

PC-203C
Commonwealth of Pennsylvania
Public Employee Retirement Commission
P. O. Box 1429
Harrisburg, PA 17105-1429

County : ALL

Class : 2

Mun : Pittsburgh

Code # : 02-261-2

Plan Type : N1

2013

**ACT 205 ACTUARIAL VALUATION REPORT:
NONUNIFORMED PENSION PLAN
WITH DEFINED BENEFITS**

FILING DEADLINE: March 31, 2014

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Special Instructions: Where a Deferred Retirement Option Plan (DROP) is operated for members of the pension plan, the participating pension plan members should be reported as retired members in Section IV and Schedule A.

Section I - Identification of Municipality

INSTRUCTIONS: Print or type requested information in the space provided.

Note: In Part A, home rule municipalities should check the box and enter the number of their previous municipal classification.

Item No.

A. Type of Municipality 2 (1)
(Check appropriate box below and enter corresponding number.)

- | | |
|--|--|
| <input checked="" type="checkbox"/> City (2) | <input type="checkbox"/> Township (1 st) (4) |
| <input type="checkbox"/> Borough (3) | <input type="checkbox"/> Township (2 nd) (5) |
| <input type="checkbox"/> Town (3) | <input type="checkbox"/> Authority (6) |
| | <input type="checkbox"/> COG/Regional Entity (7) |

B. Name of Municipality CITY OF PITTSBURGH (2)

C. Name of County ALLEGHENY (3)

Section II - Identification of Pension Plan and Specification of Valuation Date

INSTRUCTIONS: Print or type requested information in space provided.

A. Name of Pension Plan CITY OF PITTSBURGH MUNICIPAL PENSION FUND (4)

B. Date on which pension plan was established 05 / 28 / 1915 (5)
Mo. Da. Yr.

C. Valuation date for demographic, financial and actuarial data 01 / 01 / 2013 (6)
(Use 1/1/2013 unless otherwise specified in plan document prior to 12/31/1982.) Mo. Da. Yr.

Section III - General Information

INSTRUCTIONS: Respond to each question by entering "yes" or "no" in the space provided.

		Item No.
A. Is Social Security coverage provided for the active members of the pension plan identified in Section II?	YES	(8)
B. Do any active members of the pension plan identified in Section II participate in any other pension plan or plans that receive funding from the municipality?	NO	(9)
C. Do any of the active members of the pension plan identified in Section II work on average less than 35 hours per week?	NO	(10)
D. Does the pension plan identified in Section II include active members who are not employees of the municipality identified in Section I?	YES	(11)
E. Do retired members of the pension plan identified in Section II receive any benefit, such as insurance coverage, that is provided wholly or partially by the municipality and not funded through the pension plan identified in Section II?	NO	(12)

Section IV - Demographic Data as of JANUARY 1, 2013 (Valuation Date)INSTRUCTIONS: Enter valuation date specified in Section II, Part C, in the space provided above and on each page of Schedule A. Print or type information requested in Part A in the space provided. Enter zero, if applicable. Do not leave blanks or refer to the schedules or exhibits. Complete Schedule A. Then complete the certification in Part B below.**A. Summary of Demographic Data**

1. Number of active members on valuation date	1,784	(13)
2. Total annual payroll of active members as of above valuation date	\$ 81,916,275	(14)
3. Number of members terminated with vested or deferred benefit on valuation date	66	(15)
4. As of valuation date, number of persons receiving:		
a. Retirement benefits		
i. As normal retired members	1,225	(16i)
ii. As DROP participants	0	(16ii)
iii. Total	1,225	(16iii)
b. Disability benefits	267	(17)
c. Surviving spouse benefits	92	(18)
d. Surviving child benefits	0	(19)
e. Total (a+b+c+d)	1,584	(20)
5. As of valuation date, total annual benefits payable as:		
a. Retirement benefits		
i. To normal retired members	\$ 14,464,087	(21i)
ii. To DROP participants	\$ 0	(21ii)
iii. Total	\$ 14,464,087	(21iii)
b. Disability benefits	\$ 3,284,898	(22)
c. Surviving spouse benefits	\$ 528,895	(23)
d. Surviving child benefits	\$ 0	(24)
e. Total (a+b+c+d)	\$ 18,277,880	(25)

B. Certification of Demographic Data

I hereby certify that I have prepared and reviewed the demographic data entered in Part A of this section and in Schedule A; and I further certify that the information provided is to the best of my knowledge true and accurate.

(Signature)

Debbie Lestitan

(Name)

Acting Executive Director
Acting Finance Director

(Title)

(Date)

3/28/14

(412) 255-8955
(Telephone)

Section V - Financial Data as of JANUARY 1, 2013 (Valuation Date)

INSTRUCTIONS: Enter valuation date specified in Section II, Part C, in the space provided above and on each page of Schedule B. Print or type the data requested in Part A, rounded to the nearest dollar, in the space provided. Enter zero, if applicable. Do not leave blanks or refer to exhibits. Complete Schedule B. Then complete the certification in Part B below.

Note: The asset values provided in Part A of this section and in Schedule B must include all the assets of the pension plan regardless of custodial arrangements involving administrative agencies.

A. Summary of Financial Data

- | | Item No. |
|---|----------------------------|
| 1. MARKET VALUE OF ASSETS, <i>excluding the cash surrender values of individual insurance and annuity contracts</i> , on the above valuation date | \$ <u>179,409,183</u> (26) |
| 2. CASH SURRENDER VALUE of individual insurance and annuity contracts on the above valuation date or nearest anniversary date | \$ <u>0</u> (27) |
| 3. TOTAL FUND ASSETS (1 + 2) on the above valuation date | \$ <u>179,409,183</u> (28) |
| 4. TOTAL EARNINGS, including investment income, realized capital gains/losses, unrealized capital gains/losses, and dividends on insurance/annuity contracts for the year ended on the above valuation date | \$ <u>18,993,309</u> (29) |
| 5. MEMBER CONTRIBUTIONS to plan for the year ended on the above valuation date (Include employee contributions treated as employer contributions pursuant to Section 414(h) of the Internal Revenue Code.) | \$ <u>3,236,377</u> (30) |
| 6. MUNICIPAL CONTRIBUTIONS to plan for the year ended on valuation date (6a + 6b) | \$ <u>10,842,101</u> (31) |
| a. State Aid Portion \$ <u>4,320,825</u> b. Local Portion \$ <u>6,521,276</u> | |
| 7. ACTUAL MUNICIPAL DEPOSIT for the year ended on the valuation date (6 + 7a - 7b) | \$ <u>10,842,101</u> (32) |
| a. Contributions Receivable at beginning of year \$ <u>0</u> b. Contributions Receivable at End of year \$ <u>0</u> ¹ | |
| 8. TOTAL MONTHLY BENEFIT PAYMENTS for the year ended on the above valuation date | \$ <u>19,256,233</u> (33) |
| 9. ANNUAL INSURANCE OR ANNUITY PREMIUM PAYMENTS, <i>excluding single premium annuity purchases</i> , for the year ended on the above valuation date | \$ <u>0</u> (34) |
| 10. ADMINISTRATIVE EXPENSES paid from the assets of the pension plan for the year ended on the above valuation date | \$ <u>674,040</u> (35) |
| 11. MINIMUM MUNICIPAL OBLIGATION to the pension plan for the year ended on the valuation date (Enter amount reported in Item 12 or Item 14 on page 12, whichever is applicable.) | \$ <u>7,851,147</u> (36) |

¹ A funding deficiency occurs when the actual municipal deposit is less than the Minimum Municipal Obligation. If a funding deficiency has been partially or fully rectified, complete Schedule B, Section V and Section VI, and include the specified documentation.

B. Certification of Financial Data

I hereby certify that I have prepared and reviewed the financial data entered in Part A of this section and in Schedule B; and I further certify that the information provided is to the best of my knowledge true and accurate.

Debbie Lestitan
(Signature)

3/28/14
(Date)

Debbie Lestitan
(Name)

Acting Executive Director
(Title) Acting Finance Director

412.255.8955
(Telephone)

Section VI - Actuarial Data as of JANUARY 1, 2013 (Valuation Date)

INSTRUCTIONS: Enter valuation date specified in Section II, Part C, in the space provided above and on each page of Schedule C. Complete Part A and Part B below in accordance with the instructions provided. Complete Schedule C. Then complete the certification in Part C below.

Note: The asset values provided in Part A of this section must include all the assets of the pension plan regardless of custodial arrangements involving administrative agencies.

A. Summary of Actuarial Data

INSTRUCTIONS: Print or type the data requested, rounded to the nearest dollar, in the space provided. Enter zero or negative values, if applicable. Do not leave blanks or refer to exhibits.

Item No.

1. ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS as of valuation date \$ 365,639,394 (40)
2. ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COST as of valuation date \$ 40,942,325 (41)
3. ACTUARIAL ACCRUED LIABILITY as of valuation date \$ 324,697,069 (42)
4. ACTUARIAL VALUE OF ASSETS, including aggregate insurance/annuity cash surrender value, as of valuation date \$ 202,529,949 (43)
5. UNFUNDED ACTUARIAL ACCRUED LIABILITY as of valuation date (+ or -) \$ 122,167,120 (44)
6. NORMAL COST (employer & employee), *excluding administrative expenses*, payable as of valuation date for the plan year beginning on valuation date:
 - a. As a dollar amount \$ 5,731,453 (45)
 - b. As a percentage of total annual payroll 6.997 % (46)
7. AVERAGE ADMINISTRATIVE EXPENSES payable from the assets of the pension plan in the prior plan year and the plan year beginning on valuation date ¹ \$ 655,330 (47)
8. ANNUAL COVERED PAYROLL of active members as of valuation date \$ 81,916,275 (48)
9. AMORTIZATION CONTRIBUTIONS
 - a. For amortization of initial unfunded actuarial accrued liability established 1/1/85. ²
 - 1) Amortization period remaining (years) 25 (49)
 - 2) Amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date \$ 3,132,592 (50)
 - 3) Amortization contribution calculated as a level percentage of payroll for the plan year beginning on valuation date ³ \$ N/A (51)
 - b. For amortization of all increases or decreases in unfunded actuarial accrued liability occurring after 1/1/85 or the initial UAL's establishment. ²
 - 1) Aggregated amortization period (years) 12 (52)
 - 2) Aggregated amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date \$ 5,434,726 (53)
 - c. Modified Total Amortization Requirement ⁴ \$ N/A (54)
 - d. Total Amortization Requirement (Item 50 + Item 53 or Item 51 + Item 53 or Item 54, whichever is applicable) \$ 8,567,318 (55)
10. ACTUAL OR ESTIMATED MEMBER CONTRIBUTIONS to the pension plan for the year beginning on the valuation date \$ 3,236,377 (56)

Section VI - Actuarial Data (Cont'd)

INSTRUCTIONS: If insurance/annuity contracts are maintained pre-retirement to fund a portion of the benefits provided by the pension plan at retirement, enter the information requested in Items 57-67 below. Otherwise, do not complete Items 57-67.

Note: For Item 67, include "side fund" amortization contribution for the initial UAL established 1/1/85 and the aggregated "side fund" amortization contribution for increases and decreases in the UAL occurring after 1/1/85. Attach a facsimile of Schedule C, Section II, to support the entry for Item 67.

A. Summary of Actuarial Data (Cont'd)

	Item No.
11. ACTUARIAL PRESENT VALUE OF INSURANCE/ANNUITY CONTRACT CASH VALUES AT RETIREMENT as of valuation date	\$ _____ (57)
12. ADJUSTED ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS as of valuation date (Item 40 - Item 57)	\$ _____ (58)
13. ADJUSTED ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COST as of valuation date	\$ _____ (59)
14. ADJUSTED ACTUARIAL ACCRUED LIABILITY as of valuation date	\$ _____ (60)
15. ACTUARIAL VALUE OF ASSETS, excluding aggregate insurance/annuity cash surrender value, as of valuation date	\$ _____ (61)
16. ADJUSTED UNFUNDED ACTUARIAL ACCRUED LIABILITY as of valuation date (+ or -)	\$ _____ (62)
17. ADJUSTED NORMAL COST, excluding administrative expenses, payable as of valuation date for the plan year beginning on valuation date	\$ _____ (63)
18. ANNUAL INSURANCE/ANNUITY PREMIUM PAYMENTS for the plan year beginning on valuation date	\$ _____ (64)
19. GROSS ADJUSTED NORMAL COST for the plan year beginning on valuation date (Item 63 + Item 64):	
a. As a dollar amount	\$ _____ (65)
b. As a percentage of payroll	_____ % (66)
20. ADJUSTED AMORTIZATION CONTRIBUTION calculated as a level dollar amount for the plan year beginning on valuation date	\$ _____ (67)

¹ The average of the prior year's administrative expenses and the estimated administrative expenses for the current year. If the amount entered exceeds the prior year's expenses (Section V, Part A, Item 35) by more than 10%, attach an exhibit detailing the administrative expenses for the year beginning on the valuation date.

