for the

City of Pittsburgh

Policemen's Relief and Pension Fund

as of

January 1, 2003

Report Date: September 3, 2004

One Gateway Center / Suite 1225 / 420 Fort Duquesne Boulevard / Pittsburgh, PA / 15222
412.394.9660 / 1.800.405.3620 / Fax: 412.394.6339

Table of Contents

Preface to Actuarial Valuation Report

Revised for Act 81 of 2004

This revised actuarial valuation of the City of Pittsburgh Policemen'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 $1,178,272 from $15,899,027 to $14,720,755. 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 Policemen'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 the 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 Policemen's Relief and Pension Fund is $106,340,161. 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	10.353%	10.680%
Expenses as a Percentage of Total W-2 Payroll	1.200%	1.400%
Amortization Payment	$15,899,027	$11,909,294

The change in actuarial costs from year to year can be affected by changes in Plan provisions, assumption changes, and experience changes. A summary of the actuarial assumptions is contained in Section Seven, Actuarial Basis of Valuation.

Pension bonds were issued in March 1998. The debt service payment for 2003 is approximately $8.19 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.

Assumption Changes

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

An experience study was prepared as of January 1, 2001. Several assumption changes have been made as of January 1, 2003, to implement some of the changes recommended in this 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 have been changed. These assumption changes decreased the Unfunded Actuarial Accrued Liability by $4,706,925. 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 police officers. These adjustments increased the Unfunded Actuarial Accrued Liability by $5,143,958. 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.

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 have a greater effect on the current year's actuarial gain or loss than on 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 has experienced a net actuarial loss of $33,581,785. The loss occurred primarily because the return on investments was lower than the anticipated 9.0 percent.

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
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	1,070	1,129	(59)
Vested	173	199	(26)
Not Vested	897	930	(33)
Total In Payment Status:	1,545	1,550	(5)
Retirement Benefits	719	736	(17)
Disability Benefits	318	316	2
Survivor Benefits	508	498	10
Deferred	3	2	1
Total	**2,618**	**2,681**	**(63)**
Average Monthly Benefit			
In Payment Status			
Retirement Benefits	$1,866	$1,821	$ 45
Disability Benefits	$1,577	$1,538	$ 39
Survivor Benefits	$ 531	$ 508	$ 23
Deferred	$2,484	$2,304	$ 180
Active Participant Averages			
Hire Age	28.5	28.4	0.1
Attained Age	40.8	40.1	0.7
Normal Retirement Age	52.0	51.9	0.1
Assumed Future Service	17.0	17.0	0
Monthly Compensation	$4,377	$ 4,037	$ 340
Financial Data			
Market Value of Assets	$106,340,161	$133,279,704	$(26,939,543)
Accumulated Employee Contributions	$ 28,510,195	$ 30,487,096	$ (1,976,901)
Cost Components			
Normal cost as a percentage of total payroll	10.353%	10.680%	-0.327%
Expenses as a percentage of total payroll	1.200%	1.400%	-0.200%
Total	11.553%	12.080%	-0.527%
Amortization payment	$14,720,755	$11,909,293	$2,811,462

Section Four: Summary of Plan Provisions

Plan Year	▼ Twelve-month period beginning January 1 and ending December 31
Plan Established	▼ September 1, 1935
Principal Definitions	
Employee	▼ Any person employed by the City of Pittsburgh Bureau of Police, including all substitute uniformed employees of the Bureau.
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	▼ An additional monthly benefit of $20 for each completed year of service between 20 and 25 years, plus $25 for each year of service in excess of 25 years
Service	▼ Assumed to be 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	▼ Base wages and longevity pay
Average Compensation	▼ Compensation averaged over the 12-month period prior to retirement or severance.
Members hired after December 31, 1991	▼ Compensation averaged over 36 months prior to retirement or severance.
Normal Retirement	
Eligibility	▼ Later of age 50 *or* Completion of 20 years of service
Monthly Benefit	▼ Equal to 50% of average compensation plus service increment if any

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
Members Hired after December 31, 1991	▼ Sum of this benefit and member's workers' compensation benefit shall not exceed member's regular salary at time of 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
Terminated Participants	▼ If contributions continue at same rate in effect at termination and continue to age 50, member may receive monthly benefit based on rate of pay in effect had officer worked until age 50
Death Benefits	
Accidental Death	▼ Benefit plus return of member's accumulated contributions ▼ Benefit plus workers' compensation or other payments 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

- *Children Benefits (Cont'd)*

- ▼ 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

Employee Contributions

- ▼ Participants will contribute 6.0 percent of their compensation plus $1 per month. Members who elect the surviving spouse benefit contribute an additional 1/2 percent of compensation. The $1 per month contribution will cease at age 65.

