

REVISED

ACTUARIAL VALUATION REPORT

for the

City of Pittsburgh

Municipal Pension Fund

as of

January 1, 2005

Report Date: September 20, 2006

Table of Contents

	<u>Page</u>
Section One: Introduction.....	1
Section Two: Certification.....	6
Section Three: Valuation Highlights.....	7
Section Four: Summary of Plan Provisions.....	8
Section Five: Development of Contribution Requirements	
Table 05-1: Normal Cost and Actuarial Accrued Liability.....	12
Table 05-2: Actuarial (Gain) Loss Determination.....	13
Table 05-3: Amortization of Unfunded Actuarial Accrued Liability.....	14
Table 05-4: Required Municipal Contributions (MMO).....	15
Section Six: Accounting Information	
Accumulated Plan Benefits.....	16
Gas #27 Information.....	17
Section Seven: Actuarial Basis for Valuation	
Actuarial Assumptions.....	18
Actuarial Cost Method.....	21
Section Eight: Demographic Summaries.....	22
Section Nine: Plan Assets	
Combined Municipal Pension Trust Fund Calendar Year 2003.....	29
Undivided Participation Calculation Calendar Year 2003.....	30
Combined Municipal Pension Trust Fund Calendar Year 2004.....	31
Undivided Participation Calculation Calendar Year 2004.....	32
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.....	33
Table 05-6: Actuarial (Gain) Loss Determination Excluding Assets Arising from Pension Bond Proceeds.....	34
Table 05-7: Amortization of Unfunded Actuarial Accrued Liability Excluding Assets Arising from Pension Bond Proceeds.....	35
Debt Service Schedule by Plan Year, Pension Bond Issue of December 15, 1996.....	36
Debt Service Schedule by Plan Year, Pension Bond Issue of March 10, 1998.....	37
Section Eleven: Glossary.....	38

Section One: Introduction

At the request of the City of Pittsburgh, we have completed a revised actuarial valuation of the City of Pittsburgh Municipal Pension Fund as of January 1, 2005. This valuation supercedes our earlier Actuarial Valuation Report dated July 10, 2006 and provides information for preparing a revised Act 205 Report Filing with the state.

Explanation of Valuation Revision

The revision was completed because of two factors. During the preparation of a study for benefit improvements adopted subsequent to the valuation date by the Teamsters, several data adjustments were reported. Included in these adjustments were five additional participants who were previously reported as having terminated during 2003 without a vested benefit. One of these participants is active, the remaining four are included in the retired data. In addition, five participants carried in the original valuation as active participants were reported as having retired December 1, 2004. One is a disability retirement. The other four have been moved to regular retirement status. The second factor was the subsequent discovery that future social security offsets at age 65 for certain retired participants had been undervalued in the original valuation. Their estimated deferred monthly offset was inadvertently valued as though it represented an annual amount. Accordingly, the present value of their offset should have been greater. This has been corrected.

The combined effect of these two factors has been to reduce the normal cost by \$3,279 and reduce the unfunded actuarial accrued liability by \$2,601,346. The reduction in the annual required amortization payment from the original report is \$292,388. The remainder of this introduction remains the same as in the original report, except where numerical values changed.

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

Under Act 205 of 1984, 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 Municipal Pension Fund is \$109,791,039. 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, as amended, is shown in Section Five. Debt service payments repay the money that was 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</i> as a Percentage of Total W-2 Payroll	5.665%	5.163%
<i>Expenses</i> as a Percentage of Total W-2 Payroll	1.100%	0.800%
<i>Amortization Payment</i>	\$8,816,171	\$8,909,808

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 Plan provisions is set forth in Section Four. The most recent pension bonds were issued in March 1998. The 2005 debt service payment for these bonds is approximately \$4.22 million. The annual debt service payment for the bonds issued in 1996 is approximately \$3.09 million. Over time, the debt service and amortization schedules will allow the City to eliminate the Unfunded Actuarial Accrued Liability with payments that increase less and have a lower present value than the increasing amortization schedule included in prior actuarial valuations.

Assumption Changes

An experience study was prepared as of January 1, 2005. The purpose of the experience study is to compare the Plan's actual experience with the valuation assumptions. Several assumption changes were made to 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.

An additional assumption change was made. Experience indicates that fewer municipal employees are becoming disabled than the previous assumption predicted. The probability of a municipal employee becoming disabled has been reduced to 65 percent of the rates previously used.

The new assumptions are described in more detail in Section Seven. These assumption changes decreased the Unfunded Actuarial Accrued Liability by \$55,417.

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. It also includes an adjustment for the difference between actual contributions made for the prior year and the theoretical amount based on the prior valuation. This adjustment is termed "contribution gain or loss." 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 gain of \$7,233,308 since the prior valuation. The primary reason for the gain was that return on investment was significantly higher than the 8.75 percent valuation assumption. In addition, gains occurred from active participant experience with generally lower salary increases than assumed and a larger than usual number of non-vested terminations. Offsetting a portion of the gain were the 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. Because of the requirements of Act 205, it was 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.