² Initial unfunded actuarial accrued liability may be established later than 1/1/1985 if coincidental with the establishment of the pension plan or with the initiation of a new amortization schedule authorized by Act 82 of 1998.

³ Enter N/A unless municipality has been certified to use level percentage of payroll amortization pursuant to Section 607 of Act 205.

⁴ If the municipality has formally elected to apply the limit on the amortization contribution under section 202(b)(4), enter the modified total amortization requirement calculated as the amount required to amortize the unfunded actuarial accrued liability over ten years. Otherwise, enter N/A.

Section VI - Actuarial Data (Cont'd)**B. Additional Information**

INSTRUCTIONS: Print or type the information requested in the space provided. Enter "N/A" if applicable. Do not leave blanks or refer to exhibits.

1. MAJOR ECONOMIC ACTUARIAL ASSUMPTIONS

Item No.

a. Interest or investment earnings rate 7.50 % (68)b. Salary projection 4.00 % (69)2. ADMINISTRATIVE ARRANGEMENT (Enter corresponding number. ⇨) 1 (70)☐ 1 - Self administered fund☐ 4 - Insured deposit administration contract☐ 2 - Bank or other trust fund☐ 5 - Immediate participation guarantee contract☐ 3 - Split-funded plan - Insurance plus side fund☐ 6 - Pennsylvania Municipal Retirement System☐ 7 - Other (Describe) _____3. COST FOR ACTUARIAL SERVICES to be billed or charged for completing this reporting form and for preparing the associated actuarial valuation report \$ 12,217 (71)**C. Certification of Actuarial Data**

I hereby certify that I have prepared and reviewed the actuarial data and information entered in Part A and Part B of this section and in Schedule C and that the data and information provided is to the best of my knowledge true and accurate.

I further certify that I have five years of actuarial experience with public pension plans and that I am (Check appropriate box.)

DHS ☒ a member of the American Academy of Actuaries enrolled in 2008.

DHS ☒ an enrolled actuary pursuant to the Employee Retirement Income Security Act of 1974, No. 11-6163.

Note to Actuary: Complete Schedule D, Actuary's Review of Required Exhibits and Data, found on Page 19.

David Stimpson

(Signature)

3.28.2014

(Date)

DAVID H. STIMPSON, E.A., F.C.A., M.A.A.A.

(Name)

(412) 394-9660

(Telephone)

(72)

MOCKENHAUPT BENEFITS GROUP

(Name of Firm)

(73)

David.Stimpson@MBGbenefits.com

(E-mail Address)

(74)

Section VII - Certification of Report by the Chief Administrative Officer of the Municipality

INSTRUCTIONS: Ensure that Schedule A, Schedule B and Schedule C are completed and attached to the reporting form. Review the information entered in each section of the reporting form and the information provided in the schedules. Then complete the certification below and return the original reporting form to the Commission. **Retain a copy of the completed reporting form for audit compliance purposes.**

Note: To be completed by the person officially designated as the Chief Administrative Officer of the municipality under Act 205 of 1984.

I hereby certify that to the best of my knowledge the information provided in this report is complete, true and accurate.


(Signature of Chief Administrative Officer)

3/28/14
(Date)

Debbie Lestitan
(Name of Chief Administrative Officer) (Print or type)

(412) 255-8955
(Telephone)

debbie.lestitan@pittsburghpa.gov ✓
(E-Mail Address) (Optional)

Inquiries regarding completion or submission of the reporting form may be directed to:

**Commonwealth of Pennsylvania
Public Employee Retirement Commission**

Mailing Address

P. O. Box 1429
Harrisburg, PA 17105-1429

Phone: (717) 783-6100
Fax: (717) 787-9531
E-mail: perc@state.pa.us

SCHEDULE A - Demographic Data as of JANUARY 1, **2013**
 Page 1 of 2 (Valuation Date)

CITY OF PITTSBURGH
 (Municipality)

ALLEGHENY
 (County)

INSTRUCTIONS: Print or type the requested information in the space provided. For totals, enter zero if applicable. Refer to attachments or exhibits only to explain or support data entered on the schedule. If you need additional space, make a photocopy of this page and insert behind this page.

☐ Check here if there are no retired members.

☐ Check here if there are no members terminated with vesting.

**PART I - DEMOGRAPHIC DATA FOR
INDIVIDUAL RETIRED MEMBERS**

Member	Current Age	Monthly Pension Payable	Retire-ment Age	Type *	Years of Service	Gender (M/F)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

**PART II - DEMOGRAPHIC DATA FOR
INDIVIDUAL MEMBERS TERMINATED WITH VESTING**

Member	Current Age	Monthly Pension Payable	Retire-ment Age	Years of Service	Gender (M/F)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

* Type: Blank = Member, S = Spouse/Child, D = Disability, DR = DROP

SCHEDULE A - Demographic Data as of
Page 2 of 2

JANUARY 1, 2013
(Valuation Date)

CITY OF PITTSBURGH
(Municipality)

ALLEGHENY
(County)

Part III - Active Member Data ¹ - ☐ Check here if there are no active members.

Member	Age	Years of Service	Total Annual Payroll	Gender (M/F)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Member	Age	Years of Service	Total Annual Payroll	Gender (M/F)
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

¹ Plans with active members of 50 or more must e-mail an Excel spreadsheet containing the specified active member data to the Commission at perc@state.pa.us. When submitting your data, specify the municipality, county, and plan type (police, fire, or nonuniformed) in the first line of the spreadsheet.

SCHEDULE B - Financial Data as of JANUARY 1, **2013** CITY OF PITTSBURGH ALLEGHENY
 Page 1 of 5 (Valuation Date) (Municipality) (County)

INSTRUCTIONS: Print or type the requested information in the space provided. Round to the nearest dollar. Enter zero, if applicable. Refer to attachments or exhibits only to explain or support data entered on the schedule.

Section I - Statement of Net Assets Available for Benefits

	As of the Above Valuation Date	As of the Previous Year (2012)	Item No.
A. Assets:			
1. Cash	\$	\$	(1)
2. Accrued Interest and Dividends Receivable	\$	\$	(2)
3. Receivables (Specify)			
Employee Contributions	\$	\$	(3)
Employer Contributions	\$	\$	(4)
State Aid	\$	\$	(5)
Other	\$	\$	(6)
.....	\$	\$	(7)
4. Investments at Market Value (Specify)			
Money Markets and Other Cash Investments	\$	\$	(8)
Mutual Funds	\$	\$	(9)
Stocks and Other Equities	\$	\$	(10)
Bonds and Other Fixed Income	\$	\$	(11)
5. Other Assets (Specify)			
Insurance Contract/Group Annuity	\$	\$	(12)
Other <u>PARTICIPATION IN AGGREGATE TRUST</u>	\$ 179,409,183	\$ 166,785,805	(13)
.....	\$	\$	(14)
6. Insurance/Annuity Cash Surrender Value (Individual Policies) ..	\$	\$	(15)
Total Fund Assets	\$ 179,409,183	\$ 166,785,805	(16)
B. Current Liabilities:			
1. Accounts Payable and Accrued Administrative Expenses	\$	\$	(17)
2. Other Current Liabilities			
Benefits Payable	\$	\$	(18)
Other	\$	\$	(19)
.....	\$	\$	(20)
Total Current Liabilities	\$	\$	(21)
C. Net Assets Available for Benefits (Market Value) as of valuation date ..	\$ 179,409,183	\$ 166,785,805	(22)

SCHEDULE B - Financial Data as of JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY
Page 2 of 5 (Valuation Date) (Municipality) (County)

Section II - Statement of Revenues, Expenses and Change in Fund Assets.

	As of the Above Valuation Date	As of the Previous Year (2012)	Item No.
A. Net Assets at Beginning of Year (Market Value)	\$ 166,785,805	\$ 166,610,549	(1)
B. Gross Revenues (unreduced by any fees, costs or expenses):			
Member Contributions	\$ 3,236,377	\$ 3,196,201	(2)
Total Municipal Contributions			
a. State Aid Portion	\$ 4,320,825	\$ 6,398,832	(3)
b. Local Portion	\$ 6,521,276	\$ 5,932,666	(4)
Interest Earnings/Dividend Income	\$ 1,414,855	\$ 1,793,953	(5)
Realized/Unrealized Capital Gains/Losses	\$ 17,558,579	\$ 2,811,792	(6)
Other Revenues or Credits (Specify)			
PASS THROUGH CONTRIBUTIONS ..	\$ 1,798,849	\$ 1,772,618	(7)
MISC. INCOME ..	\$ 19,875	\$ 72,395	(8)
.....	\$	\$	(9)
Total Revenues	\$ 34,870,636	\$ 21,978,457	(10)
C. Expenses			
Total Benefit Payments (Lump-Sum)	\$ 0	\$ 0	(11)
Total Benefit Payments (Monthly)	\$ 19,256,233	\$ 18,789,944	(12)
Annuity Purchases (Lump-Sum)	\$ 0	\$ 0	(13)
Insurance Premiums	\$ 0	\$ 0	(14)
Refund of Member Contributions	\$ 518,136	\$ 571,172	(15)
Lump-Sum Drop Account Payments	\$ 0	\$ 0	(16)
Actuarial Costs	\$ 26,321	\$ 35,604	(17)
Investment Costs	\$ 209,684	\$ 104,915	(18)
All Other Expenses or Debits (Specify)			
PASS THROUGH PAYMENTS ..	\$ 1,798,849	\$ 1,772,618	(19)
OTHER ADMIN. EXPENSES ..	\$ 438,035	\$ 528,947	(20)
Total Expenses	\$ 22,247,258	\$ 21,803,200	(21)
D. Net Assets at End of Year (Market Value)	\$ 179,409,183	\$ 166,785,805	(22)

SCHEDULE B - Financial Data as of JANUARY 1, 2013 **CITY OF PITTSBURGH** **ALLEGHENY**
 Page 3 of 5 (Valuation Date) (Municipality) (County)

Section III - Presentation of the Determination of the Minimum Municipal Obligation (MMO) for the Year Ended on Valuation Date.

INSTRUCTIONS: Enter data reflecting the minimum municipal obligation developed in the fall of 2011 for the plan year beginning in 2012.
 [Section 302(C) of Act 205 of 1984.]

		Item No.
A. IDENTIFICATION OF THE ACTUARIAL VALUATION REPORT (AVR)		
used to determine funding requirement. (Enter valuation date - 2011 or earlier year.)	01 / 01 / 2011 Mo. Da. Yr.	(1)
B. DEVELOPMENT OF MINIMUM MUNICIPAL OBLIGATION under Section 302(c) of Act 205 of 1984. (If the asset value exceeded the present value of future benefits in the actuarial valuation report identified in Part A, check the box, skip Item 2 through Item 10, and complete Item 11 and Item 12, if applicable.) <input type="checkbox"/>		
1. TOTAL ANNUAL PAYROLL projected for year ended on valuation date	\$ 71,052,495	(2)
2. TOTAL NORMAL COST, expressed as a percentage of total annual payroll, derived from actuarial valuation report identified in item 1	5.943%	(3)
3. TOTAL PROJECTED NORMAL COST for year ended on valuation date (Item 2 x Item 3)	\$ 4,222,650	(4)
4. TOTAL AMORTIZATION REQUIREMENT for year ended on valuation date ¹	\$ 5,878,010	(5)
5. TOTAL ADMINISTRATIVE EXPENSES projected for year ended on valuation date	\$ 781,577	(6)
6. TOTAL FINANCIAL REQUIREMENTS (Item 4 + Item 5 + Item 6)	\$ 10,882,237	(7)
7. MEMBER CONTRIBUTIONS projected for year ended on valuation date	\$ 3,031,090	(8)
8. FUNDING ADJUSTMENT determined pursuant to Section 302(c)(2) of Act 205 of 1984 for year ended on valuation date ²	\$ 0	(9)
9. MINIMUM MUNICIPAL OBLIGATION (MMO) for year ended on valuation date (Item 7 - Item 8 - Item 9)	\$ 7,851,147	(10)
10. DELINQUENT MMO PLUS INTEREST from plan year beginning in 2011	\$ 0	(11)
11. TOTAL MMO for year ended on valuation date (Item 10 + Item 11)	\$ 7,851,147	(12)
C. AMORTIZATION CONTRIBUTION REDUCTION (Complete if Amortization Contribution Reduction was elected pursuant to Section 607(H.1) of Act 205.)		
1. REDUCTION OF AMORTIZATION CONTRIBUTION (Maximum is 25% of Item 5.)	\$	(13)
2. RE-CALCULATED MMO for year ended on valuation date (Item 12 - Item 13)	\$	(14)

¹ If the amount entered differs from the amount reported in the actuarial valuation report identified in Item 1 above due to the scheduled termination of one or more amortization bases established pursuant to Chapter 2 of Act 205, attach an exhibit reconciling the difference.

