

PC-201C  
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 : P

**2013**

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

FILING DEADLINE: March 31, 2014

RECEIVED **PERC** APR - 2 2014

FRMTYPE	REVIEW	CODE	INPUT	EDR	LOG
C	Bsk 4/24	C		PW 4/24	PW 4/12

**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 <sup>st</sup> ) (4) |
| <input type="checkbox"/> Borough (3)         | <input type="checkbox"/> Township (2 <sup>nd</sup> ) (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 POLICEMEN'S RELIEF AND PENSION FUND (4)

B. Date on which pension plan was established ..... 09 / 01 / 1935 (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? .....	NO	(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? .....	NO	(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? .....	YES	(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 .....	883	(13)
2. Total annual payroll of active members as of above valuation date .....	\$ 68,561,656	(14)
3. Number of members terminated with vested or deferred benefit on valuation date .....	25	(15)
4. As of valuation date, number of persons receiving:		
a. Retirement benefits		
i. As normal retired members .....	644	(16i)
ii. As DROP participants .....	0	(16ii)
iii. Total .....	644	(16iii)
b. Disability benefits .....	360	(17)
c. Surviving spouse benefits .....	491	(18)
d. Surviving child benefits .....	1	(19)
e. Total (a+b+c+d) .....	1,496	(20)
5. As of valuation date, total annual benefits payable as:		
a. Retirement benefits		
i. To normal retired members .....	\$ 18,043,608	(21i)
ii. To DROP participants .....	\$ 0	(21ii)
iii. Total .....	\$ 18,043,608	(21iii)
b. Disability benefits .....	\$ 8,793,746	(22)
c. Surviving spouse benefits .....	\$ 4,254,474	(23)
d. Surviving child benefits .....	\$ 6,466	(24)
e. Total (a+b+c+d) .....	\$ 31,098,294	(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)

(Date)

(Name)

(Title)

(Telephone)

Debbie Lestitian

Acting Executive Director (412) 255-8955  
Acting Finance Director

**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>227,007,765</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>227,007,765</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>24,005,241</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>3,684,218</u> (30)
6. MUNICIPAL CONTRIBUTIONS to plan for the year ended on valuation date (6a + 6b) . . . . .	\$ <u>16,012,953</u> (31)
a. State Aid Portion \$ <u>6,383,196</u> b. Local Portion \$ <u>9,629,757</u>	
7. ACTUAL MUNICIPAL DEPOSIT for the year ended on the valuation date (6 + 7a - 7b) . . . . .	\$ <u>16,012,953</u> (32)
a. Contributions Receivable at beginning of year \$ <u>0</u> b. Contributions Receivable at End of year \$ <u>0</u> <sup>1</sup>	
8. TOTAL MONTHLY BENEFIT PAYMENTS for the year ended on the above valuation date . . . . .	\$ <u>31,144,716</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>845,528</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>11,598,575</u> (36)

<sup>1</sup> 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)

(412) 255-8955  
(Telephone)

Acting Finance Director

**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 . . . . .	\$ <u>511,782,233</u> (40)
2. ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COST as of valuation date . . . . .	\$ <u>71,760,340</u> (41)
3. ACTUARIAL ACCRUED LIABILITY as of valuation date . . . . .	\$ <u>440,021,893</u> (42)
4. ACTUARIAL VALUE OF ASSETS, including aggregate insurance/annuity cash surrender value, as of valuation date . . . . .	\$ <u>248,871,901</u> (43)
5. UNFUNDED ACTUARIAL ACCRUED LIABILITY as of valuation date (+ or -) . . . . .	\$ <u>191,149,992</u> (44)
6. NORMAL COST (employer & employee), <i>excluding administrative expenses</i> , payable as of valuation date for the plan year beginning on valuation date:	
a. As a dollar amount . . . . .	\$ <u>8,001,980</u> (45)
b. As a percentage of total annual payroll . . . . .	<u>11.671</u> % (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 <sup>1</sup> . . . . .	\$ <u>822,740</u> (47)
8. ANNUAL COVERED PAYROLL of active members as of valuation date . . . . .	\$ <u>68,561,656</u> (48)
9. AMORTIZATION CONTRIBUTIONS	
a. For amortization of initial unfunded actuarial accrued liability established 1/1/85. <sup>2</sup>	
1) Amortization period remaining (years) . . . . .	<u>25</u> (49)
2) Amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date . . . . .	\$ <u>7,746,181</u> (50)
3) Amortization contribution calculated as a level percentage of payroll for the plan year beginning on valuation date <sup>3</sup> . . . . .	\$ <u>N/A</u> (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. <sup>2</sup>	
1) Aggregated amortization period (years) . . . . .	<u>N/A</u> (52)
2) Aggregated amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date . . . . .	\$ <u>2,684,859</u> (53)
c. Modified Total Amortization Requirement <sup>4</sup> . . . . .	\$ <u>N/A</u> (54)
d. Total Amortization Requirement (Item 50 + Item 53 or Item 51 + Item 53 or Item 54, whichever is applicable) . . . . .	\$ <u>10,431,040</u> (55)
10. ACTUAL OR ESTIMATED MEMBER CONTRIBUTIONS to the pension plan for the year beginning on the valuation date . . . . .	\$ <u>3,684,218</u> (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)

<sup>1</sup> 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.

<sup>2</sup> 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.

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

<sup>4</sup> 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.

- Item No.
1. MAJOR ECONOMIC ACTUARIAL ASSUMPTIONS
- a. Interest or investment earnings rate ..... 7.50 ..... % (68)
- b. Salary projection ..... 4.50 ..... % (69)
2. ADMINISTRATIVE ARRANGEMENT (Enter corresponding number. ⇨ ) ..... 1 ..... (70)
- |  |   |
|--|---|
| <p><input type="checkbox"/> 1 - Self administered fund</p> <p><input type="checkbox"/> 2 - Bank or other trust fund</p> <p><input type="checkbox"/> 3 - Split-funded plan - Insurance plus side fund</p> | <p><input type="checkbox"/> 4 - Insured deposit administration contract</p> <p><input type="checkbox"/> 5 - Immediate participation guarantee contract</p> <p><input type="checkbox"/> 6 - Pennsylvania Municipal Retirement System</p> |
|--|---|
- ☐ 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 (72)  
(Telephone)

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 Lestitian  
(Name of Chief Administrative Officer) (Print or type)

(412) 255-8955  
(Telephone)

debbie.lestitian@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](mailto: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	Retirement 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	Retirement 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** JANUARY 1, 2013 CITY OF PITTSBURGH ALLEGHENY  
Page 2 of 2 (Valuation Date) (Municipality) (County)

**Part III - Active Member Data <sup>1</sup>** - ☐ 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				

<sup>1</sup> Plans with active members of 50 or more must e-mail an Excel spreadsheet containing the specified active member data to the Commission at [pero@state.pa.us](mailto:pero@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.
<b>A. Assets:</b>			
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>ALLOCATION OF AGGREGATE TRUST</u> .....	\$ 227,007,765	\$ 215,520,534	(13)
.....	\$	\$	(14)
6. Insurance/Annuity Cash Surrender Value (Individual Policies) ..	\$	\$	(15)
Total Fund Assets .....	\$ 227,007,765	\$ 215,520,534	(16)
<b>B. Current Liabilities:</b>			
1. Accounts Payable and Accrued Administrative Expenses .....	\$	\$	(17)
2. Other Current Liabilities			
Benefits Payable .....	\$	\$	(18)
Other .....	\$	\$	(19)
.....	\$	\$	(20)
Total Current Liabilities .....	\$ 0	\$ 0	(21)
C. Net Assets Available for Benefits (Market Value) as of valuation date ..	\$ 227,007,765	\$ 215,520,534	(22)