Benefit Improvements

Several benefit changes have been adopted for employees represented by the Pittsburgh Joint Collective Bargaining Council. The benefit improvement package includes the elimination of the reduction for social security benefits. Employees hired prior to January 1, 1975 will receive the same benefits as employees hired on or after January 1, 1975 and before January 1, 1988. Employee contribution refunds will include an interest credit of 5 percent interest per year. City employees hired after June 29, 2004 will have their benefits reduced by the social security offset and will not receive interest on refunded employee contributions. These changes added an additional \$7,325,991 to the Unfunded Actuarial Accrued Liability.

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 during 1998 pension bond proceeds were deposited into the pension plan that changed the ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability by more than 25 percent.

Act 82 allowed 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.

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	1,815	2,352	(537)
Vested	1,222	1,467	(245)
Not Vested	593	885	(292)
Total In Payment Status	1,688	1,590	98
Retirement Benefits	1,315	1,197	118
Disability Benefits	311	314	(3)
Survivor Benefits	62	79	(17)
Deferred	66	25	41
Total	3,569	3,967	(398)

Average Monthly Benefit

In Payment Status

Retirement Benefits	\$786	\$705	\$ 81
Disability Benefits	\$841	\$741	\$ 118
Survivor Benefits	\$418	\$326	\$ 92
Deferred	\$783	\$762	\$ 21

Active Participant Averages

Hire Age	32.6	32.6	0
Attained Age	48.5	47.2	1.3
Normal Retirement Age	60.0	60.4	(0.4)
Assumed Future Service	14.0	15.0	(1.0)
Monthly Compensation	\$2,914	\$2,832	\$ 82

Financial Data

Market Value of Assets	\$109,791,039	\$91,603,430	\$ 18,187,609
Accumulated Employee Contributions	\$ 53,390,419	\$ 48,137,868	\$ 5,252,551

Cost Components

Normal Cost as a percentage of total payroll	5.665%	5.163%	0.502%
Expenses as a percentage of total payroll	1.100%	0.800%	0.300%
Total	6.765%	5.963%	0.802%
Amortization Payment	\$8,816,171	\$8,909,808	\$ (93,637)

Section Four: Summary of Plan Provisions

<i>Plan Year</i>	▼ Twelve-month period beginning January 1 and ending December 31
<i>Plan Established</i>	▼ May 28, 1915
Principal Definitions	
<i>Employee</i>	▼ Any full-time employee of the City of Pittsburgh other than a firefighter or police officer, and full-time employees of the Pittsburgh Water and Sewer Authority
<i>Retirement Benefit Commencement Date</i>	▼ Assumed to be the first day of the month coincident with or next following eligibility for and election to retire
<i>Service Increment</i>	▼ An additional monthly benefit of 1 percent of average compensation for each completed year of service in excess of 20 years to a maximum of \$100
<i>Service</i>	▼ Assumed to be completed years of service calculated from date of hire through date of retirement or severance
<i>Normal Form of Payment</i>	▼ Monthly pension benefit payable for life
Participation Requirements	
<i>Entry Date</i>	▼ Following completion of 90-day probationary period
Compensation	
<i>Average Compensation</i>	▼ Base wages, plus “acting” or “in-grade” pay
	▼ Averaged over the 3-year period prior to retirement or severance
<i>Members hired after December 31, 1987</i>	▼ Averaged over the 4-year period prior to retirement or severance
Normal Retirement	
<i>Eligibility</i>	
<i>Employees other than Emergency Medical Services</i>	▼ Later of age 60 or completion of 8 years of service
<i>Emergency Medical Services Employees</i>	▼ Later of age 55 or completion of 8 years of service
<i>Monthly Benefit</i>	▼ Equal to 50% of average compensation and service increment, if any
	▼ Prorated for service less than 20 years
	▼ Upon reaching age 65 reduced by 50% of social security benefit; the reduction shall not exceed 50% of the monthly benefit. This reduction shall not apply to Pittsburgh Water and Sewer Employees. City non-union employees and union employees whose union has negotiated to eliminate the reduction, who were hired on or before June 29, 2004 will not be subject to the reduction.

