MOCKENHAUPT
BENEFITS GROUP

SUMMARY ACTUARIAL VALUATION REPORT

for the

City of Pittsburgh Pension Funds

as of

January 1, 2015

Report Date: April 28, 2016

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Section One: Introduction

This report presents a summary of the results of the January 1, 2015 actuarial valuation reports (AVRs) of the City of Pittsburgh's Policemen's, Firemen's and Municipal Pension Funds It is intended to serve as a quick reference and overview of the three valuations. Consult the individual reports for additional detail.

The City Controller obtained third-party advice from which he has 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 reports under Act 205. 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 has accepted the revised actuarial valuation reports as of January 1, 2011, and subsequent valuation reports 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 future parking revenues does not imply that it necessarily qualifies as a pension plan asset under GAS accounting or for any other purpose.

These valuations were prepared to satisfy the funding and disclosure requirements of Act 205 of 1984, and should be used for no other purpose. Each year the City is required to budget its minimum contribution for the following year. Under Act 205, this budgeted amount is referred to as the Minimum Municipal Obligation (MMO). The calculation of the MMO depends upon the actuarial cost components that are determined by the AVRs. The funded status measures in the AVRs are not intended to be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

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 7. 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, we also present 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 use of pension bond proceeds to reduce the Unfunded Actuarial Accrued Liability has split the funding of the pension plan into debt service and actuarial costs. Debt service payments repay the money borrowed and subsequently deposited into the plan. Information concerning the annual debt service is contained in Section Six. Section Three of this report summarizes the development of the actuarial cost components. The City's MMO is determined by summing these components and deducting estimated employee contributions. The three components of the plan's annual actuarial requirement are normal cost, administrative expenses and an amortization amount.

Normal cost is the portion of cost that is allocated to the current year, if the cost of each employee's prospective pension is allocated over his or her expected total employment period.

Administrative expenses are based upon current expense amounts paid from the plans.

The *amortization amount* is contributed when current asset levels are less, to date, than the target specified by Act 205 for funding. In Act 205 and actuarial language, this target is termed Actuarial Accrued Liability. As the term *accrued* suggests, this amount represents the portion of pension benefit liabilities allocated to service performed before the valuation date.

The insufficiency of current assets compared to the Actuarial Accrued Liability is referred to as the *Unfunded Actuarial Accrued Liability.* This insufficiency developed over the years for a variety of reasons. Two significant reasons are benefit improvements made after retirement, and benefit improvements made before retirement, which are related to prior service. Prior funding would not

have anticipated these improvements. Additionally, prior contributions may have been at less than actuarially sound levels.

Since 1985, the annual contribution requirements for the pension plans have been based upon actuarial standards set forth in Act 205 of 1984.

2015 Results

The actuarial cost components as of January 1, 2015 are as follows:

	Police	Fire	Municipal	Combined
Normal Cost as a % of Payroll	10.751%	14.127%	7.254%	10.236%
Admin. Expense as a % of Payroll	1.100%	1.200%	0.700%	0.968%
Gross Normal Cost %	11.851%	15.327%	7.954%	11.204%
Act 205 Minimum Amortization Payment	$11,522,196	$14,255,417	$10,781,992	$36,559,605

Beginning with the 2009 valuations, the reports also show an alternate amortization payment basis for funding purposes. The 2015 reports show the development of these amounts, based on amortizing the 2011 unfunded actuarial accrued liability over a "fresh-start" 30-year period and adding subsequent gain/loss bases. This amount is higher than the Act 205 minimum. These actuarially recommended amortization payments as of January 1, 2015 are as follows:

	Police	Fire	Municipal	Combined
Actuarially Recommended Amortization Payment	$17,784,199	$16,446,682	$12,214,636	$46,445,517

Pension bonds were issued and deposited into the Municipal Plan in December 1996 and all three plans in March 1998. The annual debt service on these bonds is approximately $28.56 million for 2015. Over time, the debt service and amortization schedules will allow the City to eliminate the Unfunded Actuarial Accrued Liability with payments that increase less and have a lower present value than the increasing amortization schedule included in prior actuarial valuations.

Changes Since the 2013 Actuarial Valuation

Actuarial costs for pension plans may change significantly from one valuation date to the next. These cost changes may be due to plan experience, changes in plan provisions, or changes in actuarial assumptions.

Normal costs, which are attributable to the current year's service, will usually change more moderately than the amortization amount. Unless plan provisions or assumptions change, normal costs as a percentage of payroll usually remain fairly stable over time. The changes that do occur are influenced by changes in the demographics of active plan participants.

The amortization amounts typically change by a greater amount from year to year. The total amortization payment is affected by changes in the Actuarial Accrued Liability due to experience gains and losses, contribution gains and losses, modifications in actuarial assumptions and modifications in plan provisions.

Changes in Plan Provisions

There have been no benefit changes since January 1, 2003 affecting current participants in either the Policemen's or Firemen's Plans, and no benefit changes since January 1, 2006 affected current participants in the Municipal Plan.

Changes in Actuarial Assumptions

No assumption changes were made for the January 1, 2015 AVRs. Act 205 requires that the City have an experience study prepared every four years. The last experience study was done in conjunction with the January 1, 2013 AVRs. The purpose of the experience study is to compare the plan's actual experience with the valuation assumptions. The comparison can indicate that actuarial assumptions should be changed as was the case in 2013 for numerous assumptions.

Experience Changes

The goal in selecting actuarial assumptions is to provide a reasonable estimate of actual experience over the long range. However, actual experience will always deviate somewhat from expected experience, especially over the short run. These experience gains or losses reduce or increase, respectively, actuarial contribution requirements for the future. Experience gains or losses are amortized over a 20-year period.

A plan's ability to pay benefits depends, in large part, on its earnings on accumulated funds. What does not come from those earnings must arise from future contributions. Thus, favorable or unfavorable investment experience between valuations will often have the largest impact on the gain or loss from experience compared to actuarial assumptions for the period. These gains or losses will then decrease or increase, respectively, future contribution requirements.