Refund

- ▼ Accumulated contributions without interest

Section Five: Development of Contribution Requirements

Table 03-1: Normal Cost and Actuarial Accrued Liability

Normal Cost	
Retirement Benefits	$4,142,132
Disability Benefits	2,091,100
Preretirement Death Benefits	338,416
Postretirement Death Benefits	0
Refunds to Withdrawals	238,017
Medicare Premium Benefits	0
Vested Benefits	75,684
Total	**$6,885,349**

Actuarial Accrued Liability

Actuarial Present Value of Benefits at Attained Age

	Deferred	In Payment	Active	All
Retirement Benefits	$ 791,442	$136,655,274	$127,608,125	$265,054,841
Disability Benefits	0	51,766,395	42,885,046	94,651,441
Survivor Benefits	0	24,692,594	0	24,692,594
Preretirement Death Benefits	0	0	5,910,134	5,910,134
Postretirement Death Benefits	0	0	0	0
Refunds to Withdrawals	0	0	2,507,821	2,507,821
Medicare Premium Benefits	0	0	0	0
Vested Benefits	0	0	1,659,620	1,659,620
Total	**$ 791,442**	**$213,114,263**	**$180,570,746**	**$394,476,451**

Actuarial Present Value of Future Normal Costs

Retirement Benefits	$42,829,775	
Disability Benefits	21,393,709	
Preretirement Death Benefits	3,490,905	
Postretirement Death Benefits	0	
Refunds to Withdrawals	2,477,329	
Medicare Premium Benefits	0	
Vested Benefits	818,764	
Total	**$71,010,482**	**($71,010,482)**
Actuarial Accrued Liability		**$323,465,969**

Unfunded Actuarial Accrued Liability

Actuarial Accrued Liability	$323,465,696
Actuarial Value of Assets	(106,340,161)
Unfunded Actuarial Accrued Liability	**$217,125,808**

Table 03-2: Actuarial (Gain) Loss Determination

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2002		$180,753,446
Normal Cost Assumed		7,419,288
Interest Charged at Valuation Rate		16,935,546
Contributions Made		
- Municipality	$1,826,009	
- State Aid Allocated	9,173,920	
- Employees	3,674,325	(14,674,254)
Interest Credited at Valuation Rate		(453,394)
Special Adjustment Because of Higher Act 82 Interest Rate		(472,912)
Expected Unfunded Actuarial Accrued Liability Before Adjustments		$189,507,720
Experience from Investment Return		
- Comparative Interest Rate Amortization Tab. (Gain) Loss	$10,148,694	
- Other Investment Return (Gain) Loss	16,069,156	26,217,850
Experience (Gain) Loss from all Other Sources		963,205
Increase (Decrease) in Actuarial Accrued Liability:		
- Benefit Modifications for Actives	$ 0	
- Benefit Modifications for Retirees	5,143,958	
- Changes in Actuarial Assumptions	(4,706,925)	437,033
Actual Unfunded Actuarial Accrued Liability		$217,125,808

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2002		$ 27,181,055
Actuarially Required Contributions and		
Bond Proceeds with Interest	$21,528,378	
Actual Contributions with Interest	(15,127,648)	
Contribution (Gain) Loss		6,400,730
Loss (Gain) to be Amortized		$ 33,581,785

Comparative Interest Rate Amortization Tabulation

Balance Calculated Using Actual Investment Return		
Act 82 Amortization Balance at January 1, 2002	$39,545,028	
Act 82 Amortization Payment for 2002	7,746,181	
Comparative Interest Rate Balance at January 1, 2002		$47,291,209
Actual Investment Return on Balance		(5,419,573)
Actual Act 82 Amortization Balance at January 1, 2003		$41,871,636
Balance Calculated Using 10 Percent Investment Return		
Comparative Interest Rate Balance at January 1, 2002		$ 47,291,209
Interest at 10 Percent		4,729,121
Comparative Act 82 Amortization Balance at January 1, 2003		$ 52,020,330
Comparative Interest Rate Amortization Tabulation (Gain) Loss		$ 10,148,694