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

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

	<u>As of the Above Valuation Date</u>	<u>As of the Previous Year (2012)</u>	Item No.
A. Net Assets at Beginning of Year (Market Value) .....	\$ 215,520,534	\$ 216,050,208	(1)
B. Gross Revenues (unreduced by any fees, costs or expenses):			
Member Contributions .....	\$ 3,684,218	\$ 3,591,870	(2)
Total Municipal Contributions			
a. State Aid Portion .....	\$ 6,383,196	\$ 11,402,091	(3)
b. Local Portion .....	\$ 9,629,757	\$ 10,587,959	(4)
Interest Earnings/Dividend Income .....	\$ 1,790,079	\$ 2,318,261	(5)
Realized/Unrealized Capital Gains/Losses .....	\$ 22,215,162	\$ 3,633,583	(6)
Other Revenues or Credits (Specify)			
PASS THROUGH CONTRIBUTIONS .....	\$ 1,257,926	\$ 1,304,016	(7)
.....	\$	\$	(8)
.....	\$	\$	(9)
Total Revenues .....	\$ 44,960,338	\$ 32,837,780	(10)
C. Expenses			
Total Benefit Payments (Lump-Sum) .....	\$ 0	\$ 0	(11)
Total Benefit Payments (Monthly) .....	\$ 31,144,716	\$ 30,993,146	(12)
Annuity Purchases (Lump-Sum) .....	\$ 0	\$ 0	(13)
Insurance Premiums .....	\$ 0	\$ 0	(14)
Refund of Member Contributions .....	\$ 224,938	\$ 248,129	(15)
Lump-Sum Drop Account Payments .....	\$ 0	\$ 0	(16)
Actuarial Costs .....	\$ 33,301	\$ 46,009	(17)
Investment Costs .....	\$ 265,294	\$ 135,577	(18)
All Other Expenses or Debits (Specify)			
PASS THROUGH PAYMENTS .....	\$ 1,257,926	\$ 1,304,016	(19)
OTHER ADMINISTRATIVE EXPENSES .....	\$ 546,933	\$ 640,576	(20)
Total Expenses .....	\$ 33,473,108	\$ 33,367,453	(21)
D. Net Assets at End of Year (Market Value) .....	\$ 227,007,765	\$ 215,520,534	(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.

<b>A. IDENTIFICATION OF THE ACTUARIAL VALUATION REPORT (AVR)</b>			
used to determine funding requirement. (Enter valuation date - 2011 or earlier year.)		<u>01</u> / <u>01</u> / <u>2011</u>	
		Mo. Da. Yr.	(1)
<b>B. DEVELOPMENT OF MINIMUM MUNICIPAL OBLIGATION under Section 302(c) of Act 205 of 1984.</b> (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	\$	<u>59,182,803</u>	(2)
2. TOTAL NORMAL COST, expressed as a percentage of total annual payroll, derived from actuarial valuation report identified in item 1		<u>10.650%</u>	(3)
3. TOTAL PROJECTED NORMAL COST for year ended on valuation date (Item 2 x Item 3)	\$	<u>6,302,969</u>	(4)
4. TOTAL AMORTIZATION REQUIREMENT for year ended on valuation date <sup>1</sup>	\$	<u>7,667,320</u>	(5)
5. TOTAL ADMINISTRATIVE EXPENSES projected for year ended on valuation date	\$	<u>710,194</u>	(6)
6. TOTAL FINANCIAL REQUIREMENTS (Item 4 + Item 5 + Item 6)	\$	<u>14,680,483</u>	(7)
7. MEMBER CONTRIBUTIONS projected for year ended on valuation date	\$	<u>3,081,908</u>	(8)
8. FUNDING ADJUSTMENT determined pursuant to Section 302(c)(2) of Act 205 of 1984 for year ended on valuation date <sup>2</sup>	\$	<u>0</u>	(9)
9. MINIMUM MUNICIPAL OBLIGATION (MMO) for year ended on valuation date (Item 7 - Item 8 - Item 9)	\$	<u>11,598,575</u>	(10)
10. DELINQUENT MMO PLUS INTEREST from plan year beginning in 2011	\$	<u>0</u>	(11)
11. TOTAL MMO for year ended on valuation date (Item 10 + Item 11)	\$	<u>11,598,575</u>	(12)
<b>C. AMORTIZATION CONTRIBUTION REDUCTION (Complete if Amortization Contribution Reduction was elected pursuant to Section 607(H.1) of Act 205.)</b>			
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)

<sup>1</sup> 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.

<sup>2</sup> 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.
<b>A. IDENTIFICATION OF THE ACTUARIAL VALUATION REPORT (AVR)</b>		
used to determine funding requirement. (Enter valuation date - 2009 or earlier year.)	01 / 01 / 2009 Mo. Da. Yr.	(1)
<b>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.)</b> <input type="checkbox"/>		
1. TOTAL ANNUAL PAYROLL projected for year ended on valuation date	\$ 58,161,381	(2)
2. TOTAL NORMAL COST, expressed as a percentage of total annual payroll, derived from actuarial valuation report identified in Item 1	11.921 %	(3)
3. TOTAL PROJECTED NORMAL COST for year ended on valuation date (Item 2 x Item 3)	\$ 6,933,418	(4)
4. TOTAL AMORTIZATION REQUIREMENT for year ended on valuation date <sup>1</sup>	\$ 19,754,275	(5)
5. TOTAL ADMINISTRATIVE EXPENSES projected for year ended on valuation date	\$ 988,743	(6)
6. TOTAL FINANCIAL REQUIREMENTS (Item 4 + Item 5 + Item 6)	\$ 27,676,436	(7)
7. MEMBER CONTRIBUTIONS projected for year ended on valuation date	\$ 3,035,240	(8)
8. FUNDING ADJUSTMENT determined pursuant to Section 302(c)(2) of Act 205 of 1984 for year ended on valuation date <sup>2</sup>	\$ 0	(9)
9. MINIMUM MUNICIPAL OBLIGATION (MMO) for year ended on valuation date (Item 7 - Item 8 - Item 9)	\$ 24,641,196	(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)	\$ 24,641,196	(12)
<b>C. AMORTIZATION CONTRIBUTION REDUCTION (Complete if Amortization Contribution Reduction was elected pursuant to Section 607(H.1) of Act 205.)</b>		
1. REDUCTION OF AMORTIZATION CONTRIBUTION (Maximum is 25% of Item 5.)	\$ 4,938,569	(13)
2. RE-CALCULATED MMO for year ended on valuation date (Item 12 - Item 13)	\$ 19,702,627	(14)

<sup>1</sup> 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.

<sup>2</sup> 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 <sup>1</sup> 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) <sup>Time in months</sup> ) . . . . .	\$	\$	(4)
E) Minimum Municipal Obligation . . . . .	\$	\$	(5)
F) Total Minimum Municipal Obligation (D + E) . . . . .	\$	\$	(6)
G) Amount Deposited <sup>2</sup> . . . . .	\$	\$	(7)
H) Funding Deficiency . . . . .	\$	\$	(8)

<sup>1</sup> Development of the MMOs must include the reported funding deficiency with interest.

<sup>2</sup> 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	\$ 172,847,750	(1)
2. Disability Benefits	\$ 49,253,032	(2)
3. Survivor Benefits	\$ 0	(3)
4. Liability for the Refund of Member Contributions	\$ 1,651,774	(4)
5. Vested Withdrawal Benefits	\$ 2,074,388	(5)
6. Other (Specify) <u>PRE-RETIREMENT DEATH BENEFITS</u>	\$ 1,869,905	(6)
Subtotal for Active Members	\$ 227,696,849	(7)

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

1. Deferred Vested Benefits	\$ 7,340,544	(8)
2. Retirement Benefits	\$ 160,080,319	(9)
3. Disability Benefits	\$ 85,307,653	(10)
4. Survivor Benefits	\$ 31,356,868	(11)
5. Total Monies Accumulated in DROP Participant Accounts	\$ 0	(12)
6. Other (Specify) _____	\$ 0	(13)
Subtotal for Non-Active Members and Benefit Recipients	\$ 284,085,384	(14)

C. Total Actuarial Present Value of Future Benefits (Without adjustments)	\$ 511,782,233	(15)
D. Total Adjustments for Ancillary Benefits Valued through Approximation Techniques <sup>1</sup>	\$ 0	(16)
E. Total Actuarial Present Value of Future Benefits (Item 15 + Item 16)	\$ 511,782,233	(17)

<sup>1</sup> 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 <sup>1</sup>
\$ 131,617,548	1998	2037	40	\$ 192,456,254	\$ 7,746,181 (1)

**Part B - Changes in Unfunded Actuarial Accrued Liability since the last actuarial valuation report prepared and submitted under Act 205.<sup>2</sup>**

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	41,759,441	2013	2027	15	4,400,755
Actuarial Losses (-) or Gains (-)	-11,222,672 <sup>3</sup>	2013	2032	20	-1,024,053
Post-Retirement Adjustments	N/A	N/A	N/A	N/A	N/A
Total	\$ 30,536,769	XXXXXX	XXXXXX	XXXXXX	\$ 3,376,702 (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)	\$ -31,843,031	2011	N/A	N/A	\$ -691,843 (3)
Aggregation of all changes (include changes in Section B)	\$ -1,306,262	Current Valuation Date	N/A	N/A	\$ 2,684,859 (4)

<sup>1</sup> 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.

