

ACTUARIAL VALUATION REPORT

for the

City of Pittsburgh

Firemen's Relief and Pension Fund

as of

January 1, 2005

Report Date: July 10, 2006

Table of Contents

	<u>Page</u>
Section One: Introduction.....	1
Section Two: Certification.....	5
Section Three: Valuation Highlights.....	6
Section Four: Summary of Plan Provisions	7
Section Five: Development of Contribution Requirements	
Table 05-1: Normal Cost and Actuarial Accrued Liability.....	10
Table 05-2: Actuarial (Gain) Loss Determination.....	11
Table 05-3: Amortization of Unfunded Actuarial Accrued Liability.....	12
Table 05-4: Required Municipal Contributions (MMO)	13
Section Six: Accounting Information	
Accumulated Plan Benefits	14
GAS #27 Information.....	15
Section Seven: Actuarial Basis for Valuation	
Actuarial Assumptions.....	16
Actuarial Cost Method.....	19
Section Eight: Demographic Summaries	20
Section Nine: Plan Assets	
Combined Municipal Pension Trust Fund Calendar Year 2003.....	27
Undivided Participation Calculation Calendar Year 2003.....	28
Combined Municipal Pension Trust Fund Calendar Year 2004.....	29
Undivided Participation Calculation Calendar Year 2004.....	30
Section Ten: Supplementary Exhibits for Plans Funded with Pension Bond Proceeds	
Table 05-5: Unfunded Actuarial Accrued Liability Excluding Assets Arising from Pension Bond Proceeds	31
Table 05-6: Actuarial (Gain) Loss Determination Excluding Assets Arising from Pension Bond Proceeds	32
Table 05-7: Amortization of Unfunded Actuarial Accrued Liability Excluding Assets Arising from Pension Bond Proceeds.....	33
Debt Service Schedule by Plan Year, Pension Bond Issue of March 10, 1998.....	34
Section Eleven: Glossary.....	35

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, 2005. Our actuarial valuation is based upon participant data as of January 1, 2005 and upon asset information as of December 31, 2004 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, 2004 the calculated value of assets in the Firemen's Relief and Pension Fund is \$145,995,397. Section Nine contains exhibits illustrating the calculation of this amount.

2005 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, 2005 compared to the prior year are as follows:

	Current Year 2005	Prior Year 2003
<i>Normal Cost as a Percentage of Total W-2 Payroll</i>	8.951%	9.761%
<i>Expenses as a Percentage of Total W-2 Payroll</i>	1.400%	1.400%
<i>Amortization Payment</i>	\$6,041,482	\$7,144,462

The change in actuarial costs from valuation to valuation 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 2005 is approximately \$5.70 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 05-2. A similar calculation is included in Table 05-6 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, 2005, to implement the changes recommended in the January 1, 2005 experience study. The assumption changes are in the rates of mortality for employees, retirees, survivors and disabled participants, which are now based on the RP-2000 Mortality Tables with adjustments to conform to the results of the experience study. The adjustments are described in Section Seven, which also includes sample rates of mortality.

The RP-2000 Mortality Tables are the most recent tables developed using large amounts of data. These tables are particularly useful in valuing the City's pension plans because separate rates are available for employees, annuitants and beneficiaries.

These assumption changes increased the Unfunded Actuarial Accrued Liability by \$847,777. All of the assumptions currently in use are shown in Section Seven.

Firefighters earned atypical amounts of overtime during 2004. A one-time adjustment was made to remove the effects of this atypical overtime from the pay used to project benefits that will be paid in the future. Pay for 2004 was multiplied by 0.875 to adjust for the unusually high overtime pay.

Benefit Changes

There were no benefit changes during the period from January 1, 2003 through January 1, 2005.

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 gain of \$10,559,362. The major factor contributing to the actuarial gain was a return on investment greater than the 8.75 percent assumed in the prior valuation.

This gain was partially offset by contribution losses that arose because the Minimum Municipal Obligation calculations based on previous valuations were compared to actuarial requirements based on the January 1, 2003 valuation reports. Act 205 required that the Minimum Municipal Obligation calculation for 2003 be presented to City Council by September 30, 2002. As a result, the 2003 contributions had to be based on an earlier valuation and could not reflect the contribution requirements of the 2003 actuarial valuation. Timing factors were also involved in the calculation of the 2004 Minimum Municipal Obligation. Another factor reducing the net gain was the greater than anticipated number of disability and regular retirements during the two-year period. A total of 53 participants began to receive disability benefits and 68 participants took normal retirement.