² Funding adjustment is applicable where assets exceed actuarial accrued liability and is equal to 10% of the amount of the excess.

SCHEDULE B - Financial Data as of JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY
 Page 4 of 5 (Valuation Date) (Municipality) (County)

Section IV - Presentation of the Determination of the Minimum Municipal Obligation (MMO) for the Plan Year Beginning in 2011.

INSTRUCTIONS: Enter data reflecting the minimum municipal obligation developed in the fall of 2010 for the plan year beginning in 2011.
 [Section 302(C) of Act 205 of 1984.]

		Item No.
A. IDENTIFICATION OF THE ACTUARIAL VALUATION REPORT (AVR)		
used to determine funding requirement. (Enter valuation date - 2009 or earlier year.)	01 / 01 / 2009 Mo. Da. Yr.	(1)
B. DEVELOPMENT OF MINIMUM MUNICIPAL OBLIGATION under Section 302(c) of Act 205 of 1984. (If the asset value exceeded the present value of future benefits in the actuarial valuation report identified in Part A, check the box, skip Item 2 through Item 10, and complete Item 11 and Item 12, if applicable.) <input type="checkbox"/>		
1. TOTAL ANNUAL PAYROLL projected for year ended on valuation date	\$ 73,885,665	(2)
2. TOTAL NORMAL COST, expressed as a percentage of total annual payroll, derived from actuarial valuation report identified in Item 1	6.199 %	(3)
3. TOTAL PROJECTED NORMAL COST for year ended on valuation date (Item 2 x Item 3) ...	\$ 4,580,172	(4)
4. TOTAL AMORTIZATION REQUIREMENT for year ended on valuation date ¹	\$ 11,168,516	(5)
5. TOTAL ADMINISTRATIVE EXPENSES projected for year ended on valuation date	\$ 1,256,056	(6)
6. TOTAL FINANCIAL REQUIREMENTS (Item 4 + Item 5 + Item 6)	\$ 17,004,744	(7)
7. MEMBER CONTRIBUTIONS projected for year ended on valuation date	\$ 3,155,538	(8)
8. FUNDING ADJUSTMENT determined pursuant to Section 302(c)(2) of Act 205 of 1984 for year ended on valuation date ²	\$ 0	(9)
9. MINIMUM MUNICIPAL OBLIGATION (MMO) for year ended on valuation date (Item 7 - Item 8 - Item 9).	\$ 13,849,206	(10)
10. DELINQUENT MMO PLUS INTEREST from plan year beginning in 2010	\$ 0	(11)
11. TOTAL MMO for year ended on valuation date (Item 10 + Item 11)	\$ 13,849,206	(12)
C. AMORTIZATION CONTRIBUTION REDUCTION (Complete if Amortization Contribution Reduction was elected pursuant to Section 607(H.1) of Act 205.)		
1. REDUCTION OF AMORTIZATION CONTRIBUTION (Maximum is 25% of Item 5.)	\$ 2,792,129	(13)
2. RE-CALCULATED MMO for year ended on valuation date (Item 12 - Item 13)	\$ 11,057,077	(14)

¹ If the amount entered differs from the amount reported in the actuarial valuation report identified in Item 1 above due to the scheduled termination of one or more amortization bases established pursuant to Chapter 2 of Act 205, attach an exhibit reconciling the difference.

² Funding adjustment is applicable where assets exceed actuarial accrued liability and is equal to 10% of the amount of the excess.

Section V - Documentation of Compliance with Act 205 Funding Standard Requirements

- INSTRUCTIONS: 1. Complete the information below if a funding deficiency has been partially or fully rectified and provide the following:
- Documentation showing the development of the pension plan's municipal funding requirements (Minimum Municipal Obligation (MMO)) pursuant to Section 302 and, if applicable, Section 607(H.1) of Act 205 for the years reported.
 - Signature in Section VI below by the approved actuary and the municipality's chief administrative officer certifying, subject to the penalties of 18 Pa. C. S. §4904 relating to unsworn falsification to authorities, that the accompanying documentation is accurate and that the funding requirements prescribed by Section 302, and if applicable Section 607(H.1), of Act 205 are satisfied.
2. Documentation showing the actual municipal contributions to the pension plan for the years reported, including copies of specific supporting documents such as the development of the MMO, bank statements, evidence of deposit, and cancelled checks should be maintained by the municipality for audit and other purposes.

	2012	2013	Item No.
A) Prior Year's Deficiency ¹ for each year indicated	\$	\$	(1)
B) Interest Rate	%	%	(2)
C) Monthly Interest Rate (B ÷ 12)	%	%	(3)
D) Amount Due on Payment Date (A x (1 + C) ^{Time in months})	\$	\$	(4)
E) Minimum Municipal Obligation	\$	\$	(5)
F) Total Minimum Municipal Obligation (D + E)	\$	\$	(6)
G) Amount Deposited ²	\$	\$	(7)
H) Funding Deficiency	\$	\$	(8)

¹ Development of the MMOs must include the reported funding deficiency with interest.

² Must equal amount deposited as shown on supporting documentation maintained by the municipality.

Section VI - Certification of Compliance with Act 205 Funding Standard Requirements

(Signature of Actuary) (Date)

(Signature of Chief Administrative Officer) (Date)

(Name of Actuary)

(Name of Chief Administrative Officer)

(Actuarial Firm)

SCHEDULE C - Actuarial Data as of JANUARY 1, **2013** CITY OF PITTSBURGH ALLEGHENY
Page 1 of 4 (Valuation Date) (Municipality) (County)

INSTRUCTIONS: Complete all items using the entry age normal actuarial cost method. Enter zero, if applicable, and round to the nearest dollar. Refer to attachments or exhibits **only** to explain or support data entered on the schedule.

Section I - Presentation of Actuarial Present Value of Future Benefits as of the Valuation Date

Item No.

A. Actuarial Present Values for Active Members

(Enter values for ancillary benefits only if valued using EAN.)

1. Retirement Benefits	\$ 166,093,475	(1)
2. Disability Benefits	\$ 16,123,779	(2)
3. Survivor Benefits	\$ 0	(3)
4. Liability for the Refund of Member Contributions	\$ 2,176,838	(4)
5. Vested Withdrawal Benefits	\$ 5,445,272	(5)
6. Other (Specify) <u>PRE-RET. DEATH AND MEDICARE PREMIUMS</u>	\$ 11,810,558	(6)
Subtotal for Active Members	\$ 201,649,922	(7)

B. Actuarial Present Values for Non-Active Members and Benefit Recipients

1. Deferred Vested Benefits	\$ 8,550,594	(8)
2. Retirement Benefits	\$ 123,592,181	(9)
3. Disability Benefits	\$ 27,535,328	(10)
4. Survivor Benefits	\$ 4,311,369	(11)
5. Total Monies Accumulated in DROP Participant Accounts	\$ 0	(12)
6. Other (Specify)	\$ 0	(13)
Subtotal for Non-Active Members and Benefit Recipients	\$ 163,989,472	(14)

C. Total Actuarial Present Value of Future Benefits (Without adjustments)	\$ 365,639,394	(15)
D. Total Adjustments for Ancillary Benefits Valued through Approximation Techniques ¹	\$ 0	(16)
E. Total Actuarial Present Value of Future Benefits (Item 15 + Item 16)	\$ 365,639,394	(17)

¹ A signed statement and accompanying documentation, as specified in Section 203.5 of the Act 205 regulations, must be attached if adjustments are made.

SCHEDULE C - Actuarial Data as of JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY
 Page 2 of 4 (Valuation Date) (Municipality) (County)

Section II - Unfunded Actuarial Accrued Liability and Amortization Contributions as of Valuation Date

Part A - Initial Unfunded Actuarial Accrued Liability.

Amount of Initial Liability	Date Established	Target Date	Original Amortization Period	Remaining Balance	Level Dollar Amortization Contribution ¹
\$ 53,226,758	1998	2037	40	\$ 77,830,220	\$ 3,132,592 (1)

Part B - Changes in Unfunded Actuarial Accrued Liability since the last actuarial valuation report prepared and submitted under Act 205.²

Source	Amount of Liability	Date Established	Target Date	Amortization Period	Amortization Contribution
Benefit Plan Modification	N/A	N/A	N/A	N/A	N/A
Actuarial Assumption Modification	31,572,286	2013	2027	15	3,327,197
Actuarial Losses (+) or Gains (-)	-6,447,817 ³	2013	2032	20	-588,354
Post-Retirement Adjustments	N/A	N/A	N/A	N/A	N/A
Total	\$ 25,124,469	XXXXX	XXXXX	XXXXX	\$ 2,738,843 (2)

Part C - Aggregation of Changes in Unfunded Actuarial Accrued Liability since initially established in 1985.

Description	Remaining Balance of Aggregated Liability	Date of Aggregation	Aggregated Target Date	Aggregated Amortization Period	Aggregated Amortization Contribution
Aggregation of all prior changes (exclude changes in Section B)	\$ 19,212,431	11	2022	10	\$ 2,695,883 (3)
Aggregation of all changes (include changes in Section B)	\$ 44,336,900	Current Valuation Date	2024	12	\$ 5,434,726 (1)

¹ Level percentage of future payroll amortization contribution should be entered where the municipality has previously implemented that amortization approach pursuant to Section 607 of Act 205.

² Attach exhibit specifying the individual factors contributing to each change in unfunded actuarial accrued liability summarized in Part B.

³ Attach exhibit of the actuarial valuation report showing development of expected unfunded actuarial accrued liability.

SCHEDULE C - Actuarial Data as of JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY
Page 3 of 4 (Valuation Date) (Municipality) (County)

Section III - Presentation of Actuarial Assumptions and Methods

A. Actuarial Assumptions

SEE ATTACHED

1. Interest Rate -

2. Salary Projection -

3. Disability Rates -

4. Termination Rates -

5. Mortality -

6. Retirement Age -

7. Asset Smoothing -

8. Other (Specify) -

9. Other (Specify) -

B. Actuarial Cost Method (Specify)

SCHEDULE C - Actuarial Data as of JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY
 Page 4 of 4 (Valuation Date) (Municipality) (County)

Section IV - Presentation of Benefit Plan Provisions

A. Eligibility Requirements

SEE ATTACHED

Normal Retirement _____

Early Retirement _____

Vesting _____

B. Retirement Benefit (Describe fully including Social Security offsets, service increments, etc. and include period over which final average salary is determined if benefit salary related.)

C. Survivor Benefit (Describe fully including indication of whether benefit is automatic or provided at the election of individual members.)

D. Disability Benefit (Describe fully including offset provisions, service requirements, extent of disability, etc.)

Service Related

Non-Service Related

E. Post Retirement Adjustments (Describe fully including frequency of adjustment, basis for adjustment, minimum/maximum adjustments, etc.)

F. DROP Benefit (Specify and describe.)

G. Other Benefit (Specify and describe.)

H. Member Contributions

Amount or Rate _____

Interest Rate Credited to Member Contributions _____ %

SCHEDULE D - Exhibits for
Page 1 of 1

CITY OF PITTSBURGH
(Municipality)

ALLEGHENY
(County)

INSTRUCTIONS: Review all items below. Exhibits are to be placed immediately after this review and do not need to be on their own separate pages.

Section I - Actuary's Review of Required Exhibits and Data

- A. The exhibit of **administrative expenses** specified in footnote 1 on page 5 is attached and labeled as Exhibit I, if applicable.

Actuary's Initials

- B. The **active member data** specified in footnote 1 on page 9 has been submitted, if required.

DHS (W' RETS)
Actuary's Initials

- C. The exhibit of the minimum municipal obligation **amortization requirements** specified in footnote 1 on page 12 and in footnote 1 on page 13 is attached and labeled as Exhibit II, if applicable.

Actuary's Initials

- D. The exhibit relating to the **changes in the unfunded actuarial accrued liability** specified in footnote 2 on page 16 is attached and labeled as Exhibit III, if applicable.

DHS (Ave)
Actuary's Initials

- E. The exhibit showing the development of the **expected unfunded actuarial accrued liability** specified in footnote 3 on page 16 is attached and labeled as Exhibit IV, if applicable.

DHS (Ave)
Actuary's Initials

(575) 214

(575) 214

(575) 214

Attachment to Schedule C, Section III

Actuarial Basis of Valuation

Actuarial Assumptions: January 1, 2013**Economic**

Interest Rate

7.5% increase per year

Salary Projection

4.0% increase per year

Merit Increase: 1.0 percent increase per year

Inflation: 3.0 percent increase per year

Social Security Benefits

Actives: Offset based on social security law in 2013, 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 2013, \$104.90 per month. The premium for years thereafter is assumed to increase at a rate of 5.5% per year.