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

<sup>3</sup> 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)

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**Section III - Presentation of Actuarial Assumptions and Methods**

---

**A. Actuarial Assumptions**

1. Interest Rate -

SEE ATTACHED

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/RET/DV.  
\_\_\_\_\_  
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 (iAvr)  
\_\_\_\_\_  
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 (iAvr)  
\_\_\_\_\_  
Actuary's Initials

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## Attachment to Schedule C, Section III

**Actuarial Basis of Valuation****Economic**

Interest Rate	7.50% increase per year
Salary Projection	4.50% increase per year
	Merit and Longevity Increases: 1.50 percent per year
	Inflation: 3.0 percent increase per year

**Employee Characteristics**

Mortality: RP-2000 Mortality Tables, with adjustments to reflect Pension Plan mortality experience as confirmed by experience studies. The adjusted rates are based upon the following:

*Active Participants* RP-2000 Employee Mortality 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* Same as Retired, but with ages set forward four years.

*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%	0.52%	0.20%
55	0.30%	0.77%	0.97%	0.86%
65	0.76%	1.82%	2.44%	1.91%
75	N/A	4.77%	6.41%	4.51%
85	N/A	12.64%	16.64%	12.81%

Age	Active Female Participant	Female Regular Retiree	Female Disabled Retiree	Female Beneficiary
45	0.11%	0.15%	0.22%	0.15%
55	0.25%	0.32%	0.55%	0.55%
65	0.58%	1.25%	1.68%	1.47%
75	N/A	3.38%	4.44%	3.31%
85	N/A	9.23%	12.48%	9.01%

## Attachment to Schedule C, Section III - Continued

### Withdrawal

Rates at Sample Ages:

Age	Years of Service				
	0-2	3	4	5	6+
20	4.08%	3.57%	3.06%	2.55%	2.04%
25	3.97%	3.47%	2.98%	2.48%	1.98%
30	3.80%	3.33%	2.85%	2.38%	1.90%
35	3.52%	3.08%	2.64%	2.20%	1.76%
40	2.63%	2.30%	1.97%	1.64%	1.31%
45	1.33%	1.16%	0.99%	0.83%	0.66%
50	0.30%	0.27%	0.23%	0.19%	0.15%
55	0.00%	0.00%	0.00%	0.00%	0.00%

### Disablement

Sample rates:

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

### Retirement Age

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

Age	Percentage
50	20
51	20
52	12
53	12
54	10
55	10
56	10
57	10
58	10
59	10
60	10
61	10
62	10
63	10
64	10
65	100

### Duty Related Mortality

20% of deaths in active service are assumed to be duty related.

### Duty Related Disability

50% of disabilities occurring during employment are assumed to occur in the line of duty.

## Attachment to Schedule C, Section III – Continued

Percentage Married  
participants

80% of male participants and 65% of female

Spouse Age

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

### 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>	▼ September 1, 1935
<b>Principal Definitions</b>	
<i>Employee</i>	▼ Any person employed by the City of Pittsburgh Bureau of Police, including all substitute uniformed employees of the Bureau.
<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 \$20 for each completed year of service between 20 and 25 years, plus \$25 for each year of service in excess of 25 years
<i>Service</i>	▼ Assumed to be completed years of service calculated from date of hire through date of retirement or severance, plus periods of service purchased
<i>Normal Form of Payment</i>	▼ Monthly pension benefit payable for life
<b>Participation Requirements</b>	
<i>Entry Date</i>	▼ Date of hire
<b>Compensation</b>	▼ Base wages and longevity pay
<i>Average Compensation</i>	▼ Compensation averaged over the 12-month period prior to retirement or severance.
<i>Members hired after December 31, 1991</i>	▼ Compensation averaged over 36 months prior to retirement or severance.
<b>Normal Retirement</b>	
<i>Eligibility</i>	▼ Later of age 50 or Completion of 20 years of service
<i>Monthly Benefit</i>	▼ Equal to 50% of average compensation plus service increment if any



## Attachment to Schedule C, Section IV – Continued

### Disability

#### *Eligibility*

- ▼ Permanent disablement in line of duty *or*
- ▼ Permanent disablement (not in line of duty) after completing 10 years of service

#### *Benefit Amount*

- ▼ 50% of earnings in year prior to disablement

#### *Members Hired after December 31, 1991*

- ▼ Sum of this benefit and member's workers' compensation benefit shall not exceed member's regular salary at time of disablement

#### *Benefit Commencement Date*

- ▼ First day of calendar month following determination of disablement *and*
- ▼ Continuing for the duration of disability prior to normal retirement date and life thereafter

### Vesting

- ▼ If member completed 20 years of service, may collect normal retirement benefit based on average compensation at termination (providing terminated member continues contributions at rate in effect at termination)
- ▼ Benefit deferred to age 50

#### *Terminated Participants*

- ▼ If contributions continue at same rate in effect at termination and continue to age 50, member may receive monthly benefit based on rate of pay in effect had officer worked until age 50

### Death Benefits

#### *Accidental Death*

- ▼ Benefit plus return of member's accumulated contributions
- ▼ Benefit plus workers' compensation or other payments equal to 50% of member's wages at death
- ▼ Payable for 500 weeks or until surviving spouse dies
- ▼ If no surviving spouse or unmarried children, dependent parents receive payments

#### *- Children Benefits*

*(No surviving spouse/ or discontinued payment to surviving spouse)*

- ▼ Unmarried child under age 18 receives payments equal to 25% of payments to spouse

## Attachment to Schedule C, Section IV – Continued

### *- Children Benefits (Cont'd)*

- ▼ Total payments to one family may not exceed 50% of member's wages at time of death
- ▼ \$60 minimum monthly payment if only one child
- ▼ If maximum amount payable, divide equally among entitled children
- ▼ Payments terminate when child reaches age 18, dies, marries
- ▼ Payments may continue indefinitely to incompetent child

### *Death Prior to Retirement Active service/ not accidental*

- ▼ If so elected, spouse paid benefit equal to 50% of pension member would have received if retired on date of death
- ▼ No election, accumulated contributions without interest paid to beneficiary or estate

### *Death After Retirement*

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

### **Employee Contributions**

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

### *Refund*

- ▼ Accumulated contributions without interest

## Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: POLICEMEN'S 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.....  | \$ | 440,021,893 | (E1)  |
| (Enter amount reported in item 42 on page 4 of the reporting form.)   |    |             |       |
| 2. TOTAL FUND ASSETS  |    |             |       |
| a. Market Value of Assets <sup>1</sup> .....  | \$ | 124,155,473 | (E2)  |
| b. Actuarial Value of Assets reported in Item 2a above .....  | \$ | 124,611,822 | (E3)  |
| 3. UNFUNDED ACTUARIAL ACCRUED LIABILITY as of valuation date (+ or -)....   | \$ | 315,410,071 | (E4)  |
| (Item 1 minus Item 2b)  |    |             |       |
| 4. AMORTIZATION CONTRIBUTIONS   |    |             |       |
| a. For amortization of initial unfunded actuarial accrued liability established 1/1/85. <sup>2</sup>  |    |             |       |
| 1) Amortization period remaining (years) .....  |    | 25          | (E5)  |
| 2) Amortization contribution calculated as a level dollar amount for the plan year beginning on valuation date. ....  | \$ | 14,773,769  | (E6)  |
| 3) Amortization contribution calculated as a level percentage of payroll for the plan year beginning on valuation date <sup>3</sup> .....                         | \$ | 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. <sup>2</sup> |    |             |       |
| 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. ....                                   | \$ | -2,405,466  | (E9)  |
| c. Modified Total Amortization Requirement <sup>4</sup> .....   | \$ | N/A         | (E10) |
| d. Total Amortization Requirement (Item E6 + E9 or Item E7 + E9 or Item E10, whichever is applicable) .....   | \$ | 12,368,303  | (E11) |

<sup>1</sup> 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.

<sup>2</sup> 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.

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

<sup>4</sup> 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: POLICEMEN'S 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 <sup>1</sup>	Date of Contribution	Modified Aggregated Amortization Contribution Target Date <sup>2</sup> (MO/DA/YR)	Modified Aggregated Amortization Period Initially Established <sup>2</sup> (Years)	Modified Aggregated Amortization Period Remaining (Years)
1.	\$ 119,407,735	03/10/1998	03/10/2037	40	25
2.	\$				
3.	\$				
4.	\$				
5.	\$				
6.	\$				
7.	\$				
8.	\$				
9.	\$				
10.	\$				

<sup>1</sup> 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.