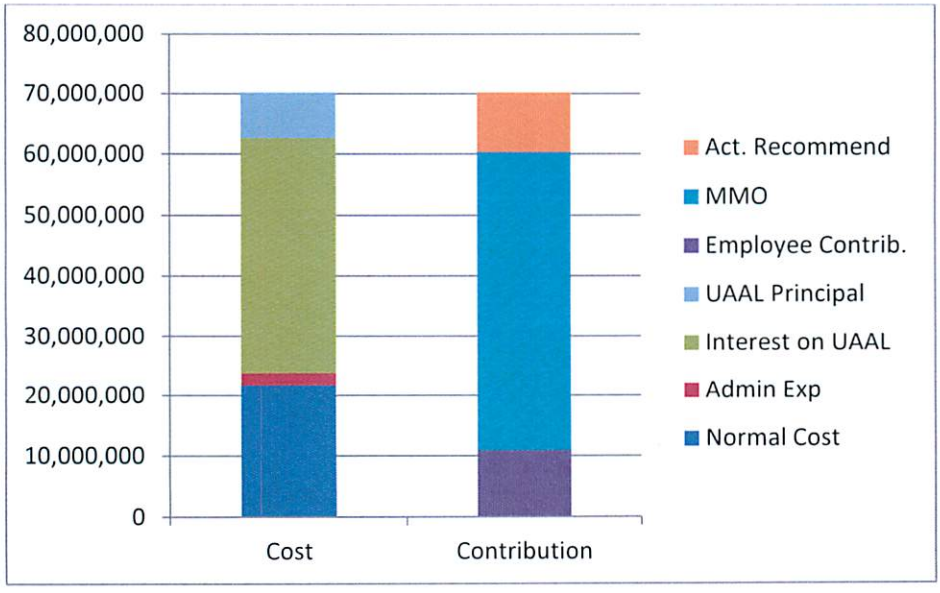
For 2015, new experience loss bases totaling $31,615,302 were established under the minimum funding rules of Act 205 (Table 3); new experience loss bases totaling $51,149,093 were established

for the actuarially recommended contribution (Table 3b). The primary sources of the experience loss were contributions that were less than required (based on the January 1, 2013 AVRs) when not taking into account Act 82 (under the actuarially required contribution) and losses generated by the Act 82 amortization calculation when taking that calculation into account. A contribution loss occurs due to the advance budgeting process of Act 205 when costs increase from valuation to valuation and recognition of that increase is delayed. The City contributed more than the MMOs in both 2013 and 2014.

Also included in the overall experience losses was a combined loss of $13,647,485 due to return on the actuarial value of assets (AVA) that was less than the assumed 7.5% annual rate. Under the Act 44 of 2009 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. Please refer to the AVR for one of the plans for a description of the asset smoothing method and explanation of its deviation from Actuarial Standards of Practice.

A more complete discussion of the actuarial experience gain or loss for each plan is included in the Commentary and Actuarial Disclosures section of that plan's actuarial valuation report.

The following chart shows the annual cost components of the plan (normal cost, administrative expenses, interest on the unfunded actuarial accrued liability and principal on the unfunded actuarial accrued liability) compared to the annual contribution requirements. As you can see, contributing only the MMO does not cover the entire interest on the unfunded liability, causing the unfunded liability to grow over time even if all assumptions of the plan are realized.



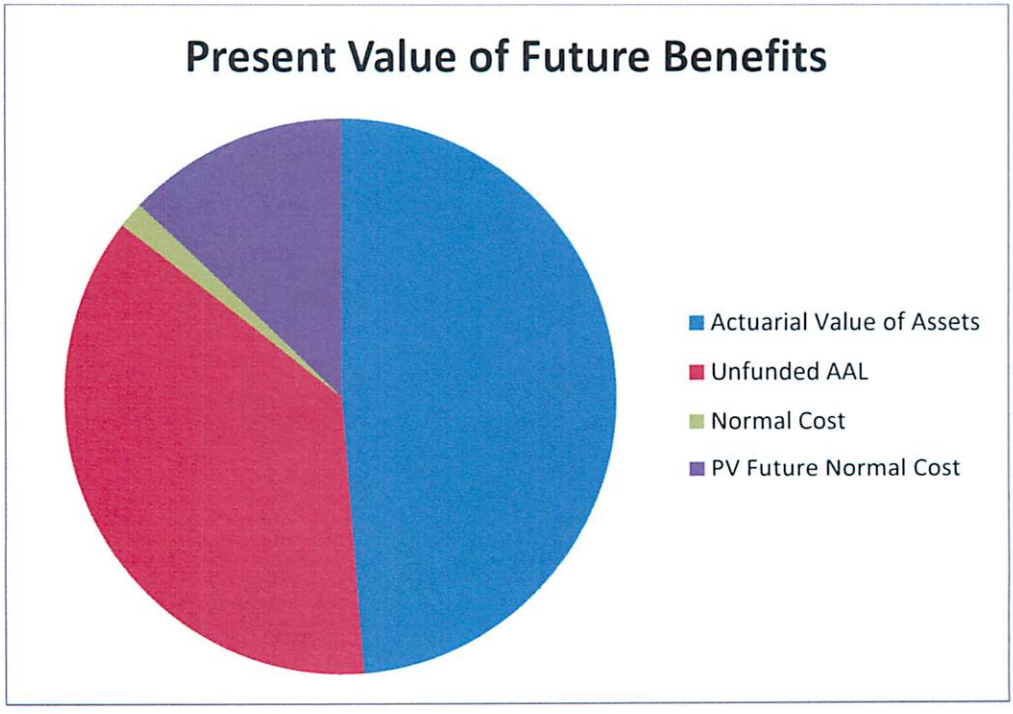
Funded Ratios

A measure of comparison between valuations is the plan's funded ratio, the actuarial value of assets divided by the actuarial accrued liability. The funded ratios as of January 1, 2015 are as follows:

	Police	Fire	Municipal	Combined
Actuarial Value of Assets	$249,288,242	$228,146,021	$210,113,317	$687,547,580
Actuarial Accrued Liability	$449,093,877	$410,718,753	$345,696,976	$1,205,509,606
Percentage Funded	55.5%	55.5%	60.8%	57.0%

The combined funded ratio for the City's three pension plans is currently 57.0%; as of January 1, 2013, the corresponding ratio was 58.2%, so the current valuations show a decrease of 1.2%. The funded ratio based on the market value of assets is 55.6%.

The following chart shows the present value of all future benefits expected to be paid from the plan for current participants. The area in blue represents the portion currently covered by the actuarial value of assets. The areas in blue and red combined represent the portion of benefits that are considered accrued under the actuarial cost method. The green portion represents the normal cost, or portion to be accrued in the current year. The purple section is the portion of benefits that current active participants are expected to accrue in the future. As you can see, this is a very mature plan.



Act 82 of 1998

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 is highly recommended.

Act 82 allowed the City to change the amortization schedule for its Unfunded Actuarial Accrued Liability because during 1998, pension bond proceeds were deposited into the pension plans 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 each plan's 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 8.75 percent interest. 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 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 each plan's valuation 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 experience gain. If the fund earns less than 10 percent, there will be an experience loss. When this legislation was enacted in 1998, investment conditions were different from the current conditions. An average 10 percent rate of return on a significant block of assets no longer seems reasonable. This balance grows over time and the losses from this source will tend to grow significantly. In fact, because benefits are being paid out as contributions are coming in, the comparative interest rate balance, which isn't adjusted for benefit payments, eventually will become larger than the total market value of assets. In practice,

this will likely lead to significant experience losses, an increasing pattern of amortization payments and a funded ratio which will still be well below 100% at the end of the 40-year period due to remaining balances on those losses.