*Members hired prior to January 1, 1975
whose union has not negotiated the benefits level
for employees hired on or after January 1, 1975
and before January 1, 1988.*

If pay is less than \$450:

- ▼ Equal to 60% of 3-year average pay
- ▼ Not less than \$130
- ▼ Plus service increment, if any

OR

If pay is greater than \$450:

- ▼ 55% of first \$650 of 3-year average pay
and 30% of excess
- ▼ Not less than \$270
- ▼ Plus service increment, if any
- ▼ Eligible retired members and spouses will
receive additional monthly payment equal
to coverage premium
- ▼ Employees hired after December 31, 1987
not eligible

Supplemental Medical

Early Retirement

Eligibility

Benefit Amount

- ▼ Later of age 50 *or* completion of 8 years of service
- ▼ Normal retirement benefit based upon
average compensation at actual retirement
- ▼ May be deferred to age 60 *or* paid
immediately in reduced amount
- ▼ Reduction will be 1/2 percent per
month for each month that payment
commences prior to age 60
- ▼ If 25 years of service, reduction applied only
on benefits attributed to earnings in excess
of \$7,800

Members hired prior to January 1, 1975

Disability

Eligibility

Benefit Amount

- ▼ Permanent disablement in line of duty *or*
- ▼ Permanent disablement (not in line of
duty) after completing 8 years of service
- ▼ Normal retirement benefit at date of
disablement
- ▼ Not prorated for service less than 20
years
- ▼ Participants hired after December 31, 1974 will have
their benefit reduced by 50% of their social security
benefit upon reaching age 65. The reduction shall not
exceed 50% of the benefit.

Members Hired After December 31, 1987

- ▼ Normal retirement benefit if at least age 60 with 8 years of service
- ▼ Upon reaching age 65, reduced by 50% of the social security benefit. The reduction shall not exceed 50 percent of the benefit
- ▼ Disabled before age 60 with at least 8 years of service calculated as of age 60 with service being greater of:
 - (a) Service at disablement or
 - (b) The lesser of 20 years and completed service (assuming work until age 60)
- ▼ Benefit is reduced so that the sum of the plan benefit and workers' compensation does 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

Members hired prior to January 1, 1975

- ▼ Attainment of age 40 *and*
- ▼ Completion of 8 years of service
- ▼ Completion of 15 years of service/no age requirement

Vested Terminated Participants

- ▼ Normal retirement benefit if contributions continue to age 50
- ▼ Benefit deferred to age 60, a benefit reduced as for early retirement may be elected at age 50.

Death Benefits Before Retirement

Death After Early Retirement Eligibility

- ▼ Surviving spouse entitled to 50% of pension that would have been payable if member retired at date of death

Death Before Early Retirement Eligibility

- ▼ Member's beneficiary receives amount equal to member's contributions

Death Benefits After Retirement

Members Hired Prior to 1988

- ▼ Member's beneficiary receives amount equal to the excess, if any, of member's contributions over retirement benefit paid on member's behalf
- ▼ Married employee may deduct up to \$100 per month from retirement benefit to provide a \$100 per month benefit payable to surviving spouse until death or remarriage
- ▼ Monthly benefit restored to full level for remainder of retiree's life
- ▼ At no time shall total benefit payment on behalf of member be less than the member's contributions to the fund

Spouse Predeceases Retiree

Members Hired After December 31, 1987

- ▼ Married member may elect a reduced pension
- ▼ Spouse will receive 50% of the reduced pension
- ▼ Member's pension not restored to full level if spouse predeceases retiree
- ▼ Total benefit payments on behalf of member will be no less than member's contribution to fund

Employee Contributions

Members hired prior to January 1, 1988

- ▼ 4% of compensation
- ▼ 5% of compensation

Interest Credit

*For non-union employees
and members of unions that negotiated for
the interest credit, who were hired on or before June 29, 2004*

- ▼ 5% compound interest per year

Section Five: Development of Contribution Requirements

Table 05-1: Normal Cost and Actuarial Accrued Liability

Normal Cost	
Retirement Benefits	\$2,307,062
Disability Benefits	457,391
Preretirement Death Benefits	34,268
Postretirement Death Benefits	0
Refunds to Withdrawals	623,789
Medicare Premium Benefits	75,078
Vested Benefits	<u>318,998</u>
Total	\$3,816,586

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	\$5,433,738	\$ 92,024,821	\$ 105,528,791	\$202,987,350
Disability Benefits	0	24,618,036	13,573,282	38,191,318
Survivor Benefits	0	2,132,206	0	2,132,206
Preretirement Death Benefits	0	0	1,598,379	1,598,379
Postretirement Death Benefits	0	0	0	0
Refunds to Withdrawals	0	0	1,742,058	1,742,058
Medicare Premium Benefits	0	0	8,796,536	8,796,536
Vested Benefits	<u>0</u>	<u>0</u>	<u>4,982,608</u>	<u>4,982,608</u>
Total	\$5,433,738	\$118,775,063	\$136,221,654	\$260,430,455

Actuarial Present Value of Future Normal Costs

Retirement Benefits	\$ 17,029,584
Disability Benefits	3,557,926
Preretirement Death Benefits	263,218
Postretirement Death Benefits	0
Refunds to Withdrawals	4,991,087
Medicare Premium Benefits	489,595
Vested Benefits	<u>2,566,633</u>
Total	\$ 28,898,043