<sup>2</sup> 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	7,007,169
Prin	3,716,190
Total \$	10,723,359

# Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: POLICEMEN'S 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 <sup>1</sup>
\$ 251,025,283	1998	2037	40	\$ 367,058,847	\$ 14,773,769 (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	41,759,441	2013	2027	15	4,400,755
Actuarial Losses (+) or Gains (-)	-7,566,281	2013	2032	20	-690,412
Post-Retirement Adjustments	N/A	N/A	N/A	N/A	N/A
Total	\$ 34,193,160	XXXXXX	XXXXXX	XXXXXX	\$ 3,710,343 (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)	\$ -85,841,936	2011	2066	54	-6,115,809 (E13)
Aggregation of all changes (include changes in Section B)	\$ -51,648,776 <sup>2</sup>	Current Valuation Date			\$ -2,405,466 (E14)

<sup>1</sup> 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.

<sup>2</sup> 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: POLICEMEN'S 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)	\$ 120,512,415.10 (B)	47.6 % (B÷A)	N/A

Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1. 1998	\$ -	\$ 3,921,658.75	\$ -	\$120,512,415.10
2. 1999	471,000.00	7,830,011.75	-	120,512,415.10
3. 2000	471,000.00	7,803,518.00	-	120,041,415.10
4. 2001	471,000.00	7,776,882.95	-	119,570,415.10
5. 2002	471,000.00	7,749,753.35	-	119,099,415.10
6. 2003	471,000.00	7,722,411.80	-	118,628,415.10
7. 2004	471,000.00	7,694,787.65	-	118,157,415.10
8. 2005	1,179,855.01	7,645,426.83	-	117,686,415.10
9. 2006	1,092,720.01	7,576,976.41	-	116,506,560.09
10. 2007	1,158,660.01	7,508,582.50	-	115,413,840.08
11. 2008	1,208,115.01	7,436,244.85	-	114,255,180.07
12. 2009	1,304,670.00	7,353,582.89	-	113,047,065.06
13. 2010	1,417,710.00	7,263,616.00	-	111,742,395.06
14. 2011	1,521,330.00	7,171,771.00	-	110,324,685.06
15. 2012	3,716,190.01	7,007,169.44	-	108,803,355.06
16. 2013	5,173,935.00	6,725,837.03	-	105,087,165.05
17. 2014	5,505,990.01	6,382,619.91	-	99,913,230.05
18. 2015	5,988,765.01	6,009,040.37	-	94,407,240.04
19. 2016	6,386,760.00	5,606,835.82	-	88,418,475.03
20. 2017	8,593,395.01	5,119,980.78	-	82,031,715.03

(Continue on additional pages, if necessary.)

(CONTINUED FROM PAGE 4 OF 6)

	Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1	2018	\$ 6,233,685.01	\$ 4,638,100.67	\$ -	\$ 73,438,320.02
2	2019	9,434,130.01	4,124,179.63	-	67,204,635.01
3	2020	10,079,400.01	3,480,233.14	-	57,770,505.00
4	2021	10,767,060.01	2,792,299.96	-	47,691,104.99
5	2022	11,504,175.00	2,057,349.21	-	36,924,044.98
6	2023	12,290,744.99	1,272,116.86	-	25,419,869.98
7	2024	13,129,124.99	433,261.15	-	13,129,124.99
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(Continue on additional pages, if necessary.)





## Exhibit I

Actuarial Data as of JANUARY 1, 2013. For: POLICEMEN'S 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 <sup>1</sup>..... \$ 216,050,208

RECEIPTS:

Employer Contributions. .... \$ 20,217,716

Employee Contributions. .... \$ 7,276,088

State Aid. .... \$ 17,785,287

Supplemental State Assistance. .... \$ 0

Investment Income. .... \$ 4,108,340

Net Change in Market Value..... \$ 25,848,745

Other Receipts (Identify)..... \$ 2,561,942

TOTAL RECEIPTS..... \$ 77,798,118

DISBURSEMENTS:

Monthly Benefit Payments. .... \$ 62,137,862

Refund of Employee Contributions..... \$ 473,067

Administrative Expenses..... \$ 1,667,690

Other Disbursements (Identify)..... \$ 2,561,942

TOTAL DISBURSEMENTS..... \$ 66,840,561

TOTAL FUND ASSETS AT JANUARY 1, 2013 <sup>2</sup>..... \$ 227,007,765

<sup>1</sup> 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.

<sup>2</sup> 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: POLICEMEN'S 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 <sup>1</sup> ..... \$ 126,318,129

#### RECEIPTS:

Employer Contributions <sup>2</sup> ..... \$ 20,217,716

Employee Contributions..... \$ 7,276,088

State Aid..... \$ 17,785,287

Supplemental State Assistance..... \$ 0

Investment Income <sup>3</sup> ..... \$ 10,897,063

Net Change in Market Value <sup>4</sup> ..... \$ 5,765,780

Other Receipts (Identify)..... \$ 2,561,942

TOTAL RECEIPTS..... \$ 64,503,876

#### DISBURSEMENTS:

Monthly Benefit Payments..... \$ 62,137,862

Refund of Employee Contributions..... \$ 473,067

Administrative Expenses <sup>5</sup> ..... \$ 1,493,661

Other Disbursements (Identify)..... \$ 2,561,942

TOTAL DISBURSEMENTS..... \$ 66,666,532

TOTAL FUND ASSETS AT JANUARY 1, 2013 <sup>6</sup> ..... \$ 124,155,473

<sup>1</sup> 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.

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

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

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

<sup>5</sup> Investment expenses attributable to bond issue proceeds should be excluded from this amount.

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



APR - 2 2014

# **ACTUARIAL VALUATION REPORT**

*for the*

**City of Pittsburgh**

**Policemen's Relief and Pension Fund**

*as of*

**January 1, 2013**

**Report Date: March 28, 2014**

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## Section One: Commentary and Actuarial Disclosures

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At the request of the City of Pittsburgh, we have completed an actuarial valuation report for the City of Pittsburgh Policemen's Relief and Pension Fund as of January 1, 2013. This actuarial valuation is based upon participant data as of January 1, 2013 and 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 Policemen's Relief and Pension Fund is \$227,007,765. 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>	11.671%	10.650%
<i>Expenses as a Percentage of Total W-2 Payroll</i>	1.200%	1.200%
<i>Minimum Amortization Payment</i>	\$10,431,040	\$7,667,320

The change in actuarial costs from valuation to valuation can be affected by changes in Plan provisions, assumption changes, and experience changes. Pension bonds were issued in March 1998. The debt service payment for 2013 is approximately \$11.90 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 salary increase, mortality and employee turnover assumptions have been changed for this valuation. Refer to the 2013 Experience Study for a more detailed analysis of these changes.

The salary increase assumption was reduced from 5.0% to 4.5% per year. The employee turnover assumption was changed to reflect higher rates of withdrawal in the first five years of employment; the same rates were retained for once participants are beyond six years of employment but higher rates were added for the first five years of employment.

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	Same, but with one year set forward and projected from 2005 with Scale AA
Disabled Participants	Same as Retired, but with five year set forward	Same as Retired, but with four year set forward
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

The net effect of the interest rate, salary increase and mortality assumption changes was an increase in the actuarial accrued liability (AAL) of \$41,759,441. This amount will be amortized over 15 years.

## **Benefit Changes**

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 actuarial gain or loss computed in the current valuation reflects differences since the prior valuation between actual experience and the experience anticipated by the actuarial assumptions. For bases established in 2009 and later, Act 205 requires the amortization of actuarial gains or losses over a 20-year period. An actuarial gain will reduce the total amortization payment and an actuarial loss will increase the payment.

For 2013, a new experience gain base of \$11,222,672 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). An additional notable gain arose from salary increases for the two-year period that were, on average, less than the assumed 5.0% annual rate. Partially offsetting the contribution and salary 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 56.6 percent (refer to Table 1). As of January 1, 2011, the corresponding ratio was 60.2 percent so the current valuation shows a decrease of



3.6 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 51.6%.