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
scale AA.

RP-2000 Employee Mortality Rates projected with

Retired/Term Vested Participants
projected

RP-2000 Healthy Annuitant Mortality, rates adjusted by blue collar ratios, set forward one year and

from 2005 with scale AA

Disability Retirees
collar

RP-2000 Healthy Annuitant Rates adjusted by blue

ratios, set forward six years and projected from 2013 with scale AA.

Surviving Beneficiaries

RP-2000 Healthy Annuitant Rates adjusted by ratios of female beneficiary experience to overall female RP-2000 Healthy Annuitant Mortality Rates (Appendix D of *RP-2000 Mortality Tables Report*), set forward one year and projected from 2005 with scale AA.

Attachment to Schedule C, Section III - Continued

Sample Base Rates (Rounded):

Age	Active Male Participant	Male Regular Retiree	Male Disabled Retiree	Male Beneficiary
45	0.15%	0.19%	0.59%	0.20%
55	0.30%	0.77%	1.15%	0.86%
65	0.76%	1.82%	2.93%	1.91%
75	N/A	4.77%	7.82%	4.51%
85	N/A	12.64%	19.98%	12.81%

Age	Active Female Participant	Female Regular Retiree	Female Disabled Retiree	Female Beneficiary
45	0.11%	0.15%	0.25%	0.15%
55	0.25%	0.32%	0.70%	0.55%
65	0.58%	1.25%	2.07%	1.47%
75	N/A	3.38%	5.42%	3.31%
85	N/A	9.23%	14.87%	9.01%

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%

Attachment to Schedule C, Section III – Continued

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	50	N/A
69	50	N/A
≥70	100	N/A

Exclusions

Non-participants

Percentage Married

Active: 80% of male participants and 65% of female participants.

Spouse Age

Female spouses are assumed to be two years younger than male spouses.

Attachment to Schedule C, Section III – Continued

Actuarial Value of Assets

Description of Method

The Actuarial Value of Assets is determined by a Tabular Smoothing Method which takes the Actuarial Value of Assets from the prior valuation report and brings it forward using a specified interest rate. The Actuarial Value of assets in the prior report, contributions by year and annual disbursements are each credited with interest at a rate of one percent less than the prior valuation's interest rate assumption. The resulting value is further subject to a minimum of 80% and a maximum of 120% of the market value of assets.

Attachment to Schedule C, Section IV

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	▼ Base wages, plus "acting" or "in-grade" pay
<i>Average Compensation</i>	▼ 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 (regardless of hire date) or Emergency Medical Services Employees hired on or before January 1, 2006. 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.

Attachment to Schedule C, Section IV - Continued

*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.

Attachment to Schedule C, Section IV - Continued

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

- ▼ Attainment of age 40 *and*
- ▼ Completion of 8 years of service

Members hired prior to January 1, 1975

- ▼ 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

- ▼ Member's beneficiary receives amount equal to the excess, if any, of member's contributions over retirement benefit paid on member's behalf

Members Hired Prior to 1988

- ▼ 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

Spouse Predeceases Retiree

- ▼ 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

Attachment to Schedule C, Section IV

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

Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 1 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

GENERAL INSTRUCTIONS: This exhibit is to be completed only if the municipality is reporting the issuance of bonds (or notes, if applicable) to fund unfunded actuarial accrued liabilities under section 404 of Act 205 of 1984. The bond issue proceeds contributed to the pension plan are amortization contributions allocated under section 202(b)(4) of Act 205. The data requested in this exhibit is modified to reflect the funded status of the pension plan that would exist had the bond issue proceeds not been contributed to the pension plan. Print or type the data requested, rounded to the nearest dollar, in the space provided. Enter zero or negative values, if applicable. Do not leave blanks or refer to exhibits.

NOTE: Earnings on bond issue proceeds contributed to the pension fund are to be calculated proportionately, based on the ratio of borrowed assets to total assets at market value as of the valuation date occurring on or immediately following the date on which the borrowed assets were contributed.

A. Summary of Modified Actuarial Data

1. ACTUARIAL ACCRUED LIABILITY as of valuation date..... \$ 324,697,069 (E1)
(Enter amount reported in item 42 on page 4 of the reporting form.)
2. TOTAL FUND ASSETS
 - a. Market Value of Assets ¹ \$ 71,085,079 (E2)
 - b. Actuarial Value of Assets reported in Item 2a above \$ 72,534,399 (E3)
3. UNFUNDED ACTUARIAL ACCRUED LIABILITY as of valuation date (+ or -).... \$ 252,162,670 (E4)
(Item 1 minus Item 2b)
4. AMORTIZATION CONTRIBUTIONS
 - a. For amortization of initial unfunded actuarial accrued liability established 1/1/85. ²
 - 1) Amortization period remaining (years) 25 (E5)
 - 2) Amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date..... \$ 9,121,224 (E6)
 - 3) Amortization contribution calculated as a level percentage of payroll for the plan year beginning on valuation date ³ \$ N/A (E7)
 - b. For amortization of all increases or decreases in unfunded actuarial accrued liability occurring after 1/1/85 or the initial UAL's establishment. ²
 - 1) Aggregated amortization period (years) N/A (E8)
 - 2) Aggregated amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date..... \$ 3,841,475 (E9)
 - c. Modified Total Amortization Requirement ⁴ \$ N/A (E10)
 - d. Total Amortization Requirement (Item E6 + E9 or Item E7 + E9 or Item E10, whichever is applicable) \$ 12,962,699 (E11)

¹ The value must equal the Total Fund Assets that would have existed had the bond issue proceeds not been contributed to the pension fund, as developed in Schedule II of this exhibit.

² Initial unfunded actuarial accrued liability may be established later than 1/1/85 if coincidental with the establishment of the pension plan or with the initiation of a new amortization schedule authorized by Act 82 of 1998.

³ Enter N/A unless municipality has been certified to use level percentage of payroll amortization pursuant to Section 607 of Act 205.

⁴ If the municipality has formally elected to apply the limit on the amortization contribution under section 202(b)(4), enter the modified total amortization requirement calculated as the amount required to amortize the unfunded actuarial accrued liability over ten years. Otherwise, enter N/A.

Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
 Page 2 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

INSTRUCTIONS: A modified aggregated amortization period must be developed for each contribution to the pension fund comprised of bond issue proceeds. The modified aggregated amortization period will not change once it is calculated and reported in this exhibit. The modified aggregated amortization period is not used for funding purposes.

B. Development of Modified Aggregated Amortization Period

	Contribution Comprised of Bond Issue Proceeds ¹	Date of Contribution	Modified Aggregated Amortization Contribution Target Date ² (MO/DA/YR)	Modified Aggregated Amortization Period Initially Established ² (Years)	Modified Aggregated Amortization Period Remaining (Years)
1.	\$ 36,509,996	12/15/1996	12/15/2035	40	23
2.	\$ 57,041,911	03/10/1998	03/10/2037	40	25
3.	\$				
4.	\$				
5.	\$				
6.	\$				
7.	\$				
8.	\$				
9.	\$				
10.	\$				

¹ Contributions to the pension plan shall consist of original bond issue proceeds used to fund unfunded actuarial accrued liability and shall not include refinancing of an amount previously borrowed.

² Determined under section 404 of Act 205 using the unfunded accrued liability and total amortization requirement shown in Part A of this exhibit and the plan's assumed rate of investment earnings. In the event that the period calculated is indeterminate or is in excess of 30 years, the amortization period initially established shall not exceed 30 years.

Commission Use Only

Int	5,155,594
Prin	3,060,250
Total \$	8,215,844

Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 3 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

INSTRUCTIONS: Provide unfunded actuarial accrued liability and amortization contributions as of valuation date developed under section 404 of Act 205. Bond issue proceeds used to fund unfunded actuarial accrued liabilities are not reflected in the data provided. Submission of the exhibits prepared in compliance with section 202(b)(3) of Act 205 may be required.

Part C - Modified Unfunded Actuarial Accrued Liability and Amortization Contributions

Initial Unfunded Actuarial Accrued Liability					
Amount of Initial Liability	Date Established	Target Date	Original Amortization Period	Remaining Balance	Level Dollar Amortization Contribution ¹
\$ 154,981,297	1998	2037	40	\$ 226,619,628	\$ 9,121,224 (E11)

Changes in Unfunded Actuarial Accrued Liability Since the Last Actuarial Valuation Report Prepared and Submitted Under Act 205.						
Source	Amount of Liability	Date Established	Target Date	Amortization Period	Amortization Contribution	
Benefit Plan Modification	N/A	N/A	N/A	N/A	N/A	
Actuarial Assumption Modification	31,572,286	2013	2027	15	3,327,197	
Actuarial Losses (+) or Gains (-)	-1,634,169	2013	2032	20	-149,116	
Post-Retirement Adjustments	N/A	N/A	N/A	N/A	N/A	
Total	\$ 29,938,117	XXXXXX	XXXXXX	XXXXXX	\$ 3,178,081 (E12)	

Aggregation of Changes in Unfunded Actuarial Accrued Liability Since Initially Established in 1985					
Description	Remaining Balance of Aggregated Liability	Date of Aggregation	Aggregated Target Date	Agg. Amortization Period	Aggregated Amortization Contribution
Aggregation of all prior changes (exclude changes in Section B)	\$ -4,395,075	2011	N/A	N/A	663,394 (E13)
Aggregation of all changes (include changes in Section B)	\$ 25,543,042 ²	Current Valuation Date	2021	9	\$ 3,841,475 (E14)

¹ Level percentage of future payroll amortization contribution should be entered where the municipality has previously implemented that amortization approach pursuant to Section 607 of Act 205.

² The sum of this item (aggregated balance of all changes in UAL) and the remaining balance of the initial liability must equal the amount in Exhibit I, Part A, Item E4.

Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 4 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

INSTRUCTIONS: A separate Part D for debt service requirements is required for each instance where bond issue proceeds are contributed to the pension plan. If more than one Part D is required, please submit color coded copies or request additional originals from the Commission's office.

NOTES: 1) If the bond issue proceeds contributed to an individual pension plan were less than 100% of the total bond issue proceeds contributed, the total debt service requirements must be proportionately allocated among the individual pension plans based on the ratio of the bond issue proceeds contributed to each individual pension plan to the total bond issue proceeds contributed.

2) Debt service requirements determined and reported on this exhibit are not modified if refinancing occurs.

D. Identification and Allocation of Total Debt Service Requirements for Debt Issued to Finance Pension Plan Contributions

Date of Original Borrowing	Total Principal Amount Borrowed and Contributed to Pension Plans	Amount of Total Principal Contributed to this Pension Plan	Percentage of Total Debt Service Allocated to this Pension Plan	Date of Refinancing
12/15/96	\$ 37,710,000.00 (A)	\$ 37,710,000.00 (B)	100 % (B÷A)	N/A

Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1. 1997	\$ -	\$1,834,529.78	\$ -	\$37,710,000.00
2. 1998	525,000.00	2,564,976.25	-	37,710,000.00
3. 1999	560,000.00	2,533,905.00	-	37,185,000.00
4. 2000	590,000.00	2,499,965.00	-	36,625,000.00
5. 2001	630,000.00	2,463,050.00	-	36,035,000.00
6. 2002	670,000.00	2,423,065.00	-	34,405,000.00
7. 2003	715,000.00	2,379,772.50	-	34,735,000.00
8. 2004	760,000.00	2,332,930.00	-	34,020,000.00
9. 2005	810,000.00	2,282,285.00	-	33,260,000.00
10. 2006	865,000.00	2,227,631.25	-	32,450,000.00
11. 2007	925,000.00	2,169,008.75	-	31,585,000.00
12. 2008	985,000.00	2,106,210.00	-	30,660,000.00
13. 2009	1,055,000.00	2,038,890.00	-	29,675,000.00
14. 2010	1,125,000.00	1,966,950.00	-	28,620,000.00
15. 2011	1,200,000.00	1,890,225.00	-	27,495,000.00
16. 2012	1,285,000.00	1,808,220.00	-	26,295,000.00
17. 2013	1,375,000.00	1,717,690.00	-	25,010,000.00
18. 2014	1,475,000.00	1,617,940.00	-	23,635,000.00
19. 2015	1,580,000.00	1,511,015.00	-	22,160,000.00
20. 2016	1,695,000.00	1,396,390.00	-	20,580,000.00

(Continue on additional pages, if necessary.)

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	Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1	2017	\$ 1,820,000.00	\$ 1,273,365.00	\$ -	\$ 18,885,000.00
2	2018	1,950,000.00	1,141,415.00	-	17,065,000.00
3	2019	2,095,000.00	998,792.50	-	15,115,000.00
4	2020	2,250,000.00	844,545.00	-	13,020,000.00
5	2021	2,415,000.00	678,937.50	-	10,770,000.00
6	2022	2,590,000.00	501,260.00	-	8,355,000.00
7	2023	2,780,000.00	310,625.00	-	5,765,000.00
8	2024	2,985,000.00	105,967.50		2,985,000.00
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Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 4 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

INSTRUCTIONS: A separate Part D for debt service requirements is required for each instance where bond issue proceeds are contributed to the pension plan. If more than one Part D is required, please submit color coded copies or request additional originals from the Commission's office.