By contrast, funding the plans 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 funded ratios much closer to 100% by the fixed target year.

Sensitivity Analysis

The actual costs of the plans will be determined by the experience of the plans over time. The present value of the projected liabilities shown in this (or any other) valuation of the plans is dependent upon the assumptions utilized. The assumed interest rate and assumed rates of retirement are two assumptions that have a significant impact on the expected costs of the plan. To highlight the effect of these assumptions on the calculated liabilities of the plan, we have included a sensitivity analysis on Table 6.

Section Two: Certification

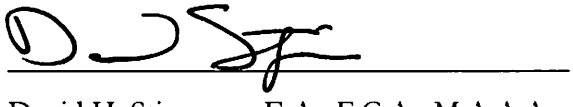
Complete summaries of the data, actuarial assumptions and methods and plan provisions used for each valuation are set forth in the individual reports for each pension plan. This report is intended to be a quick reference or overview of the results of the individual reports. This report does not constitute a statement of actuarial opinion; the individual reports do. Please refer to the individual reports for the proper documentation, disclosure and certification of the results that are summarized herein.

In the actuary's opinion, the actuarial assumptions used in the valuations are reasonably related to the experience of the plans and to reasonable expectations, and they represent his best estimate of anticipated experience under the plans. To the best of our knowledge, the individual actuarial valuation reports for each plan are complete and accurate, based on the data outlined therein. 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 by:



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

Section Three: Development of Contribution Requirements

Table 1: Normal Cost

	Police	Fire	Municipal	Combined
Normal Cost				
Retirement Benefits	$ 4,933,326	$ 5,207,806	$ 4,133,917	$ 14,275,049
Disability Benefits	2,495,537	2,167,462	713,820	5,376,819
Preretirement Death Benefits	134,573	171,774	51,281	357,628
Postretirement Death Benefits	0	2,528	0	2,528
Refund of Contributions	305,523	98,238	604,605	1,008,366
Medicare Premiums	0	0	42,529	42,529
Vested Withdrawal Benefits	85,906	25,749	521,913	633,568
Total	$ 7,954,865	$ 7,673,557	$ 6,068,065	$ 21,696,487
Covered Payroll (As reported on Form W-2)	$ 73,991,416	$ 54,317,512	$ 83,653,850	$ 211,962,778
Normal Cost as % of Pay				
Normal Cost	10.751%	14.127%	7.254%	10.236%
Expenses	1.100%	1.200%	0.700%	0.968%
Gross Normal Cost	11.851%	15.327%	7.954%	11.204%

Table 2: Unfunded Actuarial Accrued Liability

	Police	Fire	Municipal	Combined
Actuarial Accrued Liability-Active				
Actuarial Present Value (APV) of Future Benefits				
Retirement Benefits	$173,065,025	$173,915,107	$ 164,307,251	$ 511,287,383
Disability Benefits	48,668,167	48,126,281	15,972,111	112,766,559
Preretirement Death Benefits	1,797,009	2,733,913	1,671,463	6,202,385
Postretirement Death Benefits	0	76,360	0	76,360
Refund of Contributions	1,695,411	940,558	2,244,538	4,880,507
Medicare Premiums	0	0	7,615,293	7,615,293
Vested Withdrawal Benefits	1,773,661	497,829	5,832,161	8,103,651
Total	$226,999,273	$226,290,048	$ 197,642,817	$ 650,932,138
APV of Future Normal Costs	$(70,586,000)	$(90,123,250)	$(43,862,374)	$(204,571,624)
Actuarial Accrued Liability (AAL)-Total				
Active	$156,413,273	$ 136,166,798	$ 153,780,443	$ 446,360,514
Deferred Inactive	11,675,806	0	8,484,354	20,160,160
In Payment-Retirement	168,931,626	188,725,291	140,298,170	497,955,087
In Payment-Disability	81,036,833	64,536,932	24,535,373	170,109,138
In Payment - Medicare Premium Benefits	0	0	13,401,893	13,401,893
In Payment-Survivors	31,036,339	21,289,732	5,196,744	57,522,815
Total AAL	$449,093,877	$410,718,753	$345,696,976	$1,205,509,606
Unfunded Actuarial Accrued Liability				
Total Actuarial Accrued Liability	$ 449,093,877	$ 410,718,753	$ 345,696,976	$1,205,509,606
Actuarial Value of Assets *	(249,288,242)	(228,146,021)	(210,113,317)	(687,547,580)
Unfunded Actuarial Accrued Liability (UAAL) **	$ 199,805,635	$ 182,572,732	$ 135,583,659	$ 517,962,026
Funded Ratio	55.5%	55.5%	60.8%	57.0%

* The Actuarial Value of Assets is determined using the tabular smoothing method permitted by Act 44 of 2009.
** The combined Unfunded Actuarial Accrued Liability based on the market value of assets is $534,741,563. The combined funded ratio based on the market value of assets is 55.6%.

Table 3: Summary of Changes in Unfunded Actuarial Accrued Liability

	Police	Fire	Municipal	Combined
Expected Change in Unfunded Actuarial Accrued Liability				
Normal Cost Assumed	$ 16,324,410	$ 15,272,267	$ 11,617,589	$ 43,214,266
Admin. Expenses Assumed	1,682,503	1,293,145	1,336,873	4,312,521
Contributions Made	(34,655,730)	(35,716,003)	(26,270,750)	(96,642,484)
Interest Charged*	13,538,916	17,242,114	12,287,653	43,068,684
Total	$ (3,109,901)	$ (1,908,477)	$ (1,028,635)	$ (6,047,013)
Total Change in Unfunded Actuarial Accrued Liability				
Expected Change	$ (3,109,901)	$ (1,908,477)	$ (1,028,635)	$ (6,047,013)
Plan Experience	11,765,544	13,208,154	14,445,174	39,418,872
Benefit Modification-Actives	0	0	0	0
Benefit Modifications-Retired	0	0	0	0
Changes in Actuarial Assumptions	0	0	0	0
Total Changes	$ 8,655,643	$ 11,299,677	$ 13,416,539	$ 33,371,859
Summary				
Unfunded AAL as of 1/1/11	$ 191,149,992	$ 171,273,055	$122,167,120	$ 484,590,167
Changes Since the Prior Valuation	8,655,643	11,299,677	13,416,539	33,371,859
Unfunded AAL as of 1/1/13	$ 199,805,635	$ 182,572,732	$135,583,659	$ 517,962,026
Gain/Loss to be Amortized				
Contribution Loss (Gain)	$ (6,872,206)	$ (1,075,856)	$ 144,492	$ (7,803,570)
Experience Loss (Gain)	11,765,544	13,208,154	14,445,174	39,418,872
Experience Loss (Gain) to be Amortized	$ 4,893,338	$ 12,132,298	$ 14,589,666	$ 31,615,302

* Includes adjustments to assumed interest based on higher Act 82 interest rate.