### **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 \$131,617,548 as of January 1, 1998 to \$192,456,254 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, is larger than the total market value of assets. 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

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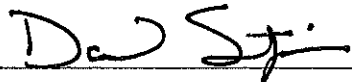
In the actuary's opinion, the actuarial assumptions used in the valuation are reasonably related to the experience of the Plan and to reasonable expectations. They represent the actuary's best estimate of anticipated experience under the Plan. To the best of our knowledge, the report is complete and 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	01/01/01	Change
Total Active	883	880	3
Vested	161	175	(14)
Not Vested	722	705	17
Total In Payment Status	1,496	1,534	(38)
Retirement Benefits	644	664	(20)
Disability Benefits	360	370	(10)
Survivor Benefits	492	500	(8)
Deferred	25	15	10
<b>Total</b>	<b>2,404</b>	<b>2,429</b>	<b>(25)</b>
<b>Average Monthly Benefit</b>			
<i>In Payment Status</i>			
Retirement Benefits	\$ 2,335	\$ 2,271	\$ 64
Disability Benefits	\$ 2,036	\$ 1,992	\$ 44
Survivor Benefits	\$ 722	\$ 689	\$ 33
Deferred	\$ 2,680	\$ 2,764	\$ (84)
<b>Active Participant Averages</b>			
Hire Age	28.8	28.8	0.0
Attained Age	43.8	43.2	0.6
Normal Retirement Age	52.2	52.0	0.2
Assumed Future Service	14.0	17.0	(3.0)
Monthly Compensation	\$5,238	\$5,146	\$92
<b>Financial Data</b>			
Market Value of Assets	\$ 227,007,765	\$216,050,208	\$ 10,957,557
Accumulated Employee Contributions	\$ 44,763,039	\$ 41,516,583	\$ 3,246,456
<b>Cost Components</b>			
Normal Cost as a percentage of total payroll	11.671%	10.650%	1.021%
Expenses as a percentage of total payroll	1.200%	1.200%	0.000%
Total	12.871%	11.850%	1.021%
Amortization payment	\$10,431,040	\$7,667,320	\$2,763,720

## Section Four: Summary of Plan Provisions

---

<i>Plan Year</i>	▼ Twelve-month period beginning January 1 and ending December 31
<i>Plan Established</i>	▼ September 1, 1935
<b>Principal Definitions</b>	
<i>Employee</i>	▼ Any person employed by the City of Pittsburgh Bureau of Police, including all substitute uniformed employees of the Bureau.
<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 \$20 for each completed year of service between 20 and 25 years, plus \$25 for each year of service in excess of 25 years
<i>Service</i>	▼ Assumed to be completed years of service calculated from date of hire through date of retirement or severance, plus periods of service purchased
<i>Normal Form of Payment</i>	▼ Monthly pension benefit payable for life
<b>Participation Requirements</b>	
<i>Entry Date</i>	▼ Date of hire
<b>Compensation</b>	▼ Base wages and longevity pay
<i>Average Compensation</i>	▼ Compensation averaged over the 12-month period prior to retirement or severance.
<i>Members hired after December 31, 1991</i>	▼ Compensation averaged over 36 months prior to retirement or severance.
<b>Normal Retirement</b>	
<i>Eligibility</i>	▼ Later of age 50 or Completion of 20 years of service
<i>Monthly Benefit</i>	▼ Equal to 50% of average compensation plus service increment if any

## **Disability**

### *Eligibility*

- ▼ Permanent disablement in line of duty *or*
- ▼ Permanent disablement (not in line of duty) after completing 10 years of service

### *Benefit Amount*

- ▼ 50% of earnings in year prior to disablement

### *Members Hired after December 31, 1991*

- ▼ Sum of this benefit and member's workers' compensation benefit shall not exceed member's regular salary at time of disablement

### *Benefit Commencement Date*

- ▼ First day of calendar month following determination of disablement *and*
- ▼ Continuing for the duration of disability prior to normal retirement date and life thereafter

## **Vesting**

- ▼ If member completed 20 years of service, may collect normal retirement benefit based on average compensation at termination (providing terminated member continues contributions at rate in effect at termination)

### *Terminated Participants*

- ▼ Benefit deferred to age 50
- ▼ If contributions continue at same rate in effect at termination and continue to age 50, member may receive monthly benefit based on rate of pay in effect had officer worked until age 50

## **Death Benefits**

### *Accidental Death*

- ▼ Benefit plus return of member's accumulated contributions
- ▼ Benefit plus workers' compensation or other payments equal to 50% of member's wages at death
- ▼ Payable for 500 weeks or until surviving spouse dies
- ▼ If no surviving spouse or unmarried children, dependent parents receive payments

### *- Children Benefits*

*(No surviving spouse/ or discontinued payment to surviving spouse)*

- ▼ Unmarried child under age 18 receives payments equal to 25% of payments to spouse

- *Children Benefits (Cont'd)*

- ▼ Total payments to one family may not exceed 50% of member's wages at time of death
- ▼ \$60 minimum monthly payment if only one child
- ▼ If maximum amount payable, divide equally among entitled children
- ▼ Payments terminate when child reaches age 18, dies, marries
- ▼ Payments may continue indefinitely to incompetent child

*Death Prior to Retirement*  
*Active service/ not accidental*

- ▼ If so elected, spouse paid benefit equal to 50% of pension member would have received if retired on date of death
- ▼ No election, accumulated contributions without interest paid to beneficiary or estate

*Death After Retirement*

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

**Employee Contributions**

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

*Refund*

- ▼ Accumulated contributions without interest

## Section Five: Development of Contribution Requirements

**Table 1: Normal Cost and Actuarial Accrued Liability**

<b>Normal Cost</b>				
Retirement Benefits				\$4,965,022
Disability Benefits				2,514,342
Preretirement Death Benefits				137,731
Postretirement Death Benefits				0
Refunds to Withdrawals				302,975
Medicare Premium Benefits				0
Vested Benefits				81,910
<b>Total</b>				<b>\$8,001,980</b>
<b>Actuarial Accrued Liability</b>				
<i>Actuarial Present Value of Benefits at Attained Age</i>				
	<u><b>Deferred</b></u>	<u><b>In Payment</b></u>	<u><b>Active</b></u>	<u><b>All</b></u>
Retirement Benefits	\$ 7,340,544	\$160,080,319	\$172,847,750	\$340,268,613
Disability Benefits	0	85,307,653	49,253,032	134,560,685
Survivor Benefits	0	31,356,868	0	31,356,868
Preretirement Death Benefits	0	0	1,869,905	1,869,905
Postretirement Death Benefits	0	0	0	0
Refunds to Withdrawals	0	0	1,651,774	1,651,774
Medicare Premium Benefits	0	0	0	0
Vested Benefits	0	0	2,074,388	2,074,388
<b>Total</b>	<b>\$7,340,544</b>	<b>\$276,744,840</b>	<b>\$227,696,849</b>	<b>\$511,782,233</b>
<i>Actuarial Present Value of Future Normal Costs</i>				
Retirement Benefits			\$44,801,035	
Disability Benefits			22,181,700	
Preretirement Death Benefits			1,191,037	
Postretirement Death Benefits			0	
Refunds to Withdrawals			2,745,996	
Medicare Premium Benefits			0	
Vested Benefits			840,572	
<b>Total</b>			<b>\$71,760,340</b>	<b>(\$71,760,340)</b>
<b>Actuarial Accrued Liability</b>				<b>\$440,021,893</b>
<b>Unfunded Actuarial Accrued Liability</b>				
Actuarial Accrued Liability				\$440,021,893
Actuarial Value of Assets				(248,871,901)
<b>Unfunded Actuarial Accrued Liability</b>				<b>\$191,149,992</b>
<b>Funded Ratio</b>				<b>56.6%</b>



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

Unfunded Actuarial Accrued Liability as of January 1, 2011			\$155,241,257
	<b>2011</b>	<b>2012</b>	
Normal Cost/Admin Expenses Assumed	\$7,966,359	\$8,344,640	16,310,999
Interest Charged at Valuation Rate			27,825,318
Contributions Made			
- Municipality	\$10,587,959	\$9,629,757	
- State Aid Allocated	11,402,091	6,383,196	
- Employees	<u>3,591,870</u>	<u>3,684,218</u>	\$(45,279,091)
Interest Credited at Valuation Rate			(4,143,371)
Special Adjustment Because of Higher Act 82 Interest Rate			<u>(9,603,012)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$140,352,100
Experience from Investment Return			
- Comparative Interest Rate Amortization Tab. (Gain) Loss		\$13,778,983	
- Other Investment Return (Gain) Loss		<u>704,973</u>	14,483,956
Experience (Gain) Loss from all Other Sources			(5,445,505)
Increase (Decrease) in Unfunded Actuarial Accrued Liability			
- Benefit Modifications for Actives		\$ 0	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>41,759,441</u>	<u>41,759,441</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$191,149,992</u>

**Loss (Gain) to be Amortized**

Experience (Gain) Loss from January 1, 2009		\$ 9,038,451
Actuarially Required Contributions and Bond Proceeds w/Interest	\$29,161,338	
Actual Contributions with Interest	<u>(49,422,461)</u>	
Contribution (Gain) Loss		<u>(20,261,123)</u>
Loss (Gain) to be Amortized		\$ (11,222,672)