Table 03-3: Amortization of Unfunded Actuarial Accrued Liability

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Rem. Pymts.	Annual Amount
Initial	$131,617,548	1998	2037	$148,177,851	35	$7,746,181
Assumption Chg.	$(2,912,234)	1998	2017	$(2,571,556)	15	$(289,040)
Experience Loss	$ 815,131	1999	2013	$ 688,174	11	$ 91,893
Experience Gain	$(6,646,327)	2000	2014	$(5,904,275)	12	$(748,672)
Experience Loss	$21,763,126	2001	2015	$20,213,962	13	$2,449,643
Assump. Change	$597,864	2002	2021	$ 586,178	19	$ 59,189
Experience Loss	$ 3,850,682	2002	2016	$ 3,719,532	14	$433,115
Investment Loss	$18,838,751	2002	2032	$18,197,124	30	$1,592,744
Agg. Change through Last Valuation	N/A	N/A	2021	$34,929,139	19	$3,588,872
Assumption Change	$(4,706,925)	2003	2022	$(4,706,925)	20	$(465,723)
Ben. Mod.-Active	N/A					
Ben. Mod.-Retired	$5,143,958	2003	2012	$5,143,958	10	$ 728,950
Experience Loss	$7,363,935	2003	2017	$7,363,935	15	$827,698
Investment Loss	$26,217,850	2003	2032	$26,217,850	30	$2,294,777
Agg. Change-2003	N/A	N/A	2022	$34,018,818	20	$3,385,702
Aggregate Changes	N/A	N/A	2021	$68,947,957	19	$ 6,974,574
Aggregate	N/A	N/A		$217,125,808		$14,720,755

Details of the Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	$131,617,548
40-Year Amortization Payment	$10,972,874
Future Value at end of 40-Year period	$3,771,242,164
Payment to provide the same future value with 10% annual earnings	$7,746,181

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

Total Actuarial (Gain) Loss for 2002	$33,581,785
Investment Losses from 2002	$(26,217,850)
Net Actuarial and Contribution (Gain) Loss	$ 7,363,935

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

Total Actuarial (Gain) Loss for 2001	$22,689,433
Investment Losses from 2001	$(18,838,751)
Net Actuarial and Contribution (Gain) Loss	$ 3,850,682

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)	$ 6,885,349
Total Annual Payroll	$66,504,321
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	10.353%
• Administrative Expense (as a % of Payroll)	1.200%
• Gross Normal Cost	11.553%
Net Amortization Payment (Table 03-3)	$14,720,755
Funding Adjustment	$0

Section Six: Accounting Information

Accumulated Plan Benefits		01/01/03	01/01/02
Assets at Market Value		**$106,340,161**	**$133,279,704**
Actuarial Present Value of Vested Benefits			
Retired	$213,114,263		
Deferred	791,442		
Employee Contributions	6,454,253		
Active	43,630,025		
Total		**$263,989,983**	**$266,354,269**
Unfunded Actuarial Present Value of Vested Benefits		**$157,649,822**	**$133,074,565**
Actuarial Present Value of Accrued Benefits			
Retired	$213,114,263		
Deferred	791,442		
Employee Contributions	1,289,295		
Active	78,579,608		
Total		**$293,774,608**	**$273,565,859**
Unfunded Actuarial Present Value of Accrued Benefits		**$187,434,447**	**$140,286,155**

Pension Benefit Obligation

Active Members

Retirement Benefits	$73,859,362
Disability Benefits	25,997,676
Preretirement Death Benefits	3,541,415
Postretirement Death Benefits	0
Refunds to Withdrawals	1,607,612
Medicare Benefits	0
Vested Benefits	964,898
Subtotal	$105,970,963
Deferred Vested	$ 791,442
Retirees	136,655,274
Disabled	51,766,395
Survivors	24,692,594
Total Pension Benefit Obligation*	$319,876,668
Net Assets Available for Benefits at Market Value	(106,340,161)
Unfunded Pension Benefit Obligation	$213,536,507

*The 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 and Longevity Increases: 2.25 percent 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	2.04%
25	1.98%
30	1.90%
35	1.76%
40	1.31%
45	0.66%
50	0.15%
55	0.00%

Disablement

Sample rates:

Age	Male	Female
30	.22%	.26%
40	.50%	.98%
50	1.53%	1.94%
60	4.56%	3.49%

Retirement Age

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

Age	Percentage
50	20
51	20
52	12
53	12
54	10
55	10
56	10
57	10
58	10
59	10
60	10
61	10
62	10
63	10
64	10
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	0	1	0	0	0	0	0	0	0	0	**1**
25-29	32	44	0	0	1	0	0	0	0	0	**77**
30-34	26	30	0	10	125	11	0	0	0	0	**202**
35-39	10	10	0	7	165	61	0	0	0	0	**253**
40-44	0	3	0	2	87	73	14	6	0	0	**185**
45-49	1	4	0	1	34	45	30	47	0	0	**162**
50-54	0	1	0	0	8	26	16	48	6	0	**105**
55-59	0	0	0	0	3	7	6	14	3	30	**63**
60-64	0	0	0	0	1	2	0	2	0	17	**22**
65+	0	0	0	0	0	0	0	0	0	0	**0**
Total	**69**	**93**	**0**	**20**	**424**	**225**	**66**	**117**	**9**	**47**	**1070**

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	3	$89,427.60	$29,809.20
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	**3**	**$89,427.60**	**$29,809.20**

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	1	$ 31,110.60	$ 31,110.60
50-54	27	770,604.60	28,540.91
55-59	98	2,900,136.48	29,593.23
60-64	122	3,465,482.64	28,405.60
65-69	122	3,073,765.80	25,194.80
70-74	126	2,596,826.40	20,609.73
75-79	134	2,177,258.52	16,248.20
80-84	57	775,008.36	13,596.64
84+	32	306,177.84	9,568.06
Total	**719**	**$ 16,096,371.24**	**$ 22,387.16**

Age Distribution of Retired Participants

Disability Retirements			
Age Group	**Number of People**	**Total Annual Benefit**	**Average Annual Benefit**
Under 30	1	$ 7,201.80	$ 7,201.80
30-34	1	23,689.20	23,689.20
35-39	9	198,404.40	22,044.93
40-44	8	189,946.56	23,743.32
45-49	25	543,839.52	21,753.58
50-54	28	583,314.00	20,832.64
55-59	43	864,979.80	20,115.81
60-64	62	1,223,944.32	19,741.04
65-69	44	873,059.16	19,842.25
70-74	43	779,734.20	18,133.35
75-79	39	552,891.48	14,176.70
80-84	13	159,636.36	12,279.72
84+	2	15,265.20	7,632.60
Total	**318**	**$ 6,015,906.00**	**$ 18,917.94**

Age Distribution of Retired Participants

Survivors			
Age Group	**Number of People**	**Total Annual Benefit**	**Average Annual Benefit**
Under 30	6	$ 42,410.16	$ 7,068.36
30-34	0	0.00	0.00
35-39	2	22,899.00	11,449.50
40-44	4	38,871.60	9,717.90
45-49	9	120,744.60	13,416.07
50-54	11	119,245.20	10,840.47
55-59	22	171,063.60	7,775.62
60-64	33	298,476.00	9,044.73
65-69	69	565,398.24	8,194.18
70-74	92	648,866.76	7,052.90
75-79	113	643,108.68	5,691.23
80-84	83	348,301.32	4,196.40
84+	64	220,212.00	3,440.81
Total	**508**	**$3,239,597.16**	**$ 6,377.16**

Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	7	$ 49,611.96	$ 7,087.42
30-34	1	23,689.20	23,689.20
35-39	11	221,303.40	20,118.49
40-44	12	228,818.16	19,068.18
45-49	35	695,694.72	19,876.99
50-54	66	1,473,163.80	22,320.66
55-59	163	3,936,179.88	24,148.34
60-64	217	4,987,902.96	22,985.73
65-69	235	4,512,223.20	19,200.95
70-74	261	4,025,427.36	15,423.09
75-79	286	3,373,258.68	11,794.61
80-84	153	1,282,946.04	8,385.27
84+	98	541,655.04	5,527.09
Total	**1,545**	**$25,351,874.40**	**$ 16,408.98**

Demographic Data as of January 1, 2003

Changes in Plan Participation for Active Members

Active Members	**Number**
As of January 1, 2002	1,129
New Entrants	1
Transfer from Another Plan	0
	1,130
Separation from Active Service	
Separation with a Deferred Benefit	(1)
Separation without a Deferred Benefit	(24)
Disability	(14)
Death	0
Retirement with a Service Retirement Benefit	(21)
Total Separations	(60)
Data Adjustments	0
Active Members as of January 1, 2003	1,070