Table 3b: Summary of Changes in Unfunded Actuarial Accrued Liability – Without Regard to Act 82

	Police	Fire	Municipal	Combined
Expected Change in Unfunded Actuarial Accrued Liability				
Normal Cost Assumed	$ 16,324,410	$ 15,272,267	$ 11,617,589	$ 43,214,266
Admin. Expenses Assumed	1,682,503	1,293,145	1,336,873	4,312,521
Contributions Made	(34,655,730)	(35,716,003)	(26,270,750)	(96,642,484)
Interest Charged*	29,385,577	26,045,735	18,651,958	74,083,270
Total	$ 12,736,760	$ 6,895,144	$ 5,335,670	$ 24,967,574
Total Change in Unfunded Actuarial Accrued Liability				
Expected Change	$ 12,736,760	$ 6,895,144	$ 5,335,670	$ 24,967,574
Plan Experience				
from Investment Return	4,986,147	4,524,964	4,136,374	13,647,485
from all Other Sources	(9,067,264)	(120,431)	3,944,495	(5,243,200)
Benefit Modification-Actives	0	0	0	0
Benefit Modifications-Retired	0	0	0	0
Changes in Actuarial Assumptions	0	0	0	0
Total Changes	$ 8,655,643	$ 11,299,677	$ 13,416,539	$ 33,371,859
Summary				
Unfunded AAL as of 1/1/13	$ 191,149,992	$ 171,273,055	$122,167,120	$ 484,590,167
Changes Since the Prior Valuation	8,655,643	11,299,677	13,416,539	33,371,859
Unfunded AAL as of 1/1/15	$ 199,805,635	$ 182,572,732	$135,583,659	$ 517,962,026
Gain/Loss to be Amortized				
Contribution Loss (Gain)	$ 19,517,069	$ 13,319,568	$ 9,908,171	$ 42,744,808
Experience Loss (Gain)	(4,081,117)	4,404,533	8,080,869	8,404,285
Experience Loss (Gain) to be Amortized	$ 15,435,952	$ 17,724,101	$ 17,989,040	$ 51,149,093

* Interest charged at valuation interest rate of 7.5% per year.

Table 4: Amortization of Unfunded Actuarial Accrued Liability

	Police	Fire	Municipal	Combined
Payment for Bases Established Prior to 1/1/15				
Initial (Re-established by Act 82 in 1998)	$ 7,746,181	$ 4,333,255	$ 3,132,592	$ 15,212,028
Other Changes Through 2013	3,329,505	8,815,107	6,318,114	18,462,726
Total for Previous Bases	$ 11,075,686	$13,148,362	$ 9,450,706	$ 33,674,754
Payment for Changes as of 1/1/15				
Experience Loss (Gain)	$ 446,510	$ 1,107,055	$ 1,331,286	$ 2,884,851
Benefit Modifications-Retired	0	0	0	0
Benefit Modifications-Active	0	0	0	0
Changes in Actuarial Assumptions	0	0	0	0
Total-New Bases	$ 446,510	$ 1,107,055	$ 1,331,286	$ 2,884,851
Total Payments				
Previous Bases	$ 11,075,686	$13,148,362	$ 9,450,706	$ 33,674,754
New Bases	446,510	1,107,055	1,331,286	2,884,851
Total	$ 11,522,196	$14,255,417	$10,781,992	$ 36,559,605

Table 5: Actuarial Cost Components for Required Municipal Contributions

	Police	Fire	Municipal	Combined
Normal Cost Percentage (before expenses)				
2013 Percentage	11.671%	14.256%	6.997%	9.694%
Change	-0.920%	-0.129%	0.257%	0.542%
2015 Percentage	10.751%	14.127%	7.254%	10.236%
Summary of Normal Cost Percentage				
Normal Cost Before Expenses	10.751%	14.127%	7.254%	10.236%
Administrative Expenses	1.100%	1.200%	0.700%	0.968%
Gross Normal Cost	11.851%	15.327%	7.954%	11.204%
2015 Amortization Payment				
2013 Amortization Payment	$ 10,431,040	$ 11,224,426	$ 8,567,318	$ 30,222,784
Changes for Bases Fully Amortized	644,646	1,923,936	883,388	3,451,970
Changes For Bases Established 1/1/15	446,510	1,107,055	1,331,286	2,884,851
Net Amortization Payment for 1/1/15	$ 11,522,196	$ 14,255,417	$ 10,781,992	$ 36,559,605
Actuarially Recommended Amortization Payment				
2013 Amortization Payment	$ 16,375,691	$ 14,829,383	$ 10,573,162	$ 41,778,236
Changes for Bases Fully Amortized	0	0	0	0
Changes for Bases Established 1/1/15	1,408,508	1,617,299	1,641,474	4,667,281
Net Amortization Payment for 1/1/15	$ 17,784,199	$ 16,446,682	$ 12,214,636	$ 46,445,517

Table 6: Analysis of Sensitivity to Key Assumptions

The actual costs of the plans will be determined by the experience of the plan over time. The present value of the projected liabilities shown in this (or any other) valuation of the plan is dependent upon the assumptions utilized. The assumed interest rate and assumed rates of retirement are two assumptions that have a significant impact on the expected costs of the plans.

To highlight the effect of these assumptions, we have calculated the normal cost and projected liabilities of the plans assuming a one percent decrease and increase in the assumed interest rate and assuming that participants retire at twice the assumed rates.

Interest Rate Sensitivity

	1% Decrease	Current %	1% Increase
Interest Rate	6.5%	7.5%	8.5%
Normal Cost	$26,720,028	$21,696,487	$17,758,199
Actuarial Accrued Liability	$1,324,276,837	$1,205,509,606	$1,103,425,550
Actuarial Value of Assets	(687,547,580)	(687,547,580)	(687,547,580)
Unfunded Actuarial Accrued Liability	$636,729,257	$517,962,026	$415,877,970
Funded Ratio	51.9%	57.0%	62.3%

Retirement Assumption Sensitivity

	Current Retirement Rates	Double the Current Retirement Rates
Normal Cost	$21,696,487	$23,578,488
Actuarially Accrued Liability	$ 1,205,509,606	$ 1,252,625,013
Actuarial Value of Assets	(687,547,580)	(687,547,580)
Unfunded Actuarial Accrued Liability	$ 517,962,026	$ 565,077,433
Funded Ratio	57.0%	54.9%