**Comparative Interest Rate Amortization Tabulation**

<i>Balance Calculated Using Actual Investment Return</i>	<b>2011</b>	<b>2012</b>	
Act 82 Amortization Balance at January 1	\$208,953,099	\$222,760,359	
Act 82 Amortization Payment	<u>7,746,181</u>	<u>7,746,181</u>	
Comparative Interest Rate Balance at January 1	\$216,699,280	\$230,506,539	
Actual Investment Return on Balance	<u>6,061,079</u>	<u>26,441,405</u>	
Actual Act 82 Amort. Balance at December 31	\$222,760,359	\$256,947,944	\$256,947,944

<i>Balance Calculated Using 10 Percent Investment Return</i>			
Comparative Interest Rate Balance at January 1	\$216,699,280	\$246,115,388	
Interest at 10 Percent	<u>21,669,928</u>	<u>24,611,539</u>	
Comparative Act 82 Amort. Bal. at December 31	\$238,369,208	\$270,726,927	\$270,726,927

<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>		\$ 13,778,983
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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	\$131,617,548	1998	2037	\$192,456,254	25	\$7,746,181
Assumption Change	\$(2,912,234)	1998	2017	\$(1,216,816)	5	\$(279,771)
Experience Loss	815,131	1999	2013	90,730	1	90,730
Experience Gain	(6,646,327)	2000	2014	(1,419,447)	2	(735,377)
Experience Loss	21,763,126	2001	2015	6,692,716	3	2,394,048
Assumption Change	597,864	2002	2021	386,024	9	56,294
Experience Loss	3,850,682	2002	2016	1,516,613	4	421,220
Investment Loss	18,838,751	2002	2032	15,993,921	20	1,459,422
Assumption Change	(4,706,925)	2003	2022	(3,255,290)	10	(441,163)
Experience Loss	7,363,935	2003	2017	3,484,486	5	801,155
Investment Loss	26,217,850	2003	2032	23,043,542	20	2,102,690
Assumption Change	(369,251)	2005	2024	(285,587)	12	(34,344)
Experience Loss	14,390,731	2005	2019	8,834,093	7	1,551,516
Experience Gain	(542,011)	2007	2021	(397,327)	9	(57,942)
Assumption Change	(544,220)	2009	2028	(490,632)	16	(49,926)
Experience Loss	40,957,810	2009	2028	36,924,756	16	3,757,434
Assumption Change	(3,468,835)	2011	2025	(3,203,103)	13	(366,686)
Experience Loss	(124,186,299)	2011	2030	(118,541,710)	18	(11,361,143)
Agg. Changes through Last Valuation	N/A	N/A	N/A	\$(31,843,031)	N/A	\$(691,843)
Assumption Change	\$41,759,441	2013	2027	\$41,759,441	15	\$4,400,755
Ben. Mod. - Actives	N/A					
Ben. Mod. - Retired	N/A					
Experience Gain	(11,222,672)	2013	2032	(11,222,672)	20	(1,024,053)
Agg. Change-2013	N/A	N/A	2026	\$30,536,769	14	\$3,376,702
Aggregate Changes	N/A	N/A		\$(1,306,262)		\$2,684,859
Aggregate	N/A	N/A		\$191,149,992		\$10,431,040

**Details of the Calculation of Act 82 Payment**

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

#### 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)	\$ 8,001,980
Total Annual Payroll	\$68,561,656
Percentages for Budget	
• Normal Cost (Normal Cost divided by Total Annual Payroll)	11.671%
• Administrative Expense (as a % of Payroll)	1.200%
• Gross Normal Cost	12.871%
Net Amortization Payment (Table 3)	\$10,431,040
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	\$155,241,257	2011	2040	\$152,390,864	28	\$12,248,710
Experience Loss	(3,000,313)	2013	2032	(3,000,313)	20	(273,774)
Assumption Change	41,759,441	2013	2027	41,759,441	15	4,400,755
Aggregate			2036	\$191,149,992	24	\$16,375,691

## Section Six: Accounting Information

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Accumulated Plan Benefits		<u>01/01/13</u>	<u>01/01/11</u>
Assets at Market Value		<u>\$ 227,007,765</u>	<u>\$ 216,050,208</u>
Actuarial Present Value of Vested Benefits			
Retired	\$276,744,840		
Deferred	7,340,544		
Employee Contributions	10,620,323		
Active	<u>80,949,792</u>		
Total		<u>\$375,655,499</u>	<u>\$319,273,321</u>
Unfunded Actuarial Present Value of Vested Benefits		<u>\$148,647,734</u>	<u>\$103,223,113</u>
Actuarial Present Value of Accrued Benefits			
Retired	\$276,744,840		
Deferred	7,340,544		
Employee Contributions	936,657		
Active	<u>133,192,060</u>		
Total		<u>\$418,214,101</u>	<u>\$364,750,560</u>
Unfunded Actuarial Present Value of Accrued Benefits		<u>\$191,206,336</u>	<u>\$148,700,352</u>

## GAS #27 Information

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

	2011	2012
Annual Required Contribution (ARC)	\$ 28,104,819	\$ 16,699,479
Interest on NPO	(922,899)	(429,616)
Adjustment to the ARC	<u>974,165</u>	<u>351,362</u>
Annual pension cost	28,156,085	16,621,225
Contributions made	<u>21,990,050</u>	<u>16,012,953</u>
Change in NPO	6,166,035	608,272
NPO - Beginning of Year (1/1)	<u>(11,536,233)</u>	<u>(5,370,198)</u>
NPO - End of Year (12/31)	\$ (5,370,198)	\$ (4,761,926)

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

Annual Required Contribution (ARC)	\$ 16,421,668
Interest on NPO	(380,954)
Adjustment to the ARC	<u>281,438</u>
Annual Pension Cost	\$ 16,322,152

### 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	4.50%
Underlying Inflation Rate	3.00%

## Section Seven: Actuarial Basis of Valuation

### Actuarial Assumptions: January 1, 2013

#### Economic

Interest Rate	7.50% increase per year
Salary Projection	4.50% increase per year
	Merit and Longevity Increases: 1.50 percent per year
	Inflation: 3.0 percent increase per year

#### Employee Characteristics

Mortality:	RP-2000 Mortality Tables, with adjustments to reflect Pension Plan mortality experience as confirmed by experience studies. The adjusted rates are based upon the following:
<i>Active Participants</i>	RP-2000 Employee Mortality Rates projected with scale AA
<i>Retired/Term Vested Participants</i>	RP-2000 Healthy Annuitant Mortality rates adjusted by blue collar ratios, set forward one year and projected from 2005 with scale AA.
<i>Disability Retirees</i>	Same as Retired, but with ages set forward four years.
<i>Surviving Beneficiaries</i>	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%	0.52%	0.20%
55	0.30%	0.77%	0.97%	0.86%
65	0.76%	1.82%	2.44%	1.91%
75	N/A	4.77%	6.41%	4.51%
85	N/A	12.64%	16.64%	12.81%

Age	Active Female Participant	Female Regular Retiree	Female Disabled Retiree	Female Beneficiary
45	0.11%	0.15%	0.22%	0.15%
55	0.25%	0.32%	0.55%	0.55%
65	0.58%	1.25%	1.68%	1.47%
75	N/A	3.38%	4.44%	3.31%
85	N/A	9.23%	12.48%	9.01%

## Withdrawal

Rates at Sample Ages:

Age	Years of Service				
	0-2	3	4	5	6+
20	4.08%	3.57%	3.06%	2.55%	2.04%
25	3.97%	3.47%	2.98%	2.48%	1.98%
30	3.80%	3.33%	2.85%	2.38%	1.90%
35	3.52%	3.08%	2.64%	2.20%	1.76%
40	2.63%	2.30%	1.97%	1.64%	1.31%
45	1.33%	1.16%	0.99%	0.83%	0.66%
50	0.30%	0.27%	0.23%	0.19%	0.15%
55	0.00%	0.00%	0.00%	0.00%	0.00%

## Disablement

Sample rates:

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

## Retirement Age

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

Age	Percentage
50	20
51	20
52	12
53	12
54	10
55	10
56	10
57	10
58	10
59	10
60	10
61	10
62	10
63	10
64	10
65	100

## Duty Related Mortality

20% of deaths in active service are assumed to be duty related.

## Duty Related Disability

50% of disabilities occurring during employment are assumed to occur in the line of duty.