(\$28,898,043)

Actuarial Accrued Liability

\$231,532,412

Unfunded Actuarial Accrued Liability

Actuarial Accrued Liability	\$231,532,412
Actuarial Value of Assets	<u>(109,791,039)</u>
Unfunded Actuarial Accrued Liability	\$121,741,373

Table 05-2: Actuarial (Gain) Loss Determination

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2003			\$120,602,091
	2003	2004	
Normal Cost/Admin Exp Assumed	\$ 5,249,508	\$ 5,429,685	10,679,193
Interest Charged at Valuation Rate			23,462,679
Contributions Made			
	2003	2004	
- Municipality	\$ 1,024,717	\$ 1,320,578	
- State Aid Allocated	3,300,465	6,815,483	
- Employees	<u>3,535,639</u>	<u>3,233,207</u>	\$ (19,230,089)
Interest Credited at Valuation Rate			(1,284,787)
Special Adjustment for Increase in Act 82 Interest Rate			<u>(700,052)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$ 133,529,035
Experience from Investment Return			
- Comparative Int. Rate Amortization Tab. (Gain) Loss		\$ (4,010,698)	
- Other Investment Return (Gain) Loss		<u>(11,420,905)</u>	\$ (15,431,603)
Experience (Gain) Loss from all Other Sources			(3,626,633)
Increase (Decrease) in Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$ 7,325,991	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>(55,417)</u>	<u>\$ 7,270,574</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$ 121,741,373</u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2003			\$ (19,058,236)
Actuarially Required Contributions and Bond Proceeds with Interest	\$32,339,804		
Actual Contributions with Interest		<u>(20,514,876)</u>	
Contribution (Gain) Loss			<u>11,824,928</u>
Loss (Gain) to be Amortized			\$ (7,233,308)

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2003	2004	
Act 82 Amortization Balance at January 1	\$ 21,037,267	\$ 29,943,071	
Act 82 Amortization Payment	<u>3,132,592</u>	<u>3,132,592</u>	
Comparative Interest Rate Balance at January 1	\$ 24,169,859	\$ 33,075,663	
Actual Investment Return on Balance	<u>5,773,212</u>	<u>3,626,416</u>	
Actual Act 82 Amort. Balance at December 31	\$ 29,943,071	\$ 36,702,079	\$36,702,079

Balance Calculated Using 10 Percent Investment Return

	2003	2004	
Comparative Int. Rate Balance at January 1	\$ 24,169,859	\$ 29,719,437	
Interest at 10 Percent	<u>2,416,986</u>	<u>2,971,944</u>	
Comparative Act 82 Amort. Bal. at Dec. 31	\$ 26,586,845	\$ 32,691,381	\$ 32,691,381

Comparative Interest Rate Amortization Tabulation (Gain) Loss \$ (4,010,698)

Table 05-3: Amortization of Unfunded Actuarial Accrued Liability

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Rem. Pymts	Annual Amount
Initial	\$53,226,758	1998	2037	\$63,057,758	33	\$3,132,592
Assumption Change	\$ (4,327,036)	1998	2017	\$(3,543,823)	13	\$(429,461)
Experience Loss	\$531,346	1999	2013	\$ 394,541	9	\$59,900
Experience Gain	\$ (8,518,572)	2000	2014	\$(6,771,362)	10	\$(959,571)
Experience Loss	\$ 15,454,485	2001	2015	\$13,027,265	11	\$1,739,546
Ben. Mod. - Active	\$ 15,075,742	2002	2021	\$14,092,706	17	\$1,492,502
Experience Loss	\$ 1,076,675	2002	2016	\$ 955,048	12	\$121,102
Investment Loss	\$ 15,617,085	2002	2032	\$14,843,153	28	\$1,320,365
Assumption Change	\$ (5,300,394)	2003	2022	\$(5,077,977)	18	(524,443)
Ben.Mod. – Active	\$ 6,262,573	2003	2022	\$5,999,780	18	619,645
Experience Loss	4,617,946	2003	2017	\$4,283,114	13	519,052
Investment Loss	\$20,777,261	2003	2032	\$20,443,904	28	1,818,577
Agg. Change through Last Valuation	N/A	N/A	2025	\$ 58,646,349	21	\$ 5,777,214
Assumption Change	\$ (55,417)	2005	2024	\$(55,417)	20	\$(5,483)
Ben. Mod. - Active	\$ 7,325,991	2005	2024	\$7,325,991	20	\$ 724,864
Ben. Mod. - Retired	N/A					
Experience Gain	\$ (7,233,308)	2005	2019	\$ (7,233,308)	15	\$ (813,016)
Agg. Change-2005	N/A	N/A	N/A	\$37,266	N/A	\$ (93,635)
Aggregate Changes	N/A	N/A	2026	\$58,683,615	22	\$ 5,683,579
Aggregate	N/A	N/A		\$121,741,373		\$ 8,816,171