Section Four: Participant Summaries

Active Members

	Police	Fire	Municipal	Combined
Reconciliation from Prior Valuation				
Active at 1/1/13	883	584	1,784	3,251
New Members	79	75	251	405
Status Change or Transfers In	1	9	4	14
Termination-Vested Benefits	(17)	0	(19)	(36)
Other Terminations or Transfers Out	(27)	(3)	(142)	(172)
Death	(2)	(1)	(6)	(9)
Disability	(8)	(18)	(6)	(32)
Regular Retirement	(53)	(35)	(172)	(260)
Data Adjustments (Net)	0	0	0	0
Active at 1/1/15	856	611	1,694	3,161
Current Membership Summary				
Number Active at 1/1/15	856	611	1,694	3,161
Average Monthly Compensation	$5,393	$7,327	$3,711	$4,865
Average Ages				
At Hire	28.7	30.1	34.4	32.0
At Valuation Date	43.8	45.3	49.3	47.0
At Normal Retirement	52.3	53.6	60.5	56.9

Inactive Members

	Police	Fire	Municipal	Combined
Number as of 1/1/15				
Regular Retirement	654	553	1,299	2,506
Disability Retirement	340	234	249	823
Survivors	472	313	95	880
Total in Payment	1,466	1,100	1,643	4,209
Deferred Vested	35	0	65	100
Total	1,501	1,100	1,708	4,309
Average Monthly Benefits				
Regular Retirement	$ 2,409	$ 3,051	$ 1,111	$ 1,878
Disability Retirement	$ 2,087	$ 2,451	$ 1,044	$ 1,875
Survivor	$ 760	$ 785	$ 537	$ 745
Deferred Vested	$ 2,789	$ 0	$ 1,496	$ 1,949
Reconciliation from Prior Valuation - Number in Payment Status				
Number as of 1/1/13	1,496	1,111	1,584	4,191
New Payees	109	84	213	406
Cessation of Benefits	(139)	(96)	(167)	(402)
Net Data Adjustments	0	1	13	14
Number as of 1/1/15	1,466	1,100	1,643	4,209

Section Five: Plan Assets

Combined Municipal Pension Trust Fund Calendar Year 2013

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 2013 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

	1/1/13	1/1/14
Invested Portfolio	$355,308,381	$392,505,338
Dedicated Funding from Parking Assets	252,251,944	258,658,681
Accrued Interest	534,057	495,748
Accrued Contributions	0	0
Due from City of Pittsburgh	688,949	0
Accrued Expenses and Other Payables	(2,660,148)	(2,659,393)
Market Value of Assets - Accrual Basis	$606,123,183	$649,000,374

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2013		$606,123,183
Contributions Toward Pension Liability		
- Policemen's	$16,898,594	
- Firemen's	17,458,663	
- Municipal	12,837,680	$ 47,194,936
Miscellaneous and Pass Through Items		3,413,168
Interest and Dividends		5,667,616
Net Appreciation (Decline) in Fair Value of Investments		73,815,088
Payments to Participants		
- Policemen's	$ 33,139,329	
- Firemen's	29,288,384	
- Municipal	22,717,512	(85,145,225)
Expenses		(2,068,392)
Balance as of December 31, 2013		**$649,000,374**

Undivided Participation Calculation Calendar Year 2013 - Accrual Basis

	Policemen's	Firemen's	Municipal	Total
January 1, 2013 Market Value	$227,007,765	$199,706,235	$179,409,183	$606,123,183
Plan-Specific Contributions	18,181,423	17,764,846	14,598,432	50,544,700
Plan-Specific Distributions	(33,524,813)	(29,528,223)	(22,954,473)	(86,007,509)
Sub-Total	$211,664,375	$187,942,857	$171,053,142	$570,660,374
Sub-Total Percentages	37.09%	32.93%	29.98%	100.00%
Allocated Expenses	(447,345)	(397,171)	(361,591)	(1,206,108)
Allocated Investment Earnings	29,503,652	26,194,533	23,847,923	79,546,108
December 31, 2013 Market Value	$240,720,681	$213,740,219	$194,539,474	$649,000,374

Contributions and Distributions for 2013 - Accrual Basis

Plan-Specific Contributions	Policemen's	Firemen's	Municipal	Total
General Municipal Pension System State Aid	$6,578,550	$6,686,690	$4,758,184	$18,023,424
Member Contributions	3,670,456	4,001,491	3,257,867	10,929,813
City Contributions	6,649,588	6,770,482	4,821,629	18,241,699
Pass Through Contributions	1,282,829	296,750	1,741,118	3,320,697
Miscellaneous Income	0	9,433	19,634	29,067
Total Contributions	**$18,181,423**	**$17,764,846**	**$14,598,432**	**$ 50,544,700**

Plan-Specific Distributions				
Benefit Payments to Participants	$32,763,230	$29,201,972	$21,810,071	$83,775,273
Refunds to Participants	376,099	86,412	907,441	1,369,952
Administrative Expenses	385,484	239,839	236,961	862,284
Total Distributions	**$33,524,813**	**$29,528,223**	**$ 22,954,473**	**$86,007,509**

Combined Municipal Pension Trust Fund Calendar Year 2014

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 2014 Comprehensive Annual Financial Report (CAFR) and the present value calculated by Gleason and Associates of the dedicated stream of revenues created by City Ordinances 42 & 44 of 2010. Assets are shown at market value.

Summary of Values for the Aggregated Trust

	1/1/14	1/1/15
Invested Portfolio	$ 392,505,338	$ 394,224,222
Dedicated Funding from Parking Assets	258,658,681	278,702,580
Accrued Interest	495,748	502,471
Accrued Contributions	0	0
Due From City of Pittsburgh	0	0
Accrued Expenses and Other Payables	(2,659,393)	(2,661,230)
Market Value of Assets – Accrual Basis	$ 649,000,374	$ 670,768,043

Summary of Transactions for the Aggregated Trust

Balance as of January 1, 2014		$ 649,000,374
Contributions Toward Pension Liability		
-Policemen's	$ 17,757,137	
-Firemen's	18,257,340	
-Municipal	13,433,071	$ 49,447,548
Miscellaneous and Pass Through Items		3,451,063
Interest and Dividends		5,416,814
Net Appreciation (Decline) in Fair Value of Investments		52,831,293
Payments to Participants		
-Policemen's	$ 33,249,644	
-Firemen's	29,961,861	
-Municipal	24,182,938	(87,394,443)
Expenses		(1,984,606)
Balance as of December 31, 2014		**$ 670,768,043**

Undivided Participation Calculation Calendar Year 2014 - Accrual Basis

	Policemen's	Firemen's	Municipal	Total
January 1, 2014 Market Value	$240,720,681	$213,740,219	$194,539,474	$649,000,374
Plan-Specific Contributions	19,015,957	18,523,046	15,199,903	52,738,906
Plan-Specific Distributions	(33,612,436)	(30,214,219)	(24,432,098)	(88,258,753)
Sub-Total	$ 226,124,202	$ 202,049,046	$ 185,307,279	$ 613,480,527
Sub-Total Percentages	36.86%	32.93%	30.21%	100.00%
Allocated Expenses	(412,941)	(368,913)	(338,441)	(1,120,296)
Allocated Investment Earnings	21,529,119	19,233,692	17,645,001	58,407,812
December 31, 2014 Market Value	$247,240,380	$220,913,824	$202,613,838	$670,768,043