Percentage Married

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 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	9	2	0	1	0	0	0	0	0	0	12
25-29	22	17	0	25	12	0	0	0	0	0	76
30-34	5	8	0	9	52	0	0	0	0	0	74
35-39	4	4	0	11	50	41	0	0	0	0	110
40-44	0	1	0	0	27	50	81	2	0	0	161
45-49	0	0	0	2	12	18	136	34	0	0	202
50-54	0	0	0	2	5	2	71	45	6	1	132
55-59	0	1	0	0	4	5	23	22	14	11	80
60-64	0	0	0	0	1	1	7	8	3	12	32
65+	0	0	0	0	0	0	1	2	0	1	4
Total	40	33	0	50	163	117	319	113	23	25	883

## 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	4	\$ 129,933.72	\$ 32,483.43
45-49	20	638,489.04	31,924.45
50-54	1	35,686.68	35,686.68
55-59	0	0.00	0.00
60-64	0	0.00	0.00
65-69	0	0.00	0.00
70-74	0	0.00	0.00
75-79	0	0.00	0.00
80-84	0	0.00	0.00
85+	0	0.00	0.00
<b>Total</b>	<b>25</b>	<b>\$804,109.44</b>	<b>\$32,164.38</b>

## 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	20	\$683,618.76	\$ 34,180.94
55-59	65	2,221,521.28	34,023.40
60-64	78	2,508,483.48	32,160.04
65-69	121	3,814,458.12	31,524.45
70-74	119	3,549,792.84	29,830.19
75-79	86	2,250,602.28	26,169.79
80-84	71	1,601,132.52	22,551.16
85+	84	1,423,998.46	16,952.37
<b>Total</b>	<b>644</b>	<b>\$18,043,608.24</b>	<b>\$ 28,018.03</b>

## 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	16	\$452,054.64	\$28,253.42
45-49	36	956,578.92	26,571.64
50-54	40	1,110,555.84	27,763.90
55-59	41	1,032,367.08	25,179.68
60-64	48	1,200,496.20	25,010.34
65-69	56	1,368,703.20	24,441.13
70-74	45	1,060,945.32	23,576.56
75-79	35	831,394.44	23,754.13
80-84	23	463,941.60	20,171.37
85+	20	316,708.80	15,835.44
<b>Total</b>	<b>360</b>	<b>\$8,793,746.04</b>	<b>\$ 24,427.07</b>

## Age Distribution of Retired Participants

Survivors			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 30	1	\$6,465.60	\$6,465.60
30-34	2	31,582.20	15,791.10
35-39	2	19,235.40	9,617.70
40-44	0	0.00	0.00
45-49	2	28,560.00	14,280.00
50-54	5	71,140.92	14,228.18
55-59	13	154,284.96	11,868.07
60-64	28	340,925.64	12,175.92
65-69	43	476,905.08	11,090.82
70-74	75	782,277.60	10,430.37
75-79	87	789,600.12	9,075.86
80-84	87	706,067.64	8,115.72
85+	147	853,893.96	5,808.80
Total	492	\$4,260,939.12	\$ 8,660.45

## Age Distribution of Retired Participants

All Persons Receiving Benefits			
Age Group	Number of People	Total Annual Benefit	Average Annual Benefit
< 30	1	\$6,465.60	\$6,465.60
30-34	2	31,582.20	15,791.10
35-39	2	19,235.40	9,617.70
40-44	16	452,054.64	28,253.42
45-49	38	985,138.92	25,924.71
50-54	65	1,865,315.52	28,697.16
55-59	119	3,398,173.32	28,556.08
60-64	154	4,049,905.32	26,298.09
65-69	220	5,660,066.40	25,727.57
70-74	239	5,393,015.76	22,564.92
75-79	208	3,871,596.84	18,613.45
80-84	181	2,771,141.76	15,310.18
85+	251	2,594,601.72	10,337.06
<b>Total</b>	<b>1,496</b>	<b>\$31,098,293.40</b>	<b>\$20,787.63</b>

## Demographic Data as of January 1, 2013

### Changes in Plan Participation for Active Members

Active Members	Number
As of January 1, 2011	880
New Entrants	73
Transfer from Another Plan	<u>3</u>
Total	956
<b>Separation from Active Service</b>	
Separation with a Deferred Benefit	(14)
Separation without a Deferred Benefit	(27)
Disability	(9)
Death	0
Retirement with a Service Retirement Benefit	<u>(23)</u>
Total Separations	(73)
<b>Data Adjustments</b>	<u>0</u>
Active Members as of January 1, 2013	883

### Changes in Plan Participants for Inactive Members and Survivors

	Deferred Vested Retirees	Regular Retirements	Disability Retirement	Survivors		Total
				Child	Other	
As of January 1, 2011	15	664	370	2	498	1,549
New Benefit Recipients	14	23	9	0	42	88
Death	0	(48)	(19)	0	(49)	(116)
Commencement of Deferred Benefits	(5)	5	0	0	0	0
Other Cessation of Benefits	0	0	0	(1)	0	(1)
Net Data Adjustments	1	0	0	0	0	1
As of January 1, 2013	25	644	360	1	491	1,521



## Section Nine: Plan Assets

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### 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 2011 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	0
Due from City of Pittsburgh	0	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>
<b>Plan-Specific Contributions</b>				
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>
<b>Total Contributions</b>	<b>\$26,885,936</b>	<b>\$23,384,367</b>	<b>\$17,372,712</b>	<b>\$67,643,014</b>

### 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>
<b>Total Distributions</b>	<b>\$32,873,373</b>	<b>\$28,393,023</b>	<b>\$21,420,864</b>	<b>\$82,687,260</b>

## 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

	<u>1/1/12</u>	<u>1/1/13</u>
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	0	0
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

<b>Plan-Specific Contributions</b>	<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>
<b>Total Contributions</b>	<b>\$20,955,098</b>	<b>\$19,592,765</b>	<b>\$15,897,202</b>	<b>\$56,445,065</b>
<b>Plan-Specific Distributions</b>				
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>
<b>Total Distributions</b>	<b>\$32,994,063</b>	<b>\$29,071,505</b>	<b>\$21,868,627</b>	<b>\$83,934,195</b>

## 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	\$ 227,007,765
Actuarial Value of Assets at January 1, 2011	\$235,012,542
Contributions During 2011	26,885,936
Disbursements During 2011	(33,367,453)
Interest Credited During 2011	<u>16,169,518</u>
Tabular Smoothing Value of Assets at January 1, 2012	\$244,700,542
Tabular Smoothing Value of Assets at January 1, 2012	\$244,700,542
Contributions During 2012	20,955,098
Disbursements During 2012	(33,473,108)
Interest Credited During 2012	<u>16,689,368</u>
Tabular Smoothing Value of Assets at January 1, 2013	\$248,871,901
Low Limit: 80% of Market Value	\$181,606,212
High Limit: 120% of Market Value	\$272,409,318
Actuarial Value of Assets at January 1, 2013	\$248,871,901

## 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	\$ 126,318,129
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Receipts	2011	2012	
Employer Contributions	\$ 10,587,959	\$ 9,629,757	
Employee Contributions	3,591,870	3,684,218	
State Aid	11,402,091	6,383,196	
Investment Income	6,008,864	4,888,199	
Net Appreciation	(2,643,954)	8,409,734	
Pass Through Contributions	<u>1,304,016</u>	<u>1,257,926</u>	
Total Receipts			\$64,503,876

<b>Disbursements</b>			
Monthly Benefit Payments	\$30,993,146	\$ 31,144,716	
Refund of Employee Contributions	248,129	224,938	
Administrative Expenses	765,014	728,647	
Pass Through Payments	<u>1,304,016</u>	<u>1,257,926</u>	
Total Disbursements			(66,666,532)

Assets Excluding Bond Proceeds at January 1, 2013	\$124,155,473
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**Development of Actuarial Value of Assets Excluding Bond Proceeds**

Market Value of Assets Excluding Bond Proceeds at January 1, 2013	\$124,155,473
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Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2011	\$126,318,129
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Contributions During 2011	26,885,936
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Disbursements During 2011	(33,310,305)
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Interest Credited During 2011	<u>8,562,875</u>
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Tabular Smoothing Value of Assets at January 1, 2012	\$128,456,635
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Tabular Smoothing Value of Assets at January 1, 2012	\$128,456,635
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Contributions During 2011	20,955,098
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Disbursements During 2011	(33,356,227)
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Interest Credited During 2011	<u>8,556,316</u>
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Tabular Smoothing Value of Assets at January 1, 2013	\$124,611,822
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Low Limit	80 Percent of Market Value	\$99,324,378
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High Limit	120 Percent of Market Value	\$148,986,568
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Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2013	\$124,611,822
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**Unfunded Actuarial Accrued Liability Excluding Assets from Bond Proceeds**