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	01/01/05	01/01/03	Change
Total Active	737	867	(130)
Vested	287	391	(104)
Not Vested	450	476	(26)
Total In Payment Status	1,029	973	56
Retirement Benefits	432	410	22
Disability Benefits	237	211	26
Survivor Benefits	360	352	8
Deferred	1	1	0
Total	1,767	1,841	(74)

Average Monthly Benefit

In Payment Status

Retirement Benefits	\$2,008	\$1,681	\$ 327
Disability Benefits	\$1,817	\$1,448	\$ 369
Survivor Benefits	\$ 542	\$ 499	\$ 43
Deferred	\$2,877	\$2,877	\$ 0

Active Participant Averages

Hire Age	29.4	29.3	0.1
Attained Age	47.7	46.5	1.2
Normal Retirement Age	53.6	53.4	0.2
Assumed Future Service	15.0	15.0	0
Monthly Compensation	\$6,362	\$5,008	\$1,354

Financial Data

Market Value of Assets	\$145,995,397	\$114,527,374	\$ 31,468,023
Accumulated Employee Contributions	\$ 34,718,107	\$ 34,955,861	\$ (237,754)

Cost Components

Normal Cost as a percentage of total payroll	8.951%	9.761%	-0.810%
Expenses as a percentage of total payroll	1.400%	1.400%	0.000%
Total	10.351%	11.161%	-0.810%
Amortization Payment	\$6,041,482	\$7,144,462	\$(1,102,980)

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

Average Compensation

- ▼ Total W-2 wages
- ▼ Compensation averaged over the 36-month period prior to retirement or severance

Normal Retirement

Eligibility

Members hired before January 1, 1976

Monthly Benefit

- ▼ Later of age 50 or Completion of 20 years of service
- ▼ Completion of 20 years of service
- ▼ Equal to 50% of average compensation plus service increment, if any

Late Retirement

Eligibility

Amount of Benefit

- ▼ Employment beyond normal retirement
- ▼ 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 05-1: Normal Cost and Actuarial Accrued Liability

Normal Cost

Retirement Benefits	\$3,255,393
Disability Benefits	1,543,072
Preretirement Death Benefits	161,237
Postretirement Death Benefits	2,922
Refunds to Withdrawals	89,460
Medicare Premium Benefits	0
Vested Benefits	<u>13,514</u>
Total	\$5,065,598

Actuarial Accrued Liability

Actuarial Present Value of Benefits at Attained Age

	<u>Deferred</u>	<u>In Payment</u>	<u>Active</u>	<u>All</u>
Retirement Benefits	\$279,681	\$ 82,993,260	\$124,455,007	\$207,727,948
Disability Benefits	0	43,009,809	35,492,349	78,502,158
Survivor Benefits	0	15,552,058	0	15,552,058
Preretirement Death Benefits	0	0	2,887,343	2,887,343
Postretirement Death Benefits	0	0	100,483	100,483
Refunds to Withdrawals	0	0	714,661	714,661
Medicare Premium Benefits	0	0	0	0
Vested Benefits	<u>0</u>	<u>0</u>	<u>234,945</u>	<u>234,945</u>
Total	\$279,681	\$141,555,127	\$163,884,788	\$305,719,596

Actuarial Present Value of Future Normal Costs

Retirement Benefits	\$32,066,410
Disability Benefits	15,247,098
Preretirement Death Benefits	1,585,668
Postretirement Death Benefits	25,000
Refunds to Withdrawals	869,146
Medicare Premium Benefits	0
Vested Benefits	<u>156,646</u>
Total	\$49,949,968 (\$49,949,968)

Actuarial Accrued Liability

\$255,769,628

Unfunded Actuarial Accrued Liability

Actuarial Accrued Liability	\$255,769,628
Actuarial Value of Assets	<u>(145,995,397)</u>
Unfunded Actuarial Accrued Liability	\$ 109,774,231