Contributions and Distributions for 2014 - Accrual Basis

Plan-Specific Contributions	Policemen's	Firemen's	Municipal	Total
General Municipal Pension System State Aid	$6,665,568	$6,839,897	$4,758,094	$18,263,559
Member Contributions	3,691,958	3,824,343	3,392,950	10,909,251
City Contributions	7,399,611	7,593,100	5,282,027	20,274,738
Pass Through Contributions	1,258,820	256,300	1,748,781	3,263,901
Miscellaneous Income	0	9,406	18,051	27,457
Total Contributions	**$19,015,957**	**$18,523,046**	**$15,199,903**	**$52,738,906**
Plan-Specific Distributions				
Benefit Payments to Participants	$32,994,914	$29,832,523	$23,627,122	$86,454,559
Refunds to Participants	254,730	129,338	555,816	939,884
Administrative Expenses	362,792	252,358	249,160	864,310
Total Distributions	**$33,612,436**	**$30,214,219**	**$24,432,098**	**$88,258,753**

Calculation of Actuarial Value of Assets: Description of Method

The Actuarial Value of Assets is the greater of the Market Value of Assets or the value 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 1 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

	Police	Firemen	Municipal	Total
Market Value of Assets at January 1, 2015	$247,240,380	$220,913,824	$202,613,838	$670,768,042
Actuarial Value of Assets at January 1, 2013	$248,871,901	$224,050,549	$202,529,949	$675,452,399
Contributions During 2013	18,181,423	17,755,413	14,578,798	50,515,634
Disbursements During 2013	(33,972,158)	(29,925,394)	(23,316,064)	(87,213,616)
Interest Credited During 2013	15,603,208	14,104,901	12,835,920	42,544,029
Actuarial Value of Assets at January 1, 2014	$248,684,374	$225,985,469	$206,628,603	$681,298,446
Tabular Smoothing Value of Assets at January 1, 2014	$248,684,374	$225,985,469	$206,628,603	$681,298,446
Contributions During 2014	19,015,957	18,513,640	15,181,851	52,711,448
Disbursements During 2014	(34,025,377)	(30,583,132)	(24,770,539)	(89,379,048)
Interest Credited During 2014	15,613,288	14,230,044	13,073,402	42,916,734
Actuarial Value of Assets at January 1, 2015	$249,288,242	$228,146,021	$210,113,317	$687,547,580
Low Limit: 80% of Market Value	$197,792,304	$176,731,059	$162,091,070	$536,614,433
High Limit: 120% of Market Value	$296,688,456	$265,096,589	$243,136,606	$804,921,651
Actuarial Value of Assets at January 1, 2015	**$249,288,242**	**$228,146,021**	**$210,113,317**	**$687,547,580**

Section Six: Schedule of Debt Service Payments by Plan Arising from the Issuance of Pension Obligation Bonds

Year	1996 Issue Municipal	1998 Issue Municipal	Municipal Subtotal	1998 Issue Police	1998 Issue Fire	Total
1997	$1,834,529.78		$1,834,529.78			$ 1,834,529.78
1998	3,089,976.25	$1,873,403.84	4,963,380.09	$3,921,658.75	$2,531,176.79	11,416,215.63
1999	3,093,905.00	3,965,451.43	7,059,356.43	8,301,011.75	5,357,765.57	20,718,133.75
2000	3,089,965.00	3,952,795.18	7,042,760.18	8,274,518.00	5,340,665.57	20,657,943.75
2001	3,093,050.00	3,940,071.43	7,033,121.43	8,247,882.95	5,323,474.37	20,604,478.75
2002	3,093,065.00	3,927,111.43	7,020,176.43	8,220,753.35	5,305,963.97	20,546,893.75
2003	3,094,772.50	3,914,050.18	7,008,822.68	8,193,411.80	5,288,316.77	20,490,551.25
2004	3,092,930.00	3,900,853.93	6,993,783.93	8,165,787.65	5,270,487.17	20,430,058.75
2005	3,092,285.00	4,215,898.93	7,308,183.93	8,825,281.84	5,696,147.98	21,829,613.75
2006	3,092,631.25	4,141,574.68	7,234,205.93	8,669,696.42	5,595,727.65	21,499,630.00
2007	3,094,008.75	4,140,402.43	7,234,411.18	8,667,242.51	5,594,143.81	21,495,797.50
2008	3,091,210.00	4,129,471.22	7,220,681.22	8,644,359.86	5,579,374.54	21,444,415.62
2009	3,093,890.00	4,136,108.02	7,229,998.02	8,658,252.89	5,588,341.59	21,476,592.50
2010	3,091,950.00	4,147,130.21	7,239,080.21	8,681,326.00	5,603,233.79	21,523,640.00
2011	3,090,225.00	4,152,755.21	7,242,980.21	8,693,101.00	5,610,833.79	21,546,915.00
2012	3,093,220.00	5,122,623.89	8,215,843.89	10,723,359.45	6,921,234.16	25,860,437.50
2013	3,092,690.00	5,684,604.41	8,777,294.41	11,899,772.03	7,680,532.31	28,357,598.75
2014	3,092,940.00	5,679,272.19	8,772,212.19	11,888,609.92	7,673,327.89	28,334,150.00
2015	3,091,015.00	5,731,435.63	8,822,450.63	11,997,805.38	7,743,806.49	28,564,062.50
2016	3,091,390.00	5,729,424.69	8,820,814.69	11,993,595.82	7,741,089.49	28,555,500.00
2017	3,093,365.00	6,550,975.62	9,644,340.62	13,713,375.79	8,851,096.09	32,208,812.50
2018	3,091,415.00	5,193,528.14	8,284,943.14	10,871,785.68	7,017,033.68	26,173,762.50
2019	3,093,792.50	6,476,899.43	9,570,691.93	13,558,309.64	8,751,010.93	31,880,012.50
2020	3,094,545.00	6,477,531.68	9,572,076.68	13,559,633.15	8,751,865.17	31,883,575.00
2021	3,093,937.50	6,477,401.18	9,571,338.68	13,559,359.97	8,751,688.85	31,882,387.50
2022	3,091,260.00	6,478,435.06	9,569,695.06	13,561,524.21	8,753,085.73	31,884,305.00
2023	3,090,625.00	6,479,074.06	9,569,699.06	13,562,861.85	8,753,949.09	31,886,510.00
2024	3,090,967.50	6,478,846.81	9,569,814.31	13,562,386.14	8,753,642.05	31,885,842.50

Section Seven: Historical Information

Actuarial information is included in the following charts for the last five biennial actuarial valuations. However, contribution information is included annually beginning with 2010.