Details of Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	\$ 53,226,758
40-Year Amortization Payment	\$ 4,437,482
Future Value at end of 40-Year period	\$ 1,525,108,142
Payment to provide same future value with 10% annual earnings	\$ 3,132,592

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)	\$ 3,816,566
Total Annual Payroll	\$67,376,388
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	5.665%
• Administrative Expense (as a % of payroll)	1.100%
• Gross Normal Cost	6.765%
Net Amortization Payment (Table 05-3)	\$ 8,816,171
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>\$ 109,791,039</u>	<u>\$ 91,603,430</u>
Actuarial Present Value of Vested Benefits		
Retired	\$ 118,775,063	
Deferred	5,433,738	
Employee Contributions	3,465,028	
Active	<u>79,391,252</u>	
Total	<u>\$ 207,065,081</u>	<u>\$ 187,079,553</u>
Unfunded Actuarial Present Value of Vested Benefits	<u>\$ 97,274,042</u>	<u>\$ 95,476,123</u>
Actuarial Present Value of Accrued Benefits		
Retired	\$ 118,775,063	
Deferred	5,433,738	
Employee Contributions	1,204,442	
Active	<u>86,700,487</u>	
Total	<u>\$ 212,113,730</u>	<u>\$ 194,034,846</u>
Unfunded Actuarial Present Value of Accrued Benefits	<u>\$ 102,322,691</u>	<u>\$ 102,431,416</u>

GAS #27 Information

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

	2003	2004
Annual required contribution (ARC)	\$ 4,325,182	\$ 8,136,061
Interest on NPO	0	0
Adjustment to the ARC	<u>0</u>	<u>0</u>
Annual Pension cost	4,325,182	8,136,061
Contributions made	<u>4,325,182</u>	<u>8,136,061</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)	\$ 10,143,306
Interest on NPO	0
Adjustment to the ARC	<u>0</u>
Annual Pension Cost	\$ 10,143,306

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
	33
Aggregate Remaining Amortization Period (Years)	
Actuarial Assumptions	
Investment Rate of Return	8.75%
Projected Salary Increases	4.00%
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	4.0 percent increase per annum
	Merit Increase: 0.5 percent increase per annum
	Inflation: 3.5 percent increase per annum

Social Security Benefits

Actives: Offset based on social security law in 2005, projected using an annual increase in the National Average Wage of 4 percent and an annual increase in the Social Security Consumer Price Index of 3 percent

Retirees: Offset based on:

- Actual benefit if 65 or older
- One third of original pension amount, if younger than 65

Medicare Premiums

For 2005, \$78.20 per month. The premium for years thereafter is assumed to increase at a rate of 6.5 percent per annum.

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 upon 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 *RP-2000 Mortality Tables Report*) 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 *RP-2000 Mortality Tables Report*)

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	8.20%
25	7.98%
30	7.67%
35	7.18%
40	6.40%
45	5.24%
50	3.49%
55	1.28%
60	0.12%

Disablement

Sample rates:

Age	Male	Female
30	0.06%	0.07%
40	0.14%	0.27%
50	0.42%	0.53%
60	1.25%	0.96%

Retirement Age

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

Age	Non-Emergency Medical Services	Emergency Medical Services EE
50	4	3
51	3	3
52	3	3
53	3	3
54	3	3
55	3.5	50
56	3.5	20
57	3.5	20
58	3.5	20
59	3.5	20
60	6.5	20
61	10	20
62	20	40
63	20	40
64	20	40
65	20	100
66	40	N/A
67	50	N/A
68	100	N/A

Exclusions

Non-participants

Percentage Married

Active: 80 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 the 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	7	3	6	1	0	0	0	0	0	0	17
25-29	9	9	11	14	18	0	0	0	0	0	61
30-34	5	10	18	21	43	6	0	0	0	0	103
35-39	6	11	17	25	43	26	21	1	0	0	150
40-44	6	7	14	36	48	44	65	38	1	0	259
45-49	3	10	19	33	52	42	73	91	81	5	409
50-54	2	9	14	21	49	56	65	55	129	31	431
55-59	1	1	5	15	22	26	36	38	50	45	238
60-64	0	4	4	11	7	8	24	6	15	31	110
65+	0	1	2	3	5	6	7	2	2	9	37
Total	39	65	110	180	287	214	291	231	278	121	1,815

Age Distribution of Deferred Vested Participants

All Persons Entitled To Receive 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	6	\$ 38,983.20	\$ 6,497.20
45-49	31	224,587.44	7,244.76
50-54	16	189,692.40	11,855.78
55-59	11	157,366.20	14,306.02
60-64	0	0.00	0.00
65-69	0	0.00	0.00
70-74	1	5,066.88	5,066.88
75-79	1	4,480.08	4,480.08
80-84	0	0.00	0.00
84+	0	0.00	0.00
Total	66	\$ 620,176.20	\$ 9,396.61