Table 05-2: Actuarial (Gain) Loss Determination

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2003			\$ 115,564,629
	2003	2004	
Normal Cost/Administrative Expenses Assumed	\$ 6,067,449	\$ 6,369,812	12,437,261
Interest Charged at Valuation Rate			22,774,218
Contributions Made			
- <i>Municipality</i>	\$ 1,571,807	\$ 3,540,241	
- <i>State Aid Allocated</i>	5,052,699	4,990,063	
- <i>Employees</i>	<u>3,718,789</u>	<u>3,972,800</u>	\$ (22,846,399)
Interest Credited at Valuation Rate			(1,581,429)
Special Adjustment for Act 82 Interest Rate			<u>(968,368)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$125,379,912

Experience from Investment Return

- <i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>	\$ (5,800,116)		
- <i>Other Investment Return (Gain) Loss</i>	<u>(14,754,444)</u>		(20,554,560)
Experience (Gain) Loss from all Other Sources			4,101,102
Increase (Decrease) in Actuarial Accrued Liability			
- <i>Benefit Modifications for Actives</i>		\$ 0	
- <i>Benefit Modifications for Retirees</i>		0	
- <i>Changes in Actuarial Assumptions</i>		<u>847,777</u>	<u>847,777</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$109,774,231</u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2003			\$ (16,453,458)
Actuarially Required Contributions and			
Bond Proceeds with Interest		\$30,321,924	
Actual Contributions with Interest		<u>(24,427,828)</u>	
Contribution (Gain) Loss			<u>5,894,096</u>
Loss (Gain) to be Amortized			\$(10,559,362)

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2003	2004	
Act 82 Amortization Balance at January 1	\$ 29,100,453	\$ 41,603,903	
Act 82 Amortization Payment	<u>4,333,255</u>	<u>4,333,255</u>	
Comparative Interest Rate Balance at January 1	33,433,708	45,937,158	
Actual Investment Return on Balance	<u>8,170,195</u>	<u>5,084,325</u>	
Actual Act 82 Amortization			
Balance at December 31	\$ 41,603,903	\$51,021,483	51,021,483

<i>Balance Calculated Using 10 Percent Investment Return</i>	2003	2004	
Comparative Interest Rate Balance at January 1	\$ 33,433,708	\$ 41,110,334	
Interest at 10 Percent	<u>3,343,371</u>	<u>4,111,033</u>	
Comparative Act 82 Amortization			
Balance at December 31	\$ 36,777,079	\$ 45,221,367	\$ 45,221,367

<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>			\$ (5,800,116)
--	--	--	----------------

Table 05-3: 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	\$87,226,595	33	\$ 4,333,255
Assump. Change	\$ (2,712,163)	1998	2017	\$(2,221,249)	13	\$ (269,184)
Experience Gain	\$ (7,309,856)	1999	2013	\$(5,427,782)	9	\$ (824,062)
Experience Gain	\$ (10,034,869)	2000	2014	\$(7,976,655)	10	\$(1,130,373)
Experience Loss	\$ 14,852,702	2001	2015	\$12,519,995	11	\$ 1,671,810
Experience Loss	\$ 1,151,699	2002	2016	\$ 1,021,598	12	\$ 129,540
Investment Loss	\$ 18,857,549	2002	2032	\$17,923,030	28	\$ 1,594,334
Assump. Change	\$(17,287,129)	2003	2022	\$(16,561,719)	18	\$(1,710,460)
Ben. Mod. - Active	\$ 957,341	2003	2022	\$ 917,169	18	\$ 94,723
Ben. Mod. - Retired	\$6,733,210	2003	2012	\$ 5,796,973	8	\$ 954,163
Experience Gain	\$(1,201,890)	2003	2017	\$(1,114,745)	13	\$ (135,091)
Investment Loss	\$27,829,106	2003	2032	\$27,382,606	28	\$ 2,435,805
Aggregate Changes Through Last Val.	N/A	N/A	2035	\$ 32,259,221	31	\$ 2,811,205
Assump. Change	\$ 847,777	2005	2024	\$ 847,777	20	\$83,883
Ben. Mod. - Active	N/A					
Ben. Mod. - Retired	N/A					
Experience Gain	\$(10,559,362)	2005	2019	\$(10,559,362)	15	\$ (1,186,861)
Agg. Changes-2005	N/A	N/A	2019	\$ (9,711,585)	15	\$ (1,102,978)
Aggregate Changes	N/A	N/A	N/A	\$ 22,547,636	N/A	\$ 1,708,227
Aggregate	N/A	N/A		\$109,774,231		\$ 6,041,482