Actuarial Accrued Liability (Table 1)	\$440,021,893
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Actuarial Value of Assets Excluding Bond Proceeds at January 1, 2013	<u>(124,611,822)</u>
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Adjusted Unfunded Actuarial Accrued Liability	\$315,410,071
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**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			\$263,935,670
	<b>2011</b>	<b>2012</b>	
Normal Cost/Administrative Expenses Assumed	\$ 7,966,359	\$ 8,344,640	16,310,999
Interest Charged at Valuation Rate			45,912,068
Contributions Made			
- Municipality	\$10,587,959	\$9,629,757	
- State Aid Allocated	11,402,091	6,383,196	
- Employees	<u>3,591,870</u>	<u>3,684,218</u>	\$(45,279,091)
Interest Credited at Valuation Rate			(4,143,371)
Special Adjustment Because of Higher Act 82 Interest Rate			<u>(18,315,178)</u>
Expected Unfunded Actuarial Accrued Liability Before Adjustments			\$258,421,097
Experience from Investment Return			
- Comparative Interest Rate Amortization Tab. (Gain) Loss		\$26,279,726	
- Other Investment Return (Gain) Loss		<u>(5,711,428)</u>	20,568,298
Experience (Gain) Loss from all Other Sources			(5,338,765)
Increase (Decrease) in Unfunded Actuarial Accrued Liability:			
- Benefit Modifications for Actives		\$ 0	
- Benefit Modifications for Retirees		0	
- Changes in Actuarial Assumptions		<u>41,759,441</u>	<u>41,759,441</u>
Actual Unfunded Actuarial Accrued Liability			<u>\$315,410,071</u>
<b>Loss (Gain) to be Amortized</b>			
Experience (Gain) Loss from January 1, 2011			\$ 15,229,533
Actuarially Required Contributions and Bond Proceeds with Interest		\$ 26,626,647	
Actual Contributions with Interest		<u>(49,422,461)</u>	
Contribution (Gain) Loss			<u>(22,795,814)</u>
Loss (Gain) to be Amortized			<u>\$ (7,566,281)</u>

**Comparative Interest Rate Amortization Tabulation**

<i>Balance Calculated Using Actual Investment Return</i>	<b>2011</b>	<b>2012</b>	
Act 82 Amortization Balance at January 1	\$398,522,169	\$ 424,855,825	
Act 82 Amortization Payment	<u>14,773,769</u>	<u>14,773,769</u>	
Comparative Interest Rate Balance on January 1	\$413,295,938	\$439,629,594	
Actual Investment Return on Balance	<u>11,559,887</u>	<u>50,429,911</u>	
Actual Act 82 Amort. Balance at December 31	\$424,855,825	\$490,059,505	\$490,059,505
<i>Balance Calculated Using 10 Percent Investment Return</i>			
Comparative Interest Rate Balance at January 1	\$413,295,938	\$ 469,399,301	
Interest at 10 Percent	<u>41,329,594</u>	<u>46,939,930</u>	
Comparative Act 82 Amort. Bal. at December 31	\$454,625,532	\$516,339,231	\$516,339,231
<i>Comparative Interest Rate Amortization Tabulation (Gain) Loss</i>			\$26,279,726

**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	\$251,025,283	1998	2037	\$367,058,847	25	\$14,773,769
Assumption Change	\$(2,912,234)	1998	2017	\$(1,216,816)	5	\$(279,771)
Experience Gain	(675,232)	1999	2013	(75,158)	1	(75,158)
Experience Gain	(927,052)	2000	2014	(197,990)	2	(102,573)
Experience Loss	6,608,820	2001	2015	2,032,380	3	727,001
Assumption Change	597,864	2002	2021	386,024	9	56,294
Experience Loss	4,011,726	2002	2016	1,580,041	4	438,836
Investment Loss	4,719,077	2002	2032	4,006,452	20	365,583
Assumption Change	(4,706,925)	2003	2022	(3,255,290)	10	(441,163)
Experience Loss	7,791,758	2003	2017	3,686,925	5	847,700
Investment Loss	5,247,684	2003	2032	4,612,327	20	420,868
Assumption Change	(369,251)	2005	2024	(285,587)	12	(34,344)
Experience Loss	32,464,355	2005	2019	19,929,017	7	3,500,097
Experience Gain	(10,320,889)	2007	2021	(7,565,836)	9	(1,103,325)
Assumption Change	23,816,931	2009	2028	21,471,714	16	2,184,945
Experience Gain	(2,009,753)	2009	2028	(1,811,856)	16	(184,373)
Assumption Change	(3,468,835)	2011	2025	(3,203,103)	13	(366,686)
Experience Gain	(131,931,824)	2011	2030	(125,935,180)	18	(12,069,740)
Agg. Changes through Last Valuation	N/A	N/A	2066	\$(85,841,936)	54	\$(6,115,809)
Assumption Change	\$(41,759,441)	2013	2027	\$41,759,441	15	\$4,400,755
Ben. Mod.-Actives	N/A					
Ben. Mod.-Retired	N/A					
Experience Gain	(7,566,281)	2013	2032	(7,566,281)	20	(690,412)
Agg. Change - 2013	N/A	N/A	2027	\$34,193,160	15	\$3,710,343
Aggregate Changes	N/A	N/A		\$(51,648,766)		\$(2,405,466)
Aggregate	N/A	N/A		\$315,410,071		\$12,368,303

**Details of the Calculation of Act 82 Payment**

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



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

	<b>Date of Original Borrowing</b>	<b>Total Principal Borrowed</b>	<b>Total Principal to this Plan</b>	<b>Percentage to this Plan</b>	<b>Date of Refinancing</b>
	<b>3/10/98</b>	<b>\$255,865,000</b>	<b>\$120,512,415.10</b>	<b>47.6%</b>	<b>N/A</b>
<b>Plan Year</b>	<b>Req. Prin.Pymt.</b>	<b>Req.Int.Pymt.</b>	<b>Annual Debt Service</b>	<b>Disc.Amort.</b>	<b>Prin.Balance at Val Date</b>
1998		\$3,921,658.75	\$3,921,658.75	\$ 0	\$120,512,415.10
1999	\$471,000.00	7,830,011.75	8,301,011.75	0	120,512,415.10
2000	471,000.00	7,803,518.00	8,274,518.00	0	120,041,415.10
2001	471,000.00	7,776,882.95	8,247,882.95	0	119,570,415.10
2002	471,000.00	7,749,753.35	8,220,753.35	0	119,099,415.10
2003	471,000.00	7,722,411.80	8,193,411.80	0	118,628,415.10
2004	471,000.00	7,694,787.65	8,165,787.65	0	118,157,415.10
2005	1,179,855.01	7,645,426.83	8,825,281.84	0	117,686,415.10
2006	1,092,720.01	7,576,976.41	8,669,696.42	0	116,506,560.09
2007	1,158,660.01	7,508,582.50	8,667,242.51	0	115,413,840.08
2008	1,208,115.01	7,436,244.85	8,644,359.86	0	114,255,180.07
2009	1,304,670.00	7,353,582.89	8,658,252.89	0	113,047,065.06
2010	1,417,710.00	7,263,616.00	8,681,326.00	0	111,742,395.06
2011	1,521,330.00	7,171,771.00	8,693,101.00	0	110,324,685.06
2012	3,716,190.01	7,007,169.44	10,723,359.45	0	108,803,355.06
2013	5,173,935.00	6,725,837.03	11,899,772.03	0	105,087,165.05
2014	5,505,990.01	6,382,619.91	11,888,609.92	0	99,913,230.05
2015	5,988,765.01	6,009,040.37	11,997,805.38	0	94,407,240.04
2016	6,386,760.00	5,606,835.82	11,993,595.82	0	88,418,475.03
2017	8,593,395.01	5,119,980.78	13,713,375.79	0	82,031,715.03
2018	6,233,685.01	4,638,100.67	10,871,785.68	0	73,438,320.02
2019	9,434,130.01	4,124,179.63	13,558,309.64	0	67,204,635.01
2020	10,079,400.01	3,480,233.14	13,559,633.15	0	57,770,505.00
2021	10,767,060.01	2,792,299.96	13,559,359.97	0	47,691,104.99
2022	11,504,175.00	2,057,349.21	13,561,524.21	0	36,924,044.98
2023	12,290,744.99	1,272,116.86	13,562,861.85	0	25,419,869.98
2024	13,129,124.99	433,261.15	13,562,386.14	0	13,129,124.99

## Section Eleven: Glossary

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### **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 the 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.