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	3	\$ 29,982.84	\$ 9,994.28
50-54	61	578,631.72	9,485.77
55-59	90	1,024,297.80	11,381.09
60-64	198	2,251,922.04	11,373.34
65-69	211	2,228,538.36	10,561.79
70-74	221	2,109,851.04	9,546.94
75-79	250	2,108,812.56	8,435.25
80-84	158	1,233,832.20	7,809.06
84+	123	844,823.64	6,868.48
Total	1,315	\$12,410,692.20	\$ 9,437.79

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	14,135.88	14,135.88
35-39	0	0.00	0.00
40-44	5	\$ 73,371.24	\$ 14,674.25
45-49	27	384,170.28	14,228.53
50-54	36	460,712.28	12,797.56
55-59	43	571,896.96	13,299.93
60-64	30	322,638.24	10,754.61
65-69	43	361,295.16	8,402.21
70-74	47	376,483.44	8,010.29
75-79	42	332,047.44	7,905.89
80-84	21	152,762.64	7,274.41
84+	16	89,010.60	5,563.16
Total	311	\$ 3,138,524.16	\$ 10,091.72

Age Distribution of Retired Participants

Survivors			
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	\$ 15,132.96	\$ 5,044.32
55-59	2	10,988.64	5,494.32
60-64	11	67,048.20	6,095.29
65-69	9	39,246.84	4,360.76
70-74	7	31,077.12	4,439.59
75-79	13	66,274.08	5,098.01
80-84	12	57,431.16	4,785.93
84+	5	23,523.00	4,704.60
Total	62	\$ 310,722.00	\$ 5,011.65

Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
Under 30	0	0.00	0.00
30-34	1	14,135.88	14,135.88
35-39	0	0.00	0.00
40-44	5	\$ 73,371.24	\$ 14,674.25
45-49	30	414,153.12	13,805.10
50-54	100	1,054,476.96	10,544.77
55-59	135	1,607,183.40	11,905.06
60-64	239	2,641,608.48	11,052.76
65-69	263	2,629,080.36	9,996.50
70-74	275	2,517,411.60	9,154.22
75-79	305	2,507,134.08	8,220.11
80-84	191	1,444,026.00	7,560.35
84+	144	957,357.24	6,648.31
Total	1,688	\$ 15,859,938.36	\$ 9,395.70

Demographic Data as of January 1, 2005

Changes in Plan Participation for Active Members

Active Members	Number
As of January 1, 2003	2,352
New Entrants	<u>141</u>
Total	2,493

Separation from Active Service

Transfer to another Plan	0
Separations w/Deferred Benefit	50
Separations w/o Deferred Benefit	342
Disability	36
Death	6
Retirement with a Service Retirement Benefit	<u>244</u>
Total Separations	678

Data Adjustments

Net Adjustments	<u>0</u>
Active Members as of January 1, 2005	1,815

Changes in Plan Participants for Inactive Members and Survivors

	Deferred Vested	Regular Retirements	Disability Retirement	Survivors	Total
As of January 1, 2003	25	1,197	314	79	1,615
New Benefit Recipients	50	244	36	4	334
Death	0	(144)	(45)	(7)	(196)
Commencement of Deferred Benefits	(9)	7	2	0	0
Net Data Adjustments	0	11	4	(14)	1
As of January 1, 2005	66	1,315	311	62	1,754

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

	January 1, 2004	January 1, 2005
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			\$16,187,027
Receipts	2003	2004	
Employer Contributions	\$3,501,986	\$3,797,847	
Employee Contributions	3,535,639	3,233,207	
State Aid	3,300,465	6,815,483	
Supplemental State Assistance	0	0	
Investment Income	385,839	399,894	
Net Change in Market Value	2,823,390	939,570	
Pass Through Contributions	<u>2,036,201</u>	<u>2,036,746</u>	
Total Receipts			32,806,267
 Disbursements			
Monthly Benefit Payments	\$14,411,462	15,267,695	
Refund of Employee Contributions	870,419	1,117,120	
Administrative Expenses	456,043	894,097	
Pass Through Payments	<u>2,036,201</u>	<u>2,036,746</u>	
Total Disbursements			(37,089,783)
 Assets Excluding Bond Proceeds at January 1, 2005			 \$11,903,511
 Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds			
Actuarial Accrued Liability (Table 05-1)			\$231,532,412
Assets Excluding Bond Proceeds at January 1, 2005			<u>(11,903,511)</u>
Adjusted Unfunded Actuarial Accrued Liability			\$219,628,901