Changes in Plan Participants for Retired Members and Survivors

	Deferred Vested Retirees	Regular Retirements	Disability Retirement	Survivors		Total
				Child	Other	
As of January 1, 2002	2	736	316	5	493	1,552
New Benefit Recipients	1	21	14	0	28	64
Death	0	(38)	(12)	0	(17)	(67)
Other Cessation of Benefits	0	0	0	(1)	0	(1)
Net Data Adjustments	0	0	0	0	0	0
As of January 1, 2003	3	719	318	4	504	1,548

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		$26,752,147
Receipts		
Employer Contributions	$6,021,409	
Employee Contributions	3,674,325	
State Aid	9,173,920	
Supplemental State Assistance	0	
Investment Income	670,158	
Net Change in Market Value	(3,328,153)	
Pass Through Contributions	1,148,640	
Total Receipts		17,360,299
Disbursements		
Monthly Benefit Payments	$25,921,751	
Refund of Employee Contributions	407,459	
Administrative Expenses	447,569	
Pass Through Payments	1,148,640	
Total Disbursements		(27,925,419)
Assets Excluding Bond Proceeds at January 1, 2003		**$16,187,027**
Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds		
Actuarial Accrued Liability (Table 03-1)		$323,465,969
Assets Excluding Bond Proceeds at January 1, 2003		(16,187,027)
Adjusted Unfunded Actuarial Accrued Liability		$307,278,942

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		$287,281,003
Normal Cost Assumed		7,419,288
Interest Charged at Valuation Rate		26,523,026
Contributions Made		
- Municipality	$6,021,409	
- State Aid Allocated	9,173,920	
- Employees	3,674,325	(18,869,654)
Interest Credited at Valuation Rate		(606,779)
Special Adjustment Because of Higher Act 82 Interest Rate		(901,953)
Expected Unfunded Actuarial Accrued Liability Before Adjustments		$300,844,931
Experience from Investment Return		
- Comparative Interest Rate Amortization Tabulation (Gain) Loss	19,355,919	
- Other Investment Return (Gain) Loss	(14,108,235)	5,247,684
Experience (Gain) Loss from all Other Sources		749,295
Increase (Decrease) in Actuarial Accrued Liability		
- Benefit Modifications for Actives	$ 0	
- Benefit Modifications for Retirees	5,143,958	
- Changes in Actuarial Assumptions	(4,706,925)	437,033
Actual Unfunded Actuarial Accrued Liability		$307,278,942

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2002		$ 5,996,978
Actuarially Required Contributions	$26,518,898	
Actual Contributions with Interest	(19,476,433)	
Contribution (Gain) Loss		7,042,465
Loss (Gain) to be Amortized		$ 13,039,443

Comparative Interest Rate Amortization Tabulation

Balance Calculated Using Actual Investment Return		
- Act 82 Amortization Balance at January 1, 2002	$75,421,566	
- Act 82 Amortization Payment for 2002	14,773,769	
- Comparative Interest Rate Balance at January 1, 2002		$ 90,195,335
- Actual Investment Return on Balance		(10,336,385)
- Actual Act 82 Amortization Balance at January 1, 2003		$ 79,858,950
Balance Calculated Using 10 Percent Investment Return		
- Comparative Interest Rate Balance at January 1, 2002		$ 90,195,335
- Interest at 10 Percent		9,019,534
- Comparative Act 82 Amortization Balance at January 1, 2003		$ 99,214,869
Comparative Interest Rate Amortization Tabulation (Gain) Loss		$ 19,355,919