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

Table 05-4: 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 05-1)	\$ 5,065,598
Total Annual Payroll	\$ 56,590,713
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	8.951%
• Administrative Expense (as a % of Payroll)	1.400%
• Gross Normal Cost	10.351%
Net Amortization Payment (Table 05-3)	\$ 6,041,482
Funding Adjustment	\$ 0

Section Six: Accounting Information

Accumulated Plan Benefits	<u>01/01/05</u>	<u>01/01/03</u>
Assets at Market Value	<u>\$145,995,397</u>	<u>\$114,527,374</u>
Actuarial Present Value of Vested Benefits		
Retired	\$141,555,127	
Deferred	279,681	
Employee Contributions	3,696,813	
Active	<u>53,689,316</u>	
Total	<u>\$199,220,937</u>	<u>\$175,388,131</u>
Unfunded Actuarial Present Value of Vested Benefits	<u>\$ 53,225,540</u>	<u>\$60,860,757</u>
Actuarial Present Value of Accrued Benefits		
Retired	\$141,555,127	
Deferred	279,681	
Employee Contributions	404,857	
Active	<u>88,473,611</u>	
Total	<u>\$230,713,276</u>	<u>\$204,265,615</u>
Unfunded Actuarial Present Value of Accrued Benefits	<u>\$ 84,717,879</u>	<u>\$ 89,738,241</u>

GAS #27 Information

Summary of Annual Pension Cost and Net Pension Obligation (NPO) for Prior Years

	2003	2004
Annual required contribution (ARC)	\$ 6,624,506	\$ 8,530,304
Interest on NPO	0	0
Adjustment to the ARC	<u>0</u>	<u>0</u>
Annual Pension cost	6,624,506	8,530,304
Contributions made	\$ <u>6,624,506</u>	\$ <u>8,530,304</u>
Change in NPO	0	0
NPO, Beginning of Year (1/1)	<u>0</u>	<u>0</u>
NPO, End of Year (12/31)	\$ 0	\$ 0

Annual Pension Cost for the Year Beginning 1/1/2005

Annual Required Contribution (ARC)	\$ 9,046,362
Interest on NPO	0
Adjustment to the ARC	<u>0</u>
Annual Pension Cost	\$ 9,046,362

Other Information from the 1/1/2005 Actuarial Valuation for GAS #25 and GAS #27

Actuarial Cost Method	Entry Age
Asset Valuation Method	Market Value
	Level Dollar
Amortization Method	Closed
Aggregate Remaining Amortization Period (Years)	33
Actuarial Assumptions	
Investment Rate of Return	8.75%
Projected Salary Increases	5.75%
Underlying Inflation Rate	3.50%

Section Seven: Actuarial Basis of Valuation

Actuarial Assumptions: January 1, 2005

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

One Time Pay Adjustment For this valuation only, 2004 pay is multiplied by 0.875 before applying the salary projection scale to project benefits, to offset the effects of atypical amounts of overtime pay earned for 2004.

Employee Characteristics

Mortality	RP-2000 Mortality Tables, with adjustments to reflect Pittsburgh Pension Plan mortality experience as confirmed by experience studies. The adjusted rates are based on the following:
Active Participants	RP-2000 Mortality Tables – Employee Rates of Mortality
Inactive Participants	RP-2000 Mortality Tables for Healthy Annuitants, adjusted by blue collar ratios (Table 5-5 of <i>RP-2000 Mortality Tables Report</i>) and set forward two years in age for healthy and deferred retirees and set forward five years in age for disabled retirees.
Surviving Beneficiaries:	RP-2000 Rates, adjusted for healthy inactives as above, and further adjusted by ratios of female beneficiary experience to overall female RP-2000 Healthy Annuitant Mortality Rates (Appendix D of <i>RP-2000 Mortality Tables Report</i>)

Sample Rates (Rounded):

Age	Active Male Participant	Male Regular Retiree	Male Disabled Retiree	Male Beneficiary
45	0.15%	0.45%	0.56%	0.57%
55	0.30%	0.88%	1.06%	1.16%
65	0.76%	2.01%	2.68%	2.54%
75	N/A	5.27%	7.05%	5.60%
85	N/A	13.86%	18.34%	14.36%