The information contained elsewhere in this report provides detailed information on liabilities for each plan as of January 1, 2015 and the changes in the funding components during the year ending December 31, 2014. This section examines funding trends that emerged during the last five actuarial valuation periods. Also, a five-year review of contributions to fund the benefits has been included and a comparison of the actuarial value of assets for the last four valuations has been added.

The goal of the actuarial funding method is to accumulate enough assets by an employee's retirement date so that these assets and the interest they earn will pay benefits for the remainder of the employee's life, and possibly to a beneficiary. As active employees approach retirement, accumulated assets will increase each year. As retirement benefits are paid the accumulated assets will decrease. At any point in time, there is a theoretical asset level that should be achieved, known as the Actuarial Accrued Liability.

A number of factors can have an impact on the Actuarial Accrued Liability. The January 1, 2015 valuation reports do not include assumption changes or benefit changes, both of which could have changed the actuarial accrued liability.

Chart No. 1 shows the Actuarial Accrued Liability for each plan and the total for all plans from the actuarial valuations prepared in the period 2007 through 2015. Each of the Funds' Actuarial Accrued Liability increases over the period, which is the expected trend.

Comparing the assets and the Actuarial Accrued Liability as of a given date determines whether the funding is ahead of or behind schedule. Each of the City's plans is behind schedule because the Actuarial Accrued Liability is greater than the assets. This deficit is known as the Unfunded Actuarial Accrued Liability. Over time, annual amortization payments to the funds, calculated using the valuation interest rate will eliminate the Unfunded Actuarial Accrued Liability.

In 1996 and in 1998, the City issued pension obligation bonds and deposited the proceeds into the funds to reduce the gap between the Actuarial Accrued Liability and the assets. The debt service on the bonds is lower than the corresponding amortization payments because the interest rate on the bonds is lower than the valuation interest rate. As a result, the City is paying less money each year to provide pension benefits.

Chart No. 2 shows the Unfunded Actuarial Accrued Liability for each plan and the total for all plans from the actuarial valuations prepared from 2007 through 2015. The January 1, 2009 valuation showed a significant increase in the Unfunded Actuarial Accrued Liability for all plans due to the major investment losses of 2008. The Unfunded Actuarial Accrued Liability declined at January 1, 2011 because of the contribution gain that resulted from the inclusion of the present value of future parking revenue as a City contribution for 2010. The Unfunded Actuarial Accrued Liability increased at January 1, 2013 due to assumption changes, the magnitude of which exceeded the net experience gains of each plan. The Unfunded Actuarial Accrued Liability increased at January 1, 2015, largely because of experience and contribution losses in each plan.

Chart No. 3 provides the Funding Ratio for each fund and the average Funding Ratio for the 2007 through 2015 period. The Funding Ratio is the ratio of assets to the Actuarial Accrued Liability. In 1996, assets averaged 23.5 percent of the Actuarial Accrued Liability. Because of the pension obligation bonds, investment earnings in excess of the actuarial assumption and other changes noted above, the average peaked in 2000 at 67.0 percent. The return on investment in 2000, 2001, and 2002 and benefit improvements caused the average 2003 funding ratio to fall to 40.8 percent. The Funding Ratio increased slightly in 2005, but retracted by 2.7 percent in 2007, mostly due to experience losses in the Firemen's Fund. The ratio dropped by 7.4 percent to 34.3 percent in 2009 as a result of the large investment losses in 2008 and, to a lesser extent, by a decrease in the assumed interest rate from 8.75 percent to 8.0 percent. The funding ratio increased by 28.1 percent in 2011 to 62.4 percent due to the inclusion of the present value of future parking revenue as a pension plan asset. Funding ratios in 2009 through 2015 would be lower if the actuarial value of assets had not been changed to a value based on a tabular smoothing method. The funding ratio declined by 4.2 percent from 2011 to 2013, mainly because of assumption changes. It again declined by 1.2% from 2013 to 2015, largely because of experience and contribution losses.

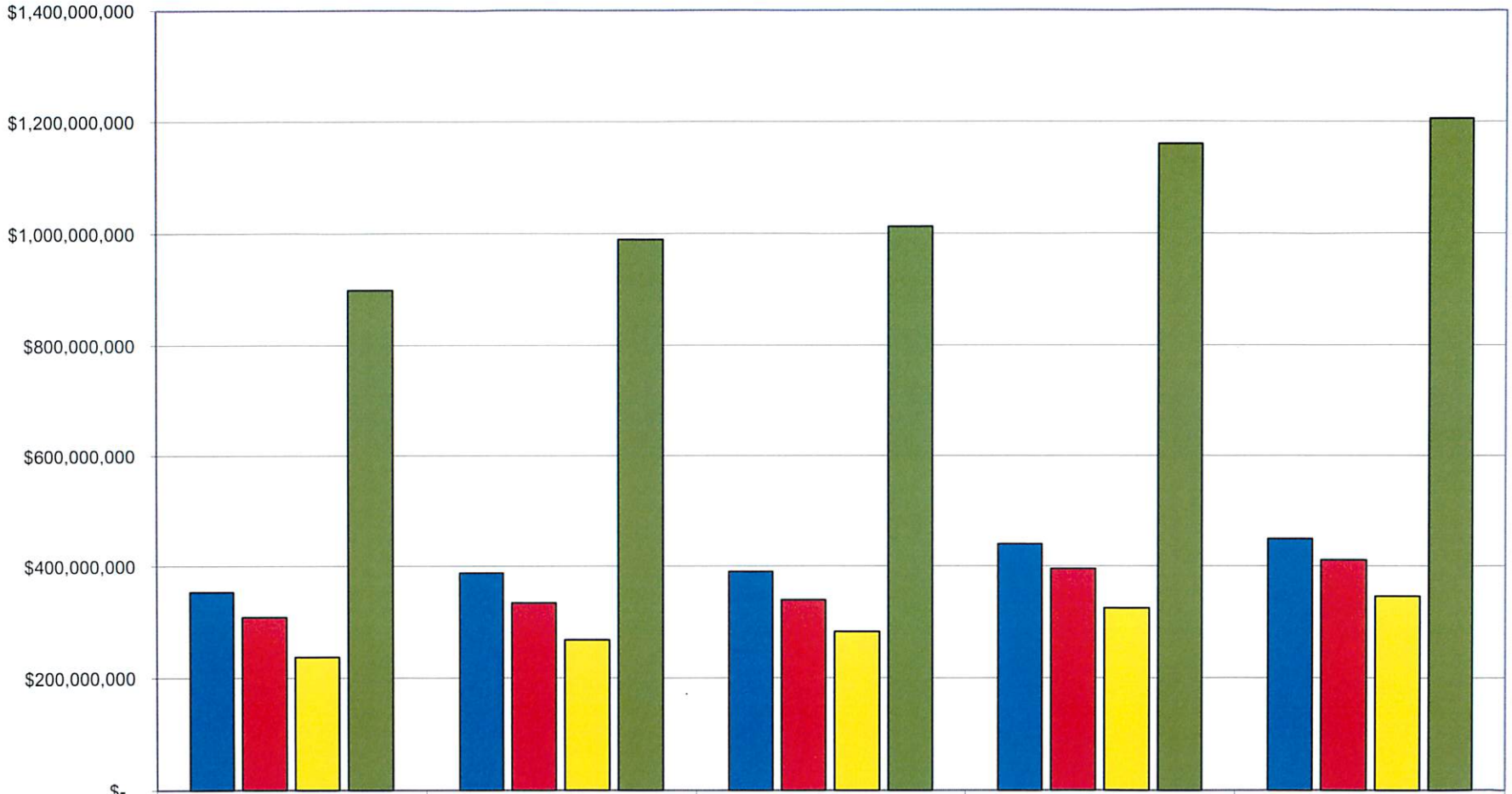
Charts No. 4 through 7 provide information on the sources of the money to fund pension benefits on an individual and on an aggregate basis. Contributions for 2010 through 2014 are shown as a percentage of the total pay as reported on Form W-2 for each group. The City Contribution is the money paid by the City directly to the pension plans. Debt service is the annual payment made by the City to retire the pension obligation bonds.