NOTES: 1) If the bond issue proceeds contributed to an individual pension plan were less than 100% of the total bond issue proceeds contributed, the total debt service requirements must be proportionately allocated among the individual pension plans based on the ratio of the bond issue proceeds contributed to each individual pension plan to the total bond issue proceeds contributed.

2) Debt service requirements determined and reported on this exhibit are not modified if refinancing occurs.

D. Identification and Allocation of Total Debt Service Requirements for Debt Issued to Finance Pension Plan Contributions

Date of Original Borrowing	Total Principal Amount Borrowed and Contributed to Pension Plans	Amount of Total Principal Contributed to this Pension Plan	Percentage of Total Debt Service Allocated to this Pension Plan	Date of Refinancing
03/10/98	\$ 255,865,000.00 (A)	\$ 57,569,624.42 (B)	22.3 % (B÷A)	N/A

Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1. 1998	\$ -	\$1,873,403.84	\$ -	\$57,569,624.42
2. 1999	225,000.00	3,740,451.43	-	57,569,624.42
3. 2000	225,000.00	3,727,795.18	-	57,344,624.42
4. 2001	225,000.00	3,715,071.43	-	57,119,624.42
5. 2002	225,000.00	3,702,111.43	-	56,894,624.42
6. 2003	225,000.00	3,689,050.18	-	56,669,624.42
7. 2004	225,000.00	3,675,853.93	-	56,444,624.42
8. 2005	563,624.99	3,652,273.94	-	56,219,624.42
9. 2006	521,999.99	3,619,574.69	-	55,655,999.43
10. 2007	553,499.99	3,586,902.44	-	55,133,999.44
11. 2008	577,124.99	3,552,346.23	-	54,580,499.45
12. 2009	623,249.99	3,512,858.03	-	54,003,374.46
13. 2010	677,249.99	3,469,880.22	-	53,380,124.47
14. 2011	726,749.99	3,426,005.22	-	52,702,874.48
15. 2012	1,775,249.98	3,347,373.91	-	51,976,124.49
16. 2013	2,471,624.98	3,212,979.43	-	50,200,874.51
17. 2014	2,630,249.97	3,049,022.22	-	47,729,249.53
18. 2015	2,860,874.97	2,870,560.66	-	45,098,999.56
19. 2016	3,050,999.97	2,678,424.72	-	42,238,124.59
20. 2017	4,105,124.96	2,445,850.66	-	39,187,124.62

(Continue on additional pages, if necessary.)

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	Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1	2018	\$ 2,977,874.97	\$ 2,215,653.17	\$ -	\$ 35,081,999.66
2	2019	4,506,749.95	1,970,149.48	-	32,104,124.69
3	2020	4,814,999.95	1,662,531.73	-	27,597,374.74
4	2021	5,143,499.95	1,333,901.23	-	22,782,374.79
5	2022	5,495,624.94	982,810.12	-	17,638,874.84
6	2023	5,871,374.95	607,699.11	-	12,143,249.90
7	2024	6,271,874.95	206,971.86	-	6,271,874.95
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Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 5 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

Schedule I

STATEMENT OF RECEIPTS AND DISBURSEMENTS INCLUDING BOND ISSUE ASSETS FOR THE PERIOD ENDING JANUARY 1, 2013

TOTAL FUND ASSETS AT JANUARY 1, 2011 ¹ \$ 166,610,549

RECEIPTS:

Employer Contributions. \$ 12,453,942

Employee Contributions. \$ 6,432,578

State Aid. \$ 10,719,657

Supplemental State Assistance. \$ 0

Investment Income. \$ 3,208,808

Net Change in Market Value..... \$ 20,370,371

Other Receipts (Identify)..... \$ 3,663,737

TOTAL RECEIPTS..... \$ 56,849,093

DISBURSEMENTS:

Monthly Benefit Payments. \$ 38,046,177

Refund of Employee Contributions..... \$ 1,089,308

Administrative Expenses..... \$ 1,343,506

Other Disbursements (Identify)..... \$ 3,571,467

TOTAL DISBURSEMENTS..... \$ 44,050,458

TOTAL FUND ASSETS AT JANUARY 1, 2013 ² \$ 179,409,183

¹ All filers should prepare this schedule for a two-year period. Value must equal Total Fund Assets at Market Value reported in Section V of the January 1, 2011, actuarial valuation reporting form if bonds were issued on or after that date. If bonds were issued prior to that date, the assets reported should be from Exhibit I of the January 1, 2011, actuarial valuation reporting form.

² Value must equal Total Fund Assets at market value reported in Section V of the current Act 205 actuarial valuation reporting form.

Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: MUNICIPAL of CITY OF PITTSBURGH in ALLEGHENY
Page 6 of 6 (Valuation Date) (Pension Plan) (Municipality) (County)

Schedule II

STATEMENT OF RECEIPTS AND DISBURSEMENTS EXCLUDING BOND ISSUE ASSETS FOR THE PERIOD ENDING JANUARY 1, 2013

TOTAL FUND ASSETS AT JANUARY 1, 2011 ¹ \$ 68,734,967

RECEIPTS:

Employer Contributions ² \$ 15,950,011

Employee Contributions..... \$ 6,432,578

State Aid..... \$ 10,719,657

Supplemental State Assistance..... \$ 0

Investment Income ³ \$ 6,106,224

Net Change in Market Value ⁴ \$ 3,341,757

Other Receipts (Identify)..... \$ 3,663,737

TOTAL RECEIPTS..... \$ 46,213,964

DISBURSEMENTS:

Monthly Benefit Payments..... \$ 38,046,177

Refund of Employee Contributions..... \$ 1,089,308

Administrative Expenses ⁵..... \$ 1,156,900

Other Disbursements (Identify)..... \$ 3,571,467

TOTAL DISBURSEMENTS..... \$ 43,863,852

TOTAL FUND ASSETS AT JANUARY 1, 2013 ⁶ \$ 71,085,079

¹ All filers should prepare this schedule for a two-year period. Value must equal Total Fund Assets at Market Value reported in Section V of the January 1, 2011, actuarial valuation reporting form if bonds were issued on or after that date. If bonds were issued prior to that date, the assets reported should be from Exhibit I of the January 1, 2011, actuarial valuation reporting form.

² This amount includes hypothetical amortization contributions that would have been made had bond issue proceeds not been deposited.

³ This amount does not include earnings on bond issue proceeds, but does include assumed interest earnings on hypothetical amortization contributions.

⁴ This amount represents the proportionate change in market value attributable to assets excluding bond issue proceeds.

⁵ Investment expenses attributable to bond issue proceeds should be excluded from this amount.

⁶ Value must equal Total Fund Assets at market value reported in Exhibit I, Page 1, Item E2.



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ACTUARIAL VALUATION REPORT

for the

**City of Pittsburgh
Municipal Pension Fund**

as of

January 1, 2013

Report Date: March 28, 2014

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Section One: Commentary and Actuarial Disclosures

At the request of the City of Pittsburgh, we have completed an actuarial valuation report for the City of Pittsburgh Municipal Pension Fund as of January 1, 2013. This actuarial valuation is based upon participant data as of January 1, 2013 and upon asset information as of December 31, 2012 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) in accordance with that law. This valuation should be used for no other purpose than those outlined herein.

One of the cost components of the Minimum Municipal Obligation is an amortization payment calculated according to specified rules of Act 205. The minimum amortization under Act 205 reflects the utilization of provisions of Act 82 of 1998 for which the City qualified. Under those provisions, the Unfunded Actuarial Accrued Liability as of January 1, 1998 is being amortized over 40 years calculated pursuant to special procedures described beginning on page 5. Bases for subsequent years are established according to the normal procedures of Act 205 of 1984 and amortized over various periods according to the source of the change in unfunded liability such as experience gains or losses, benefit changes, and assumption changes. These periods are not limited by average future service because the City qualifies for Distress Level II according to the requirements under Act 205 of 1984.

Because the Act 82 amortization methodology does not result in an actuarially appropriate funding level, this report also presents an actuarially recommended amortization payment based on a 30-year "fresh start" amortization payment commencing as of January 1, 2011 and additional amortization bases added thereafter according to the normal procedures of Act 205 of 1984.

The City's pension plan assets are aggregated 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, 2012 the calculated market value of assets in the Municipal Pension Fund is \$179,409,183. Section Nine contains exhibits illustrating the calculation of this amount. Section Nine also shows the development of the actuarial value of assets, which is determined by using the Tabular Reserve Method first adopted as of January 1, 2009.

The City Controller obtained third-party advice from which he determined that the dedicated stream of revenue created by Ordinances 42 and 44 of 2010 can be recognized as a pension plan asset for purposes of the required actuarial report under Act 205 and the Board of Trustees of the Comprehensive Municipal Pension Trust Fund has unanimously directed us to combine the assets listed in the CAFR with the value of the revenue stream as determined by an independent accounting firm, Gleason & Associates. The value so provided is consistent with Paragraph 3.5 (Assets that are Difficult to Value) of ASOP 44, Selection and Use of Asset Valuation Methods for Pension Valuations. The Public Employee Retirement Commission (PERC) has accepted the Revised Actuarial Valuation Report as of January 1, 2011 which included the present value of the revenue stream as a pension plan asset for Act 205 actuarial valuation purposes. The inclusion of the present value of this stream of dedicated future parking meter revenues does not imply that it necessarily qualifies as a pension plan asset under GAS 25 or for any other purpose.

2013 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, 2013 compared to the prior year are as follows:

	Current Year 2013	Prior Year 2011
<i>Normal Cost as a Percentage of Total W-2 Payroll</i>	6.997%	5.943%
<i>Expenses as a Percentage of Total W-2 Payroll</i>	0.800%	1.100%
<i>Minimum Amortization Payment</i>	\$8,567,318	\$5,878,010

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 December 1996 and again in March 1998. The 2013 annual debt service payment for the bonds issued in 1996 is

approximately \$3.09 million; The 2013 debt service payment for the bonds issued in March 1998 is approximately \$5.68 million.

Assumption Changes

Multiple assumption changes have been made for this actuarial valuation. The most significant is the change in the interest rate assumption, which the City decided to lower from 8.0% to 7.5% per year. We believe this to be a reasonable and more conservative assumption.

Act 205 requires that the City have an experience study prepared every four years. The purpose of this experience study is to compare the plan's actual experience with the valuation assumptions. This comparison can indicate that actuarial assumptions should be changed. Based on the January 1, 2013 experience study, the mortality and retirement assumptions have been changed for this valuation.

The Plan experienced fewer retirements than expected during the five-year experience study period (and the two-year valuation period). The largest difference between actual retirements and expected retirements were for non-EMS employees beyond the last assumed retirement age (age 68). Therefore, the retirement rates for non-EMS employees were extended two more years to age 70.

The mortality assumptions are all based on the RP-2000 Mortality Tables with various adjustments. The changes in the mortality assumptions are summarized in the following chart:

	Prior	Current
Active Participants	Employee Rates	Employee Rates projected with Scale AA
Retired Participants	Healthy Annuitant rates adjusted by blue collar ratios and set forward two years	Healthy Annuitant rates adjusted by blue collar ratios, set forward one year and projected from 2005 with Scale AA
Disabled Participants	Same as Retired, but with five year set forward	Same as Retired, but with six year set forward and projected from 2013 with Scale AA
Surviving Beneficiary	Healthy Annuitant rates adjusted by blue collar ratios, set forward two years and adjusted by ratio of female beneficiary experience to overall female mortality	Healthy Annuitant rates set forward one year, adjusted by ratio of female beneficiary experience to overall female mortality and projected from 2005 with Scale AA

In addition the projected increase in Medicare premiums was reduced from 6.5% per year to 5.5% per year based on lower expectations of future Medicare premium increases. The net effect of the interest rate, mortality, retirement and Medicare premium assumption changes was an increase in the actuarial accrued liability (AAL) of \$31,572,286. This amount will be amortized over 15 years.

Benefit Changes

It is our understanding that there were no benefit changes during the period from January 1, 2011 through January 1, 2013. The benefits provided are summarized in Section Four of this report.

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, changes affect the current year's actuarial experience 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 experience gains and losses provide the mechanism for correcting these gains and losses and maintaining the Plan's funding on a sound basis.

The experience 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. For bases established in 2009 and later, Act 205 requires the amortization of experience gains or losses over a 20-year period. An experience gain will reduce the total amortization payment and an experience loss will increase the payment.