Age	Active Female Participant	Female Regular Retiree	Female Disabled Retiree	Female Beneficiary
45	0.11%	0.19%	0.23%	0.23%
55	0.23%	0.44%	0.62%	0.62%
65	0.58%	1.37%	1.86%	1.74%
75	N/A	3.69%	4.90%	3.93%
85	N/A	10.24%	13.67%	10.61%

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	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	8	3	0	0	0	0	0	11
30-34	0	0	0	15	44	6	0	0	0	0	65
35-39	0	0	0	15	47	21	3	0	0	0	86
40-44	0	0	0	15	32	23	31	6	0	0	107
45-49	0	0	0	7	10	19	68	49	15	0	168
50-54	0	0	0	3	2	8	34	26	63	24	160
55-59	0	0	0	0	2	6	25	5	22	55	115
60-64	0	0	0	0	0	0	3	2	1	18	24
65+	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	63	140	83	164	88	101	98	737

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	29	\$ 933,471.48	\$ 32,188.67
55-59	52	1,553,958.36	29,883.81
60-64	57	1,718,531.04	30,149.67
65-69	68	2,050,866.00	30,159.79
70-74	70	1,545,441.84	22,077.74
75-79	91	1,703,107.32	18,715.47
80-84	41	594,817.56	14,507.75
84+	24	309,492.12	12,895.51
Total	432	\$10,409,685.72	\$ 24,096.49

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	1	\$ 28,516.08	\$ 28,516.08
35-39	1	24,302.16	24,302.16
40-44	1	25,965.00	25,965.00
45-49	8	224,296.08	28,037.01
50-54	42	1,108,977.36	26,404.22
55-59	39	1,115,094.60	28,592.17
60-64	26	613,510.80	23,596.57
65-69	29	599,888.40	20,685.81
70-74	30	508,375.80	16,945.86
75-79	38	600,504.36	15,802.75
80-84	14	194,771.28	13,912.23
84+	8	124,351.80	15,543.98
Total	237	\$ 5,168,553.72	\$ 21,808.24

Age Distribution of Retired Participants

Survivors			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	2	\$ 11,242.32	\$ 5,621.16
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	0	0.00	0.00
45-49	7	78,469.20	11,209.89
50-54	6	77,469.96	12,911.66
55-59	12	108,787.80	9,065.65
60-64	23	245,577.36	10,677.28
65-69	37	276,060.12	7,461.08
70-74	58	401,675.04	6,925.43
75-79	85	518,965.92	6,105.48
80-84	62	334,318.68	5,392.24
84+	68	289,099.92	4,251.47
Total	360	\$ 2,341,666.32	\$ 6,504.63

Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	2	\$ 11,242.32	\$ 5,621.16
30-34	1	28,516.08	28,516.08
35-39	1	24,302.16	24,302.16
40-44	1	25,965.00	25,965.00
45-49	15	302,765.28	20,184.35
50-54	77	2,119,918.80	27,531.41
55-59	103	2,777,840.76	26,969.33
60-64	106	2,577,619.20	24,317.16
65-69	134	2,926,814.52	21,841.90
70-74	158	2,455,492.68	15,541.09
75-79	214	2,822,577.60	13,189.61
80-84	117	1,123,907.52	9,606.05
84+	100	722,943.84	7,229.44
Total	1,029	\$ 17,919,905.76	\$ 17,414.87

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	1	\$ 34,521.84	\$ 34,521.84
50-54	0	0.00	0.00
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, 2005

Changes in Plan Participation for Active Members

Active Members	Number
As of January 1, 2003	867
New Entrants	<u>0</u>
Total	867

Separation from Active Service

Separation with a Deferred Benefit	0
Separation without a Deferred Benefit	(5)
Transfer to another Plan	0
Disability	(53)
Death	(4)
Retirement with a Service Retirement Benefit	<u>(68)</u>
Total Separations	(130)