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			\$197,739,388
	2003	2004	
Normal Cost Assumed	\$5,249,508	\$5,429,685	10,679,193
Interest Charged at Valuation Rate			37,552,288
Contributions Made			
- Municipality	\$3,501,986	\$3,797,847	
- State Aid Allocated	3,300,465	6,815,483	
- Employees	<u>3,535,639</u>	<u>3,233,207</u>	(24,184,627)
Interest Credited At Valuation Rate			(1,520,446)
Special Adjustment for Increase in Act 82 Interest Rate			<u>(2,038,354)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$218,227,442
Experience from Investment Return			
- Comparative Interest Rate Amortization Tabulation (Gain) Loss		\$(11,678,022)	
- Other Investment Return (Gain) Loss		<u>10,292,948</u>	(1,385,074)
Experience (Gain) Loss from all Other Sources			(4,484,041)
Increase (Decrease) in Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$7,325,991	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>(55,417)</u>	<u>\$ 7,270,574</u>
Actual Unfunded Actuarial Accrued Liability			<u><u>\$219,628,901</u></u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2003			\$ (5,869,115)
Actuarially Required Contributions		37,963,590	
Actual Contributions with Interest		<u>(25,705,073)</u>	
Contribution (Gain) Loss			<u>12,258,517</u>
Loss (Gain) to be Amortized			\$ 6,389,402

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2003	2004	
- Act 82 Amortization Balance at January 1	\$61,254,583	\$87,185,772	
- Act 82 Amortization Payment	<u>9,121,224</u>	<u>9,121,224</u>	
- Comparative Interest Rate Balance at January 1	70,375,807	96,306,996	
- Actual Investment Return on Balance	<u>16,809,965</u>	<u>10,559,099</u>	
- Actual Act 82 Amortization Balance at December 31	\$87,185,772	\$106,866,095	\$106,866,095

Balance Calculated Using 10 Percent Investment Return

- Comparative Interest Rate Balance at January 1	\$70,375,807	\$86,534,612	
- Interest at 10 Percent	<u>7,037,581</u>	<u>8,653,461</u>	
- Comparative Act 82 Amortization Balance at December 31	77,413,388	95,188,073	\$ 95,188,073

Comparative Interest Rate Amortization Tabulation (Gain) Loss \$(11,678,022)

**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	\$154,981,297	1998	2037	\$183,606,393	33	\$9,121,224
Assump. Chg	\$(4,327,036)	1998	2017	\$(3,543,823)	13	\$(429,461)
Experience Loss	\$270,401	1999	2013	\$ 200,780	9	\$30,483
Experience Gain	\$(3,675,180)	2000	2014	\$(2,921,377)	10	\$(413,988)
Experience Loss	\$ 2,412,237	2001	2015	\$ 2,033,380	11	\$ 271,520
Ben Mod – Active	\$15,075,742	2002	2021	\$14,092,705	17	\$ 1,492,502
Experience Loss	\$1,211,257	2002	2016	1,074,428	12	\$ 136,239
Investment Loss	\$3,463,728	2002	2032	\$3,292,077	28	\$292,845
Assum. Chg.	\$(5,300,394)	2003	2022	\$(5,077,977)	18	\$(524,443)
Ben. Mod. - Act.	\$6,262,573	2003	2022	\$5,999,780	18	\$ 619,645
Experience Loss	\$ 4,981,603	2003	2017	\$ 4,620,403	13	\$ 559,927
Investment Loss	\$ 2,634,424	2003	2032	\$ 2,592,156	28	\$ 230,584
Agg. Changes thru Last Val	N/A	N/A	2023	\$22,362,532	19	\$2,265,853
Assump. Change	\$ (55,417)	2005	2024	\$ (55,417)	20	\$ (5,483)
Ben. Mod. – Act.	\$ 7,325,991	2005	2024	\$ 7,325,991	20	\$ 724,864
Ben. Mod. - Ret.	N/A					
Experience Loss	\$ 6,389,402	2005	2019	\$ 6,389,402	15	\$ 718,162
Agg. Chgs – 2005	N/A	N/A	2022	\$ 13,659,976	18	\$ 1,437,542
Agg. Changes	N/A	N/A	2023	\$36,022,508	19	\$ 3,703,395
Aggregate	N/A	N/A		\$219,628,901		\$12,824,620

Details of the Calculation of Act 82 Payment

Act 82 Unfunded Actuarial Accrued Liability	\$ 154,981,297
40-Year Amortization Payment	\$ 12,920,696
Future Value at end of 40-Year period	\$4,440,684,474
Payment to provide the same future value with 10% annual earnings	\$ 9,121,224