For 2013, a new experience gain base of \$6,447,817 has been established. The gain was largely due to contributions to the plan in excess of the minimum amounts required based on the January 1, 2011 actuarial valuation report (based on the Act 82 amortization). Additional notable sources of gain were salary increases for the two-year period that were, on average, less than the assumed 4.0% annual rate and fewer participants retiring than expected. Partially offsetting the contribution, salary and retirement gains was a loss from return on the actuarial value of assets (AVA) that was less than the assumed 8.0% annual rate. Under the tabular smoothing method interest is credited on the AVA each year at a rate that is one percent less than the assumed interest rate of the plan.

Funded Ratios

Another measure of comparison between valuations is the plan's funded ratio, the actuarial value of assets divided by the actuarial accrued liability. This ratio is currently 62.4 percent (refer to Table 1). As

of January 1, 2011, the corresponding ratio was 66.2 percent so the current valuation shows a decrease of 3.8 percent. This decrease was primarily due to the change to more conservative assumptions (which should help the plan's funded status in the long run). The funded ratio based on the market value of assets is 55.3%.

Accounting Information

This valuation also includes certain actuarial information required for accounting purposes. Section Six contains a summary of the actuarial present values of accumulated Plan benefits and a summary of certain information required by GAS#27.

Actuarially Recommended Amortization Payment

Act 82 of 1998 has a significant impact on the minimum funding requirements. We believe that the procedure for determining amortization amounts in accordance with Act 82 no longer produces an actuarially appropriate funding level. The adoption of a funding policy based on the alternative Actuarially Recommended Amortization Payment in this report is highly recommended.

Act 82 allowed the City to change the minimum funding amortization schedule for its Unfunded Actuarial Accrued Liability because pension bond proceeds were deposited by the City 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 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 using a special procedure that was mechanically complex but lowered the amortization payment from what it otherwise would have been. The annual amortization payment was calculated in several steps. An amortization payment was calculated that would eliminate the Unfunded Actuarial Accrued Liability net of 1998 bond proceeds over a 40-year period using a statutory interest rate of 8.75 percent. Next, the future value of these payments at the end of the 40-year period was calculated using 8.75 percent interest. Finally, an amortization payment was calculated using 10 percent interest that would have the same future value at the end of the 40-year period as the previous calculation. The 10 percent amortization amount became the amortization payment starting in 1998.

There are several drawbacks to this approach in the long-term. Under the Act 82 amortization schedule, the outstanding balance of Unfunded Actuarial Accrued Liability for the affected 1998 base actually grows for several years, extending the funding of obligations beyond normal payment periods. For example, the Unfunded Actuarial Accrued Liability for this special base has increased from \$53,226,758 as of January 1, 1998 to \$77,830,220 as of January 1, 2013 and doesn't start to decline until

during the year 2024. Therefore, this amortization method does not maintain normal generational funding objectives.

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 on the comparative interest rate balance. When this legislation was enacted in 1998, investment conditions were different, and an average 10 percent rate of return on a significant block of assets no longer seems reasonable. This balance grows over time and the losses from this source will tend to grow significantly. In fact, because benefits are being paid out as contributions are coming in, the comparative interest rate balance, which isn't adjusted for benefit payments, eventually will become larger than the total market value of assets. In practice, this will likely lead to significant experience losses, an increasing pattern of amortization payments, and a funding ratio which will still be well below 100% at the end of the 40-year period due to remaining balances on these losses.

By contrast, funding the plan on the basis of the actuarially recommended amortization payment is expected to result in a more level amortization schedule, that will result in higher contributions now but ultimately lower contributions, and will likely lead to a funding ratio much closer to 100% by the fixed target year.

Section Two: Certification

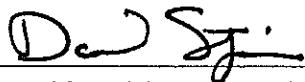
In the actuary's opinion, the actuarial assumptions used in the valuation are reasonably related to the experience of the Plan and to reasonable expectations. They represent the actuary's best estimate of anticipated experience under the Plan. To the best of our knowledge, the report is complete and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

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

MOCKENHAUPT BENEFITS GROUP

I, David H. Stimpson, am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Prepared and Certified by:



David H. Stimpson, E.A., F.C.A., M.A.A.A.
Vice President of Actuarial Services

Section Three: Valuation Highlights

Participant Count	01/01/13	01/01/11	Change
Total Active	1,784	1,829	(45)
Vested	1,010	1,081	(71)
Not Vested	774	748	26
Total In Payment Status	1,584	1,597	(13)
Retirement Benefits	1,225	1,223	2
Disability Benefits	267	282	(15)
Survivor Benefits	92	92	0
Deferred	66	60	6
Total	3,434	3,486	(52)

Average Monthly Benefit

<i>In Payment Status</i>			
Retirement Benefits	\$ 984	\$ 921	\$63
Disability Benefits	\$ 1,025	\$ 1,003	\$22
Survivor Benefits	\$ 479	\$ 459	\$20
Deferred	\$ 1,514	\$ 1,333	\$181

Active Participant Averages

Hire Age	33.8	33.6	0.2
Attained Age	49.6	49.3	0.3
Normal Retirement Age	60.4	60.2	0.2
Assumed Future Service	14.0	14.0	0.0
Monthly Compensation	\$3,490	\$3,342	\$148

Financial Data

Market Value of Assets	\$ 179,409,183	\$ 166,610,549	\$ 12,798,634
Accumulated Employee Contributions	\$ 62,769,519	\$ 60,051,786	\$ 2,717,733

Cost Components

Normal Cost as a percentage of total payroll	6.997%	5.943%	1.054%
Expenses as a percentage of total payroll	0.800%	1.100%	-0.300%
Total	7.797%	7.043%	0.754%
Amortization Payment	\$8,567,318	\$5,878,010	\$2,689,308

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	▼ Base wages, plus "acting" or "in-grade" pay
<i>Average Compensation</i>	▼ 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 (regardless of hire date) or Emergency Medical Services Employees hired on or before January 1, 2006. 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

Members hired prior to January 1, 1975

- ▼ If 25 years of service, reduction applied only
on benefits attributed to earnings in excess
of \$7,800

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

- ▼ Attainment of age 40 *and*
- ▼ Completion of 8 years of service

Members hired prior to January 1, 1975

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

Death Before Early Retirement Eligibility

Death Benefits After Retirement

- ▼ Member's beneficiary receives amount equal to the excess, if any, of member's contributions over retirement benefit paid on member's behalf

Members Hired Prior to 1988

- ▼ 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

Spouse Predeceases Retiree

- ▼ 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

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 1: Normal Cost and Actuarial Accrued Liability

Normal Cost	
Retirement Benefits	\$3,762,033
Disability Benefits	680,143
Preretirement Death Benefits	50,906
Postretirement Death Benefits	0
Refunds to Withdrawals	643,071
Medicare Premium Benefits	62,917
Vested Benefits	<u>532,383</u>
Total	\$5,731,453

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	\$8,550,594	\$123,592,181	\$166,093,475	\$298,236,250
Disability Benefits	0	27,535,328	16,123,779	43,659,107
Survivor Benefits	0	4,311,369	0	4,311,369
Preretirement Death Benefits	0	0	1,821,051	1,821,051
Postretirement Death Benefits	0	0	0	0
Refunds to Withdrawals	0	0	2,176,838	2,176,838
Medicare Premium Benefits	0	0	9,989,507	9,989,507
Vested Benefits	<u>0</u>	<u>0</u>	<u>5,445,272</u>	<u>5,445,272</u>
Total	\$8,550,594	\$155,438,878	\$201,649,922	\$365,639,394

Actuarial Present Value of Future Normal Costs

Retirement Benefits	\$26,598,790
Disability Benefits	5,079,896
Preretirement Death Benefits	368,843
Postretirement Death Benefits	0
Refunds to Withdrawals	4,582,192
Medicare Premium Benefits	305,069
Vested Benefits	<u>4,007,535</u>
Total	\$ 40,942,325
	(\$40,942,325)

Actuarial Accrued Liability **\$324,697,069**

Unfunded Actuarial Accrued Liability

Actuarial Accrued Liability	\$324,697,069
Actuarial Value of Assets	<u>(202,529,949)</u>
Unfunded Actuarial Accrued Liability	\$122,167,120

Funded Ratio **62.4%**

Table 2: Actuarial (Gain) Loss Determination**Reconciliation of Funded Status**

Unfunded Actuarial Accrued Liability as of January 1, 2011			\$95,641,110
	2011	2012	
Normal Cost/Administrative Expenses Assumed	\$5,736,167	\$5,928,145	11,664,312
Interest Charged at Valuation Rate			17,343,430
Contributions Made	2011	2012	
- Municipality	\$5,932,666	\$6,521,276	
- State Aid Allocated	6,398,832	4,320,825	
- Employees	<u>3,196,201</u>	<u>3,236,377</u>	\$(29,606,176)
Interest Credited at Valuation Rate			(2,535,104)
Special Adjustment Because of Higher Act 82 Interest Rate			<u>(3,883,503)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$88,624,070
Experience from Investment Return			
- Comparative Int. Rate Amortization Tab. (Gain) Loss		\$5,449,940	
- Other Investment Return (Gain) Loss		<u>2,348,037</u>	7,797,977
Experience (Gain) Loss from all Other Sources			(5,827,213)
Increase (Decrease) in Unfunded Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$ 0	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>31,572,286</u>	<u>31,572,286</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$122,167,120</u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2011		\$1,970,764
Actuarially Required Contributions and Bond Proceeds with Interest	\$23,722,698	
Actual Contributions with Interest	<u>(32,141,280)</u>	
Contribution (Gain) Loss		<u>(8,418,582)</u>
Loss (Gain) to be Amortized		<u>\$(6,447,817)</u>

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2011	2012	
Act 82 Amortization Balance at January 1	\$84,501,619	\$90,089,723	
Act 82 Amortization Payment	<u>3,132,592</u>	<u>3,132,592</u>	
Comparative Interest Rate Balance at January 1	\$ 87,634,212	\$ 93,222,315	
Actual Investment Return on Balance	<u>2,455,511</u>	<u>10,810,992</u>	
Actual Act 82 Amort. Balance at December 31	\$90,089,723	\$104,033,307	\$104,033,307

Balance Calculated Using 10 Percent Investment Return

Comparative Int. Rate Balance at January 1	\$87,634,212	\$99,530,225	
Interest at 10 Percent	<u>8,763,421</u>	<u>9,953,022</u>	
Comparative Act 82 Amort. Bal. at Dec. 31	\$96,397,633	\$109,483,247	\$109,483,247

<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>		\$5,449,940
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Table 3: Amortization of Unfunded Actuarial Accrued Liability

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Remaining Payments	Annual Amount
Initial	\$53,226,758	1998	2037	\$77,830,220	25	\$3,132,592
Assumption Change	\$(4,327,036)	1998	2017	\$(1,807,965)	5	\$(415,689)
Experience Loss	531,346	1999	2013	59,143	1	59,143
Experience Gain	(8,518,572)	2000	2014	(1,819,300)	2	(942,530)
Experience Loss	15,454,485	2001	2015	4,752,648	3	1,700,067
Ben. Mod. - Actives	15,075,742	2002	2021	9,734,028	9	1,419,512
Experience Loss	1,076,675	2002	2016	424,054	4	117,776
Investment Loss	15,617,085	2002	2032	13,258,757	20	1,209,842
Assumption Change	(5,300,394)	2003	2022	(3,665,731)	10	(496,786)
Ben. Mod. - Actives	6,262,573	2003	2022	4,331,169	10	586,968
Experience Loss	4,617,946	2003	2017	2,185,132	5	502,407
Investment Loss	20,777,261	2003	2032	18,261,669	20	1,666,351
Assumption Change	(55,417)	2005	2024	(42,861)	12	(5,154)
Ben. Mod.-Actives	7,325,991	2005	2024	5,666,089	12	681,395
Experience Gain	(7,233,308)	2005	2019	(4,440,338)	7	(779,849)
Experience Gain	(3,323,763)	2007	2021	(2,436,520)	9	(355,318)
Assumption Change	(9,457,779)	2009	2028	(8,526,485)	16	(867,648)
Experience Loss	40,849,981	2009	2028	36,827,544	16	3,747,542
Experience Gain	(56,098,421)	2011	2030	(53,548,602)	18	(5,132,146)
Agg. Changes through Last Valuation	N/A	N/A	2022	\$19,212,431	10	\$2,695,883
Assumption Change	\$31,572,286	2013	2027	\$31,572,286	15	\$3,327,197
Ben. Mod. - Actives	N/A					
Ben. Mod. - Retired	N/A					
Experience Gain	(6,447,817)	2013	2032	(6,447,817)	20	(588,354)
Agg. Changes-2013	N/A	N/A	2027	\$25,124,469	15	\$2,738,843
Aggregate Changes	N/A	N/A	2024	\$44,336,900	12	\$5,434,726
Aggregate	N/A	N/A	2085	\$122,167,120	73	\$8,567,318

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 4: Municipal Contributions

Required Municipal Contributions (Reflecting Act 82 of 1998)

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 1)	\$ 5,731,453
Total Annual Payroll	\$81,916,275
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	6.997%
• Administrative Expense (as a % of payroll)	0.800%
• Gross Normal Cost	7.797%
Net Amortization Payment (Table 3)	\$8,567,318
Funding Adjustment	\$ 0

Amortization Payment for Actuarially Recommended Contribution

See Section One for further explanation of the basis of this recommendation.