Data Adjustments

Net Adjustments	<u>0</u>
Active Members as of January 1, 2005	737

Changes in Participants for Inactive Members and Survivors

	Deferred Vested	Regular Retirements	Disability Retirement	Survivors		Total
				Child	Other	
As of January 1, 2003	1	410	211	3	349	974
New Benefit Recipients	0	68	53	0	52	173
Death	0	(46)	(28)	0	(38)	(112)
Other Cessation of Benefits	0	0	0	(1)	(1)	(2)
Net Data Adjustments	0	0	1	0	(4)	(3)
As of January 1, 2005	1	432	237	2	358	1,030

Section Nine: Plan Assets

Combined Municipal Pension Trust Fund Calendar Year 2003

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

	<u>1/1/03</u>	<u>1/1/04</u>
Market Value of Assets - Cash Basis	\$313,952,163	\$361,301,912
Accrued Interest	1,019,024	952,571
Accrued Contributions	0	0
Other Receivables	0	0
Accrued Expenses and Other Payables	<u>(2,500,222)</u>	<u>(2,835,977)</u>
Market Value of Assets - Accrual Basis	\$312,470,965	\$359,418,506

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2003		\$312,470,965
Contributions Toward Pension Liability		
- Policemen's	\$17,079,077	
- Firemen's	10,343,295	
- Municipal	<u>7,860,821</u>	\$ 35,283,193
Miscellaneous Contributions and Pass Through Items		3,666,144
Interest and Dividends		9,341,287
Net Appreciation (Decline) in Fair Value Of Investments		62,513,423
Payments to Participants		
- Policemen's	\$ 28,418,968	
- Firemen's	15,884,171	
- Municipal	<u>17,318,082</u>	(61,621,221)
Expenses		<u>(2,235,285)</u>
Balance as of December 31, 2003		\$359,418,506

Undivided Participation Calculation Calendar Year 2003 - Accrual Basis

	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
January 1, 2003 Market Value	\$106,340,161	\$114,527,374	\$ 91,603,430	\$312,470,965
Plan-Specific Contributions	17,760,917	11,143,737	9,897,022	38,801,676
Plan-Specific Distributions	<u>(28,757,437)</u>	<u>(16,108,008)</u>	<u>(17,628,051)</u>	<u>(62,493,496)</u>
Sub-Total	\$ 95,343,641	\$109,563,103	\$ 83,872,401	\$288,779,145
Sub-Total Percentages	33.02%	37.94%	29.04%	100.00%
Allocated Expenses	(450,066)	(517,126)	(395,818)	(1,363,010)
Allocated Investment Earnings	<u>23,775,183</u>	<u>27,317,700</u>	<u>20,909,488</u>	<u>72,002,371</u>
December 31, 2003 Market Value	\$118,668,758	\$136,363,677	\$104,386,071	\$359,418,506

Contributions and Distributions for 2003 - Accrual Basis

Plan-Specific Contributions	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
State Aid:				
General Municipal				
Pension System State Aid	\$ 9,861,324	\$ 5,052,699	\$ 3,300,465	\$18,214,488
Supplemental State Aid	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<i>Total State Aid</i>	\$ 9,861,324	\$ 5,052,699	\$ 3,300,465	\$18,214,488
Member Contributions	3,597,614	3,718,789	3,535,639	10,852,042
City Contributions	3,620,139	1,571,807	1,024,717	6,216,663
Pass Through Contributions	681,840	800,442	2,036,201	3,518,483
Miscellaneous Income	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Contributions	\$17,760,917	\$11,143,737	\$ 9,897,022	\$38,801,676

Plan-Specific Distributions

Benefit Payments to Participants	\$28,211,944	\$15,866,076	\$16,447,663	\$ 60,525,683
Refunds to Participants	207,024	18,095	870,419	1,095,538
Administrative Expenses	<u>338,469</u>	<u>223,837</u>	<u>309,969</u>	<u>872,275</u>
Total Distributions	\$28,757,437	\$16,108,008	\$17,628,051	\$62,493,496

Combined Municipal Pension Trust Fund Calendar Year 2004

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 Maher Duessel. Assets are shown at market value.