The complete schedule of debt service payments is included in Section Six. The employees' contributions are withheld from employees' paychecks and paid directly to the pension plans. State Aid is the City's allocation from the two percent premium tax on foreign fire and casualty insurance, which the City deposits into the plans. State Aid could also be used to pay debt service, but the City would have to make additional contributions to the pension plans equal to the amount of State Aid used to pay debt service. In the future, if the City's Minimum Municipal Obligation falls below the State Aid allocation, the extra State Aid could be used to pay debt service.

Charts No. 8 through 11 provide information comparing the actuarial accrued liability to the actuarial value and market value of assets by plan and for all plans combined as of biennial valuation dates from January 1, 2007 to January 1, 2015. For valuation years before 2009, market and actuarial value of assets match. However, in 2009, the tabular smoothing method results in the values differing, with the actuarial value of assets being higher.

Chart No. 1

Actuarial Accrued Liability

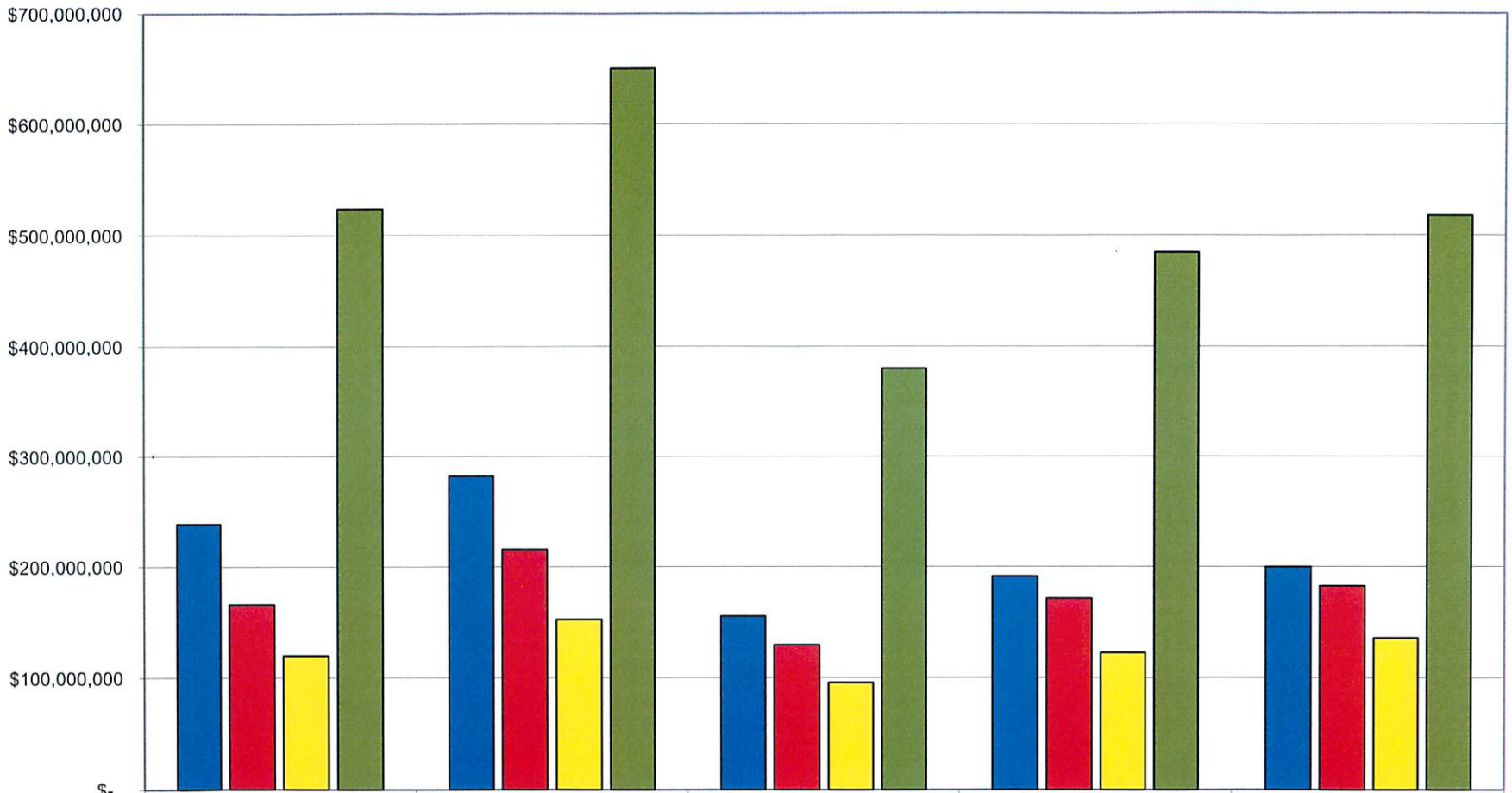


	2007	2009	2011	2013	2015
Police	$353,521,990	$387,857,613	$390,253,799	$440,021,893	$449,093,877
Fire	$308,412,402	$334,059,624	$339,135,347	$395,323,604	$410,718,753
Municipal	$237,314,186	$267,615,711	$282,683,095	$324,697,069	$345,696,976
Total	$899,248,578	$989,532,948	$1,012,072,241	$1,160,042,566	$1,205,509,606

Assumption changes in the 2009 and 2013 valuations increased the Actuarial Accrued Liability.

Chart No. 2

Unfunded Actuarial Accrued Liability