Debt Service Schedule by Plan Year
Pension Bond Issue of December 15, 1996

	Date of Original Borrowing	Total Principal Borrowed	Total Principal to this Plan	Percentage to this Plan	Date of Refinancing
	12/15/96	\$37,710,000.00	\$37,710,000.00	100%	N/A
Plan Year	Required Principal Pymt.	Required Interest Pymt.	Annual Debt Service	Premium or Discount Amortized	Principal Balance at Valuation Date
1997		\$1,834,529.78	\$1,834,529.78		\$37,710,000.00
1998	\$525,000.00	2,564,976.25	3,089,976.25		37,710,000.00
1999	560,000.00	2,533,905.00	3,093,905.00		37,185,000.00
2000	590,000.00	2,499,965.00	3,089,965.00		36,625,000.00
2001	630,000.00	2,463,050.00	3,093,050.00		36,035,000.00
2002	670,000.00	2,423,065.00	3,093,065.00		35,405,000.00
2003	715,000.00	2,379,772.50	3,094,772.50		34,735,000.00
2004	760,000.00	2,332,930.00	3,092,930.00		34,020,000.00
2005	810,000.00	2,282,285.00	3,092,285.00		33,260,000.00
2006	865,000.00	2,227,631.25	3,092,631.25		32,450,000.00
2007	925,000.00	2,169,008.75	3,094,008.75		31,585,000.00
2008	985,000.00	2,106,210.00	3,091,210.00		30,660,000.00
2009	1,055,000.00	2,038,890.00	3,093,890.00		29,675,000.00
2010	1,125,000.00	1,966,950.00	3,091,950.00		28,620,000.00
2011	1,200,000.00	1,890,225.00	3,090,225.00		27,495,000.00
2012	1,285,000.00	1,808,220.00	3,093,220.00		26,295,000.00
2013	1,375,000.00	1,717,690.00	3,092,690.00		25,010,000.00
2014	1,475,000.00	1,617,940.00	3,092,940.00		23,635,000.00
2015	1,580,000.00	1,511,015.00	3,091,015.00		22,160,000.00
2016	1,695,000.00	1,396,390.00	3,091,390.00		20,580,000.00
2017	1,820,000.00	1,273,365.00	3,093,365.00		18,885,000.00
2018	1,950,000.00	1,141,415.00	3,091,415.00		17,065,000.00
2019	2,095,000.00	998,792.50	3,093,792.50		15,115,000.00
2020	2,250,000.00	844,545.00	3,094,545.00		13,020,000.00
2021	2,415,000.00	678,937.50	3,093,937.50		10,770,000.00
2022	2,590,000.00	501,260.00	3,091,260.00		8,355,000.00
2023	2,780,000.00	310,625.00	3,090,625.00		5,765,000.00
2024	2,985,000.00	105,967.50	3,090,967.50		2,985,000.00

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	\$57,569,624.42	22.3%	N/A
Plan Year	Required Principal Pymt.	Required Interest Pymt.	Annual Debt Service	Premium or Discount Amortized	Principal Balance at Valuation Date
1997					
1998		1,873,403.84	\$1,873,403.84		\$57,569,624.42
1999	\$ 225,000.00	3,740,451.43	3,965,451.43		57,569,624.42
2000	225,000.00	3,727,795.18	3,952,795.18		57,344,624.42
2001	225,000.00	3,715,071.43	3,940,071.43		57,119,624.42
2002	225,000.00	3,702,111.43	3,927,111.43		56,894,624.42
2003	225,000.00	3,689,050.18	3,914,050.18		56,669,624.42
2004	225,000.00	3,675,853.93	3,900,853.93		56,444,624.42
2005	563,624.99	3,652,273.94	4,215,898.93		56,219,624.42
2006	521,999.99	3,619,574.69	4,141,574.68		55,655,999.43
2007	553,499.99	3,586,902.44	4,140,402.43		55,133,999.44
2008	577,124.99	3,552,346.23	4,129,471.22		54,580,499.45
2009	623,249.99	3,512,858.03	4,136,108.02		54,003,374.46
2010	677,249.99	3,469,880.22	4,147,130.21		53,380,124.47
2011	726,749.99	3,426,005.22	4,152,755.21		52,702,874.48
2012	1,775,249.98	3,347,373.91	5,122,623.89		51,976,124.49
2013	2,471,624.98	3,212,979.43	5,684,604.41		50,200,874.51
2014	2,630,249.97	3,049,022.22	5,679,272.19		47,729,249.53
2015	2,860,874.97	2,870,560.66	5,731,435.63		45,098,999.56
2016	3,050,999.97	2,678,424.72	5,729,424.69		42,238,124.59
2017	4,105,124.96	2,445,850.66	6,550,975.62		39,187,124.62
2018	2,977,874.97	2,215,653.17	5,193,528.14		35,081,999.66
2019	4,506,749.95	1,970,149.48	6,476,899.43		32,104,124.69
2020	4,814,999.95	1,662,531.73	6,477,531.68		27,597,374.74
2021	5,143,499.95	1,333,901.23	6,477,401.18		22,782,374.79
2022	5,495,624.94	982,810.12	6,478,435.06		17,638,874.84
2023	5,871,374.95	607,699.11	6,479,074.06		12,143,249.90
2024	6,271,874.95	206,971.86	6,478,846.81		6,271,874.95

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.