Summary of Values for the Aggregated Trust

	1/1/04	1/1/05
Market Value of Assets – Cash Basis	\$ 361,301,912	\$ 374,352,191
Accrued Interest	952,571	1,659,618
Accrued Contributions	0	0
Other Receivables	0	368,969
Accrued Expenses and other Payables	<u>(2,835,977)</u>	<u>(2,772,371)</u>
Market Value of Assets – Accrual Basis	\$ 359,418,506	\$ 373,608,407

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2004		\$ 359,418,506
Contributions toward Pension Liability		
Police	\$ 18,732,447	
Firemen's	12,503,104	
Municipal	<u>11,369,268</u>	
		\$ 42,604,819
Miscellaneous and Pass Through Items		4,069,020
Interest and Dividends		10,815,704
Net Appreciation (Decline) in Fair Value of Investments		26,432,214
Payments to Participants		
Police	\$ 31,331,530	
Firemen's	17,628,288	
Municipal	<u>18,421,561</u>	
		(67,381,379)
Expenses		<u>(2,350,477)</u>
Balance as of December 31, 2004		\$ 373,608,407

Undivided Participation Calculation Calendar Year 2004 - Accrual Basis

	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
January 1, 2004 Market Value	\$118,668,758	\$136,363,677	\$104,386,071	\$359,418,506
Plan-Specific Contributions	19,373,109	13,255,046	13,406,014	46,034,169
Plan-Specific Distributions	<u>(31,721,618)</u>	<u>(17,874,666)</u>	<u>(18,715,079)</u>	<u>(68,311,363)</u>
Sub-Total	\$ 106,320,249	\$131,744,057	\$ 99,077,006	\$337,141,312
Sub-Total Percentages	31.54%	39.08%	29.38%	100.00%
Allocated Expenses	(448,023)	(555,129)	(417,341)	(1,420,493)
Allocated Investment Earnings	<u>11,949,745</u>	<u>14,806,469</u>	<u>11,131,374</u>	<u>37,887,588</u>
December 31, 2004 Market Value	\$117,821,971	\$145,995,397	\$109,791,039	\$373,608,407

Contributions and Distributions for 2004 - Accrual Basis

Plan-Specific Contributions	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
State Aid:				
General Municipal Pension System State Aid	\$ 6,096,378	\$ 4,990,063	\$ 6,815,483	\$17,901,924
Supplemental State Aid	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<i>Total State Aid</i>	\$ 6,096,378	\$ 4,990,063	\$ 6,815,483	\$17,901,924
Member Contributions	3,306,730	3,972,800	3,233,207	10,512,737
City Contributions	9,329,339	3,540,241	1,320,578	14,190,158
Pass Through Contributions	640,662	751,942	2,036,746	3,429,350
Miscellaneous Income	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Contributions	\$19,373,109	\$13,255,046	\$13,406,014	\$46,034,169

Plan-Specific Distributions

Benefit Payments to Participants	\$30,908,188	\$17,428,653	\$17,304,441	\$ 65,641,282
Refunds to Participants	423,342	199,635	1,117,120	1,740,097
Administrative Expenses	<u>390,088</u>	<u>246,378</u>	<u>293,518</u>	<u>929,984</u>
Total Distributions	\$31,721,618	\$17,874,666	\$18,715,079	\$68,311,363

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

**Table 05-5: Unfunded Actuarial Accrued Liability Excluding Assets
Arising from Pension Bond Proceeds**

Assets Excluding Pension Bond Proceeds		
Assets Excluding Bond Proceeds at January 1, 2003		\$56,301,391
Receipts	2003	2004
Employer Contributions	\$ 3,403,199	\$5,371,633
Employee Contributions	3,718,789	\$3,972,800
State Aid	5,052,699	4,990,063
Supplemental State Assistance	0	0
Investment Income	1,592,311	2,079,656
Net Appreciation	11,577,328	4,877,298
Pass Through Contributions	<u>800,442</u>	<u>751,942</u>
 Total Receipts		 \$ 48,188,161
 Disbursements		
Monthly Benefit Payments	\$15,065,634	\$ 16,676,711
Refund of Employee Contributions	18,095	199,635
Administrative Expenses	543,551	1,035,302
Pass Through Payments	<u>800,442</u>	<u>751,942</u>
 Total Disbursements		 (35,091,312)
 Assets Excluding Bond Proceeds at January 1, 2005		 \$69,398,240
 Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds		
Actuarial Accrued Liability (Table 05-1)		\$255,769,628
Assets Excluding Bond Proceeds at January 1, 2005		<u>(69,398,240)</u>
Adjusted Unfunded Actuarial Accrued Liability		\$186,371,388

Table 05-6: Actuarial (Gain) Loss Determination Excluding Assets Arising from Pension Bond Proceeds