Source	Original Amount	Year Est.	Target Year	Remaining Balance	Remaining Payments	Annual Amount
Initial	\$95,641,110	2011	2040	\$93,885,038	28	\$7,546,191
Experience Loss	\$(3,290,204)	2013	2032	\$(3,290,204)	20	\$(300,226)
Assumption Change	31,572,286	2013	2027	31,572,286	15	3,327,197
Aggregate	N/A	N/A	2035	\$122,167,120	23	\$10,573,162

Section Six: Accounting Information

Accumulated Plan Benefits		<u>01/01/13</u>	<u>01/01/11</u>
Assets at Market Value		<u>\$ 179,409,183</u>	<u>\$ 166,610,549</u>
Actuarial Present Value of Vested Benefits			
Retired	\$ 155,438,878		
Deferred	8,550,594		
Employee Contributions	2,885,951		
Active	<u>131,189,222</u>		
Total		<u>\$ 298,064,645</u>	<u>\$ 255,967,632</u>
Unfunded Actuarial Present Value of Vested Benefits		<u>\$118,655,462</u>	<u>\$ 89,357,083</u>
Actuarial Present Value of Accrued Benefits			
Retired	\$ 155,438,878		
Deferred	8,550,594		
Employee Contributions	1,248,632		
Active	<u>139,338,634</u>		
Total		<u>\$ 304,576,738</u>	<u>\$ 260,715,529</u>
Unfunded Actuarial Present Value of Accrued Benefits		<u>\$ 125,167,555</u>	<u>\$ 94,104,980</u>

GAS #27 Information

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

	2011	2012
Annual Required Contribution (ARC)	\$15,206,442	\$ 9,839,391
Interest on NPO	(597,158)	(360,146)
Adjustment to the ARC	<u>684,869</u>	<u>392,049</u>
Annual pension cost	15,294,153	9,871,294
Contributions made	<u>12,331,498</u>	<u>10,842,101</u>
Change in NPO	2,962,655	(970,807)
NPO, Beginning of Year (1/1)	<u>(7,464,475)</u>	<u>(4,501,820)</u>
NPO, End of Year (12/31)	\$ (4,501,820)	\$ (5,472,627)

Annual Pension Cost for the Year Beginning 1/1/2013

Annual Required Contribution (ARC)	\$ 10,166,118
Interest on NPO	(437,810)
Adjustment to the ARC	<u>494,177</u>
Annual Pension Cost	\$ 10,222,485

Other Information from the 1/1/2013 Actuarial Valuation for GAS #25 and GAS #27

Actuarial Cost Method	Entry Age
Asset Valuation Method	Tabular Smoothing
	Level Dollar
Amortization Method	Closed
Aggregate Remaining Amortization Period (Years)	30
Actuarial Assumptions	
Investment Rate of Return	7.50%
Projected Salary Increases	4.00%
Underlying Inflation Rate	3.00%

Section Seven: Actuarial Basis of Valuation

Actuarial Assumptions: January 1, 2013

Economic

Interest Rate

7.5% increase per year

Salary Projection

4.0% increase per year

Merit Increase: 1.0 percent increase per year

Inflation: 3.0 percent increase per year

Social Security Benefits

Actives: Offset based on social security law in 2013, 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 2013, \$104.90 per month. The premium for years thereafter is assumed to increase at a rate of 5.5% per year.

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 Employee Rates projected with scale AA.

Retired/Term Vested Participants

RP-2000 Healthy Annuitant Mortality, rates adjusted by blue collar ratios, set forward one year and projected from 2005 with scale AA

Disability Retirees

RP-2000 Healthy Annuitant Rates adjusted by blue collar ratios, set forward six years and projected from 2013 with scale AA.

Surviving Beneficiaries

RP-2000 Healthy Annuitant Rates adjusted by ratios of female beneficiary experience to overall female RP-2000 Healthy Annuitant Mortality Rates (Appendix D of *RP-2000 Mortality Tables Report*), set forward one year and projected from 2005 with scale AA.

Sample Base Rates (Rounded):

Age	Active Male Participant	Male Regular Retiree	Male Disabled Retiree	Male Beneficiary
45	0.15%	0.19%	0.59%	0.20%
55	0.30%	0.77%	1.15%	0.86%
65	0.76%	1.82%	2.93%	1.91%
75	N/A	4.77%	7.82%	4.51%
85	N/A	12.64%	19.98%	12.81%

Age	Active Female Participant	Female Regular Retiree	Female Disabled Retiree	Female Beneficiary
45	0.11%	0.15%	0.25%	0.15%
55	0.25%	0.32%	0.70%	0.55%
65	0.58%	1.25%	2.07%	1.47%
75	N/A	3.38%	5.42%	3.31%
85	N/A	9.23%	14.87%	9.01%

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	50	N/A
69	50	N/A
≥70	100	N/A

Exclusions

Non-participants

Percentage Married

Active: 80% of male participants and 65% of female participants.

Spouse Age

Female spouses are assumed to be two years younger than male spouses.

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	16	2	6	3	0	0	0	0	0	0	27
25-29	33	25	16	27	10	1	0	0	0	0	112
30-34	6	16	24	34	41	7	0	0	0	0	128
35-39	8	10	14	21	42	22	4	0	0	0	121
40-44	13	4	8	27	38	48	8	6	0	0	152
45-49	14	9	18	16	35	41	33	34	6	0	206
50-54	8	5	12	36	43	42	18	45	49	31	289
55-59	2	6	8	22	36	44	34	46	51	115	364
60-64	4	3	1	8	29	29	22	41	32	121	290
65+	1	1	2	1	13	15	10	12	9	31	95
Total	105	81	109	195	287	249	129	184	147	298	1784

Age Distribution of Deferred Vested Participants

Persons Entitled To Deferred Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	1	\$28,740.00	\$28,740.00
45-49	3	53,062.56	17,687.52
50-54	29	548,290.80	18,906.58
55-59	26	486,309.00	18,704.19
60-64	7	82,842.48	11,834.64
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
85+	0	0.00	0.00
Total	66	\$1,199,244.84	\$18,170.38

Age Distribution of Retired Participants

Regular Retirements			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 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	10	\$76,461.72	\$ 7,646.17
55-59	80	915,723.96	11,446.55
60-64	190	2,861,363.52	15,059.81
65-69	216	3,209,756.28	14,859.98
70-74	223	2,659,837.08	11,927.52
75-79	164	1,771,625.40	10,802.59
80-84	158	1,479,979.20	9,366.96
85+	184	1,489,340.16	8,094.24
Total	1,225	\$14,464,087.32	\$11,807.42

Age Distribution of Retired Participants

Disability Retirements			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	1	\$14,135.88	\$14,135.88
45-49	0	0.00	0.00
50-54	22	324,152.04	14,734.18
55-59	56	894,641.76	15,975.75
60-64	57	783,960.72	13,753.70
65-69	46	585,918.48	12,737.36
70-74	19	180,464.04	9,498.11
75-79	26	201,036.24	7,732.16
80-84	21	167,021.88	7,953.42
85+	19	133,567.32	7,029.86
Total	267	\$3,284,898.36	\$12,302.99

Age Distribution of Retired Participants

Survivors			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 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	4	\$18,430.80	\$4,607.70
55-59	8	67,885.92	8,485.74
60-64	11	72,457.20	6,587.02
65-69	10	69,620.52	6,962.05
70-74	20	119,803.56	5,990.18
75-79	10	47,758.32	4,775.83
80-84	9	41,232.00	4,581.33
85+	20	91,707.12	4,585.36
Total	92	\$528,895.44	\$5,748.86

Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 30	0	0.00	0.00
30-34	0	0.00	0.00
35-39	0	0.00	0.00
40-44	1	\$14,135.88	\$14,135.88
45-49	0	0.00	0.00
50-54	36	419,044.56	11,640.13
55-59	144	1,878,251.64	13,043.41
60-64	258	3,717,781.44	14,410.01
65-69	272	3,865,295.28	14,210.64
70-74	262	2,960,104.68	11,298.11
75-79	200	2,020,419.96	10,102.10
80-84	188	1,688,233.08	8,979.96
85+	223	1,714,614.60	7,688.86
Total	1,584	\$18,277,881.12	\$11,539.07

Demographic Data as of January 1, 2013

Changes in Plan Participation for Active Members

Active Members	Number
As of January 1, 2011	1,829
New Entrants	195
Returned from Inactive Status	<u>1</u>
Total	2,025

Separation from Active Service

Transfer to another Plan	(3)
Separations w/Deferred Benefit	(17)
Separations w/o Deferred Benefit	(108)
Disability	(11)
Death	(5)
Retirement with a Service Retirement Benefit	<u>(97)</u>
Total Separations	(241)

Data Adjustments	<u>0</u>
Active Members as of January 1, 2013	1,784

Changes in Plan Participants for Inactive Members and Survivors

	Deferred Vested	Regular Retirements	Disability Retirement	Survivors	Total
As of January 1, 2011	60	1,223	282	92	1,657
New Benefit Recipients	17	97	11	7	132
Death	0	(114)	(30)	(7)	(151)
Commencement of Deferred Benefits	(12)	10	2	0	0
Returned to Active Status	0	(1)	0	0	(1)
Changed Inactive Status	0	0	0	0	0
Net Data Adjustments	1	10	2	0	13
As of January 1, 2013	66	1,225	267	92	1,650

Section Nine: Plan Assets

Combined Municipal Pension Trust Fund Calendar Year 2011

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. As directed by the Trustees of the City of Pittsburgh Comprehensive Municipal Pension Trust Fund, the values represent a combination of the assets listed in the City's 2010 Comprehensive Annual Financial Report (CAFR) and the present value calculated by Gleason and Associates of the dedicated stream of revenues created by City Ordinances 42 & 44 of 2010. Assets are shown at market value.

Summary of Values for Aggregated Trust

	<u>1/1/11</u>	<u>1/1/12</u>
Invested Portfolio	\$334,927,888	\$325,275,669
Dedicated Funding from Parking Assets	238,572,759	246,267,849
Accrued Interest	540,982	506,858
Accrued Contributions	12,606	
Due from City of Pittsburgh		1,402,380
Accrued Expenses and Other Payables	<u>(2,671,784)</u>	<u>(2,660,726)</u>
Market Value of Assets - Accrual Basis	\$571,382,451	\$570,792,030

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2011		\$571,382,451
Contributions Toward Pension Liability		
- Policemen's	\$25,581,920	
- Firemen's	23,013,090	
- Municipal	<u>15,527,698</u>	\$ 64,122,708
Miscellaneous and Pass Through Items		4,418,518
Interest and Dividends		5,241,252
Net Appreciation (Decline) in Fair Value Of Investments		9,622,836
Payments to Participants		
- Policemen's	\$ 32,545,291	
- Firemen's	28,200,726	
- Municipal	<u>21,133,734</u>	(81,879,751)
Expenses		<u>(2,115,984)</u>
Balance as of December 31, 2011		\$570,792,030

Undivided Participation Calculation Calendar Year 2011 - Accrual Basis

	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
January 1, 2011 Market Value	\$216,050,208	\$188,721,694	\$ 166,610,549	\$571,382,451
Plan-Specific Contributions	26,885,936	23,384,367	17,372,712	67,643,014
Plan-Specific Distributions	<u>(32,873,373)</u>	<u>(28,393,023)</u>	<u>(21,420,864)</u>	<u>(82,687,260)</u>
Sub-Total	\$210,062,771	\$183,713,038	\$ 162,562,397	\$556,338,205
Sub-Total Percentages	37.76%	33.02%	29.22%	100.00%
Allocated Expenses	(494,080)	(432,058)	(382,336)	(1,308,475)
Allocated Investment Earnings	<u>5,951,844</u>	<u>5,204,711</u>	<u>4,605,745</u>	<u>15,762,300</u>
December 31, 2011 Market Value	\$215,520,534	\$188,485,691	\$166,785,805	\$570,792,030

Contributions and Distributions for 2011 - Accrual Basis

	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
Plan-Specific Contributions				
General Municipal				
Pension System State Aid	\$ 11,402,091	\$ 9,106,716	\$ 6,398,832	\$26,907,639
Member Contributions	3,591,870	3,562,550	3,196,201	10,350,620
City Contributions	10,587,959	8,440,820	5,932,666	24,961,445
Wilkinsburg Fire Transfer	0	1,903,004	0	1,903,004
Pass Through Contributions	1,304,016	361,800	1,772,618	3,438,434
Miscellaneous Income	<u>0</u>	<u>9,477</u>	<u>72,395</u>	<u>81,872</u>
Total Contributions	\$26,885,936	\$23,384,367	\$17,372,712	\$67,643,014

Plan-Specific Distributions

Benefit Payments to Participants	\$32,297,162	\$28,159,257	\$20,562,562	\$81,018,981
Refunds to Participants	248,129	41,469	571,172	860,770
Administrative Expenses	<u>328,082</u>	<u>192,297</u>	<u>287,130</u>	<u>807,509</u>
Total Distributions	\$32,873,373	\$28,393,023	\$21,420,864	\$82,687,260

Combined Municipal Pension Trust Fund Calendar Year 2012

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. As directed by the Trustees of the City of Pittsburgh Comprehensive Municipal Pension Trust Fund, the values represent a combination of the assets listed in the City's 2012 Comprehensive Annual Financial Report (CAFR) and the present value calculated by Gleason and Associates of the dedicated stream of revenues created by City Ordinances 42 & 44 of 2010. Assets are shown at market value.