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	$251,025,283	1998	2037	$282,609,632	35	14,773,769
Assump. Chg	$(2,912,234)	1998	2017	$(2,571,556)	15	$(289,040)
Exp. Gain	$(675,232)	1999	2013	$(570,062)	11	$(76,121)
Exp. Gain	$(927,052)	2000	2014	$(823,550)	12	$(104,428)
Exp. Loss	$6,608,820	2001	2015	$6,138,383	13	$743,884
Assum.Chg.	$ 597,864	2002	2021	$ 586,178	19	$ 59,189
Experience Loss	$4,011,726	2002	2016	$3,875,091	14	$ 451,229
Investment Loss	$4,719,077	2002	2032	$4,558,351	30	$ 398,980
Agg. Changes thru Last Valuation	N/A	N/A	2020	$11,192,835	18	$ 1,183,693
Assum. Chg.	$(4,706,925)	2003	2022	$(4,706,925)	20	$(465,723)
Ben. Mod.-Act.	N/A					
Ben. Mod.-Ret.	$5,143,958	2003	2012	$5,143,958	10	$728,950
Experience Loss	$7,791,758	2003	2017	$7,791,758	15	$ 875,785
Investment Loss	$5,247,684	2003	2032	$5,247,684	30	$ 459,315
Agg. Changes - 2003	N/A	N/A	2016	$ 13,476,475	14	$1,598,327
Agg. Changes	N/A	N/A	2017	$ 24,669,310	15	$ 2,782,020
Aggregate	N/A	N/A		$307,278,942		$17,555,789

Details of the Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	$ 251,025,283
40-Year Amortization Payment	$ 20,927,824
Future Value at End of 40-Year Period	$ 7,192,636,133
Payment to Provide the Same Future Value with 10% Annual Earnings	$ 14,773,769

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

Total Actuarial (Gain) Loss for 2002	$13,039,442
Investment Losses from 2002	$(5,247,684)
Net Actuarial and Contribution (Gain) Loss	$ 7,791,758

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

Total Actuarial (Gain) Loss for 2001	$ 8,730,803
Investment Losses from 2001	$(4,719,077)
Net Actuarial and Contribution (Gain) Loss	$ 4,011,726

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**	**$120,512,415.10**	**47.6%**	**N/A**
Plan Year	**Req. Prin.Pymt.**	**Req.Int.Pymt.**	**Annual Debt Service**	**Disc.Amort.**	**Prin.Balance at Val Date**
1998		$3,921,658.75	$3,921,658.75	$ 0	$120,512,415.10
1999	$471,000.00	7,830,011.75	8,301,011.75	0	120,512,415.10
2000	471,000.00	7,803,518.00	8,274,518.00	0	120,041,415.10
2001	471,000.00	7,776,882.95	8,247,882.95	0	119,570,415.10
2002	471,000.00	7,749,753.35	8,220,753.35	0	119,099,415.10
2003	471,000.00	7,722,411.80	8,193,411.80	0	118,628,415.10
2004	471,000.00	7,694,787.65	8,165,787.65	0	118,157,415.10
2005	1,179,855.01	7,645,426.83	8,825,281.84	0	117,686,415.10
2006	1,092,720.01	7,576,976.41	8,669,696.42	0	116,506,560.09
2007	1,158,660.01	7,508,582.50	8,667,242.51	0	115,413,840.08
2008	1,208,115.01	7,436,244.85	8,644,359.86	0	114,255,180.07
2009	1,304,670.00	7,353,582.89	8,658,252.89	0	113,047,065.06
2010	1,417,710.00	7,263,616.00	8,681,326.00	0	111,742,395.06
2011	1,521,330.00	7,171,771.00	8,693,101.00	0	110,324,685.06
2012	3,716,190.01	7,007,169.44	10,723,359.45	0	108,803,355.06
2013	5,173,935.00	6,725,837.03	11,899,772.03	0	105,087,165.05
2014	5,505,990.01	6,382,619.91	11,888,609.92	0	99,913,230.05
2015	5,988,765.01	6,009,040.37	11,997,805.38	0	94,407,240.04
2016	6,386,760.00	5,606,835.82	11,993,595.82	0	88,418,475.03
2017	8,593,395.01	5,119,980.78	13,713,375.79	0	82,031,715.03
2018	6,233,685.01	4,638,100.67	10,871,785.68	0	73,438,320.02
2019	9,434,130.01	4,124,179.63	13,558,309.64	0	67,204,635.01
2020	10,079,400.01	3,480,233.14	13,559,633.15	0	57,770,505.00
2021	10,767,060.01	2,792,299.96	13,559,359.97	0	47,691,104.99
2022	11,504,175.00	2,057,349.21	13,561,524.21	0	36,924,044.98
2023	12,290,744.99	1,272,116.86	13,562,861.85	0	25,419,869.98
2024	13,129,124.99	433,261.15	13,562,386.14	0	13,129,124.99

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.