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2003			\$173,790,612
	2003	2004	
Normal Cost Assumed	\$ 6,067,449	\$ 6,369,812	12,437,261
Interest Charged at Valuation Rate			33,409,557
Contributions Made			
- Municipality	\$ 3,403,199	\$ 5,371,633	
- State Aid Allocated	5,052,699	4,990,063	
- Employees	<u>3,718,789</u>	<u>3,972,800</u>	\$ (26,609,183)
Interest Credited at Valuation Rate			(1,755,647)
Special Adjustment Because of Higher Act 82 Interest Rate			<u>(1,982,013)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$ 189,390,587
Experience from Investment Return			
- Comparative Interest Rate Amortization Tabulation (Gain) Loss		\$ (11,871,411)	
- Other Investment Return (Gain) Loss		<u>2,954,356</u>	(8,917,055)
Experience (Gain) Loss from all Other Sources			5,050,079
Increase (Decrease) in Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$ 0	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>847,777</u>	<u>847,777</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$186,371,388</u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2003		\$ (3,866,976)
Actuarially Required Contributions	\$34,479,467	
Actual Contributions with Interest	<u>(28,264,830)</u>	
Contribution (Gain) Loss		<u>6,214,637</u>
Loss (Gain) to be Amortized		\$ 2,347,661

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2003	2004	
- Act 82 Amortization Balance at January 1	\$ 59,561,471	\$ 85,152,960	
- Act 82 Amortization Payment	<u>8,869,108</u>	<u>8,869,108</u>	
- Comp Interest Rate Balance at January 1	\$ 68,430,579	\$ 94,022,068	
- Actual Investment Return on Balance	<u>16,722,381</u>	<u>10,406,363</u>	
- Actual Act 82 Amortization			
Balance at January 1	85,152,960	104,428,431	\$104,428,431
<i>Balance Calculated Using 10 Percent Investment Return</i>			
- Comparative Interest Rate Balance at January 1	\$ 68,430,579	\$ 84,142,745	
- Interest at 10 Percent	<u>6,843,058</u>	<u>8,414,275</u>	
- Comp Act 82 Amort Bal at December 31	\$ 75,273,637	\$ 92,557,020	\$ 92,557,020
<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>			\$ (11,871,411)

Table 05-7: 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	\$178,531,404	33	\$8,869,108
Assump. Chg	\$(2,712,163)	1998	2017	\$(2,221,249)	13	\$(269,183)
Experience Gain	\$(8,740,776)	1999	2013	\$(6,490,281)	9	\$(985,373)
Experience Gain	\$(5,967,507)	2000	2014	\$(4,743,534)	10	\$(672,206)
Experience Loss	\$ 5,187,425	2001	2015	\$ 4,372,708	11	\$ 583,893
Experience Loss	\$ 12,280,996	2002	2016	\$ 1,108,314	12	\$ 140,536
Investment Loss	\$ 9,840,706	2002	2032	\$ 9,353,032	28	\$ 831,994
Assum. Chg.	\$(17,287,129)	2003	2022	\$(16,561,720)	18	\$(1,710,460)
Ben. Mod. - Act.	\$ 957,341	2003	2022	\$ 917,169	18	\$ 94,723
Ben. Mod. - Ret.	\$6,733,210	2003	2012	\$5,796,974	8	\$ 954,164
Experience Gain	\$ (930,312)	2003	2017	\$ (862,858)	13	\$ (104,566)
Investment Loss	\$14,203,883	2003	2032	\$13,975,991	28	\$ 1,243,227
Agg. Changes thru Last Val	N/A	N/A	N/A	\$ 4,644,546	N/A	\$106,748
Assum. Chg.	\$ 847,777	2005	2024	\$ 847,777	20	\$ 83,883
Ben. Mod. - Act.	N/A					
Ben. Mod. - Ret.	N/A					
Experience Loss	\$ 2,347,661	2005	2019	\$2,347,661	15	\$ 263,875
Agg. Chg – 2005	N/A	N/A	2020	\$3, 195,438	16	\$ 347,757
Agg. Changes	N/A	N/A	N/A	\$ 7,839,984	N/A	\$ 454,505
Aggregate	N/A	N/A		\$186,371,388		\$9,323,613

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

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.