Summary of Values for the Aggregated Trust

	1/1/12	1/1/13
Invested Portfolio	\$ 325,275,669	\$ 355,308,381
Dedicated Funding from Parking Assets	246,267,849	252,251,944
Accrued Interest	506,858	534,057
Accrued Contributions		
Due From City of Pittsburgh	1,402,380	688,949
Accrued Expenses and Other Payables	<u>(2,660,726)</u>	<u>(2,660,148)</u>
Market Value of Assets – Accrual Basis	\$ 570,792,030	\$ 606,123,183

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2012		\$ 570,792,030
Contributions Toward Pension Liability		
-Policemen's	\$ 19,697,172	
-Firemen's	19,267,909	
-Municipal	<u>14,078,478</u>	\$ 53,043,559
Miscellaneous and Pass Through Items		3,506,306
Interest and Dividends		4,675,117
Net Appreciation (Decline) in Fair Value of Investments		59,319,524
Payments to Participants		
-Policemen's	\$ 32,627,580	
-Firemen's	28,849,451	
-Municipal	<u>21,573,218</u>	(83,050,249)
Expenses		<u>(2,163,104)</u>
Balance as of December 31, 2012		\$ 606,123,183

Undivided Participation Calculation Calendar Year 2012 - Accrual Basis

	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
January 1, 2012 Market Value	\$215,520,534	\$188,485,691	\$166,785,805	\$570,792,030
Plan-Specific Contributions	20,955,098	19,592,765	15,897,202	56,445,065
Plan-Specific Distributions	<u>(32,994,063)</u>	<u>(29,071,505)</u>	<u>(21,868,627)</u>	<u>(83,934,195)</u>
Sub-Total	\$203,481,569	\$179,006,951	\$160,814,380	\$543,302,900
Sub-Total Percentages	37.45%	32.95%	29.60%	100.00%
Allocated Expenses	(479,045)	(421,483)	(378,631)	(1,279,158)
Allocated Investment Earnings	<u>24,005,241</u>	<u>21,120,766</u>	<u>18,973,434</u>	<u>64,099,441</u>
December 31, 2012 Market Value	\$227,007,765	\$ 199,706,235	\$ 179,409,183	\$606,123,183

Contributions and Distributions for 2012 - Accrual Basis

Plan-Specific Contributions	<u>Policemen's</u>	<u>Firemen's</u>	<u>Municipal</u>	<u>Total</u>
General Municipal Pension System State Aid	\$ 6,383,196	\$ 6,203,826	\$ 4,320,825	\$16,907,847
Member Contributions	3,684,218	3,704,596	3,236,377	10,625,191
City Contributions	9,629,757	9,359,487	6,521,276	25,510,521
Pass Through Contributions	1,257,926	315,400	1,798,849	3,372,175
Miscellaneous Income	<u>0</u>	<u>9,456</u>	<u>19,875</u>	<u>29,331</u>
Total Contributions	\$20,955,098	\$19,592,765	\$15,897,202	\$56,445,065

Plan-Specific Distributions				
Benefit Payments to Participants	\$32,402,642	\$28,667,452	\$21,055,082	\$ 82,125,176
Refunds to Participants	224,938	181,999	518,136	925,073
Administrative Expenses	<u>366,483</u>	<u>222,054</u>	<u>295,409</u>	<u>883,946</u>
Total Distributions	\$32,994,063	\$29,071,505	\$21,868,627	\$83,934,195

Calculation of Actuarial Value of Assets

Description of Method

The Actuarial Value of Assets is determined by a Tabular Smoothing Method which takes the Actuarial Value of Assets from the prior valuation report and brings it forward using a specified interest rate. The Actuarial Value of Assets in the prior report, contributions by year, and annual disbursements are each credited with interest at a rate of one percent less than the prior valuation interest rate assumption. The resulting value is further subject to a minimum of 80 percent and a maximum of 120 percent of the market value of assets.

Development of the Actuarial Value of Assets

Market Value of Assets at January 1, 2013	\$179,409,183
Actuarial Value of Assets at January 1, 2011	\$187,041,985
Contributions During 2011	17,300,317
Disbursements During 2011	(21,803,200)
Interest Credited During 2011	<u>12,904,931</u>
Tabular Smoothing Value of Assets at January 1, 2012	\$195,444,032
Tabular Smoothing Value of Assets at January 1, 2012	\$195,444,032
Contributions During 2012	15,877,327
Disbursements During 2012	(22,247,258)
Interest Credited During 2012	<u>13,455,847</u>
Tabular Smoothing Value of Assets at January 1, 2013	\$202,529,949
Low Limit: 80% of Market Value	\$143,527,346
High Limit: 120% of Market Value	\$215,291,020
Actuarial Value of Assets at January 1, 2013	\$202,529,949

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

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

Assets Excluding Pension Bond Proceeds			
Assets Excluding Bond Proceeds at January 1, 2011			\$68,734,967
Receipts	2011	2012	
Employer Contributions	\$8,538,967	\$7,411,044	
Employee Contributions	3,196,201	3,236,377	
State Aid	6,398,832	4,320,825	
Investment Income	3,316,890	2,789,334	
Net Appreciation	(1,458,983)	4,800,740	
Pass Through Contributions & Misc. Income	<u>1,845,013</u>	<u>1,818,724</u>	
Total Receipts			46,213,964
Disbursements			
Monthly Benefit Payments	\$18,789,944	\$19,256,233	
Refund of Employee Contributions	571,172	518,136	
Administrative Expenses	607,855	549,045	
Pass Through Payments	<u>1,772,618</u>	<u>1,798,849</u>	
Total Disbursements			(43,863,852)
Assets Excluding Bond Proceeds at January 1, 2013			\$ 71,085,079
Development of Actuarial Value of Assets Excluding Bond Proceeds			
Market Value of Assets Excluding Bond Proceeds at January 1, 2013			\$71,085,079
Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2011			70,099,618
Contributions During 2011			19,906,618
Disbursements During 2011			(21,741,589)
Interest Credited During 2011			<u>4,735,822</u>
Tabular Smoothing Value of Assets at January 1, 2012			\$73,000,468
Tabular Smoothing Value of Assets at January 1, 2012			\$73,000,468
Contributions During 2012			16,767,095
Disbursements During 2012			(22,122,263)
Interest Credited During 2012			<u>4,889,099</u>
Tabular Smoothing Value of Assets at January 1, 2013			\$72,534,399
Low Limit: 80% of Market Value			\$56,868,063
High Limit: 120% of Market Value			\$85,302,095
Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2013			\$72,534,399
Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds			
Actuarial Accrued Liability (Table 1)			\$324,697,069
Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2013			<u>(72,534,399)</u>
Adjusted Unfunded Actuarial Accrued Liability			\$252,162,670

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

Reconciliation of Funded Status

Unfunded Actuarial Accrued Liability as of January 1, 2011			\$212,583,477
	2011	2012	
Normal Cost/Administrative Expenses Assumed	\$5,736,167	\$5,928,145	11,664,312
Interest Charged at Valuation Rate			36,802,641
Contributions Made			
- Municipality	\$8,538,967	\$7,411,044	
- State Aid Allocated	6,398,832	4,320,825	
- Employees	<u>3,196,201</u>	<u>3,236,377</u>	(33,102,245)
Interest Credited At Valuation Rate			(2,767,443)
Special Adjustment Because of Higher Act 82 Interest Rate			<u>(11,307,666)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$213,873,077
Experience from Investment Return			
- Comparative Interest Rate Amortization Tab. (Gain) Loss		\$15,868,690	
- Other Investment Return (Gain) Loss		<u>(3,374,246)</u>	12,494,444
Experience (Gain) Loss from all Other Sources			(5,777,137)
Increase (Decrease) in Unfunded Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$0	
- Benefit Modifications for Retirees		0	
- Change in Actuarial Assumption		<u>31,572,286</u>	<u>31,572,286</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$252,162,670</u>

Loss (Gain) to be Amortized

Experience (Gain) Loss from January 1, 2011		\$6,717,307
Actuarially Required Contributions and Bond Proceeds w/Interest	\$27,518,211	
Actual Contributions with Interest	<u>(35,869,688)</u>	
Contribution (Gain) Loss		<u>(8,351,476)</u>
Loss (Gain) to be Amortized		\$ (1,634,169)

Comparative Interest Rate Amortization Tabulation

<i>Balance Calculated Using Actual Investment Return</i>	2011	2012	
Act 82 Amortization Balance at January 1	\$246,044,866	\$262,315,844	
Act 82 Amortization Payment	<u>9,121,224</u>	<u>9,121,224</u>	
Comparative Interest Rate Balance at January 1	\$255,166,090	\$271,437,069	
Actual Investment Return on Balance	<u>7,149,754</u>	<u>31,478,557</u>	
Actual Act 82 Amort. Balance at December 31	\$262,315,844	\$302,915,626	\$302,915,626
<i>Balance Calculated Using 10 Percent Investment Return</i>			
Comparative Interest Rate Balance at January 1	\$255,166,090	\$289,803,924	
Interest at 10 Percent	<u>25,516,609</u>	<u>28,980,392</u>	
Comparative Act 82 Amort. Bal. at December 31	\$280,682,699	\$318,784,316	\$318,784,316
<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>			\$15,868,690

Table 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	\$226,619,628	25	\$9,121,224
Assumption Change	\$(4,327,036)	1998	2017	\$(1,807,965)	5	\$(415,689)
Experience Loss	270,401	1999	2013	30,097	1	30,097
Experience Gain	(3,675,180)	2000	2014	(784,904)	2	(406,637)
Experience Loss	2,412,237	2001	2015	741,824	3	265,357
Ben. Mod. -Actives	15,075,742	2002	2021	9,734,027	9	1,419,512
Experience Loss	1,211,257	2002	2016	477,061	4	132,498
Investment Loss	3,463,728	2002	2032	2,940,673	20	268,332
Assumption Change	(5,300,394)	2003	2022	(3,665,731)	10	(496,786)
Ben. Mod. - Actives	6,262,573	2003	2022	4,331,169	10	586,968
Experience Loss	4,981,603	2003	2017	2,357,208	5	541,971
Investment Loss	2,634,424	2003	2032	2,315,462	20	211,283
Assumption Change	(55,417)	2005	2024	(42,861)	12	(5,154)
Ben. Mod – Actives	7,325,991	2005	2024	5,666,089	12	681,395
Experience Loss	6,389,402	2005	2019	3,922,287	7	688,864
Experience Gain	(798,334)	2007	2021	(585,227)	9	(85,344)
Assumption Change	15,074,490	2009	2028	13,590,127	16	1,382,921
Experience Loss	8,218,578	2009	2028	7,409,308	16	753,965
Experience Gain	(53,453,311)	2011	2030	(51,023,719)	18	(4,890,159)
Agg. Changes Through Last Valuation	N/A	N/A		\$(4,395,075)		\$663,394
Assumption Changes	\$31,572,286	2013	2027	\$31,572,286	15	\$3,327,197
Ben. Mod. - Actives	N/A					
Ben. Mod. - Ret.	N/A					
Experience Gain	(1,634,169)	2013	2032	(1,634,169)	20	(149,116)
Agg. Changes – 2013	N/A	N/A	2027	\$29,938,117	15	\$3,178,081
Aggregate Changes	N/A	N/A	2021	\$25,543,042	9	\$3,841,475
Aggregate	N/A	N/A		\$252,162,670		\$12,962,699

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. Under Act 205, a corridor limitation requires that this value be between 80 and 120 percent of the fair market value of the assets except for certain temporary periods for which an expanded corridor of between 70 and 130 percent of fair market value applies.

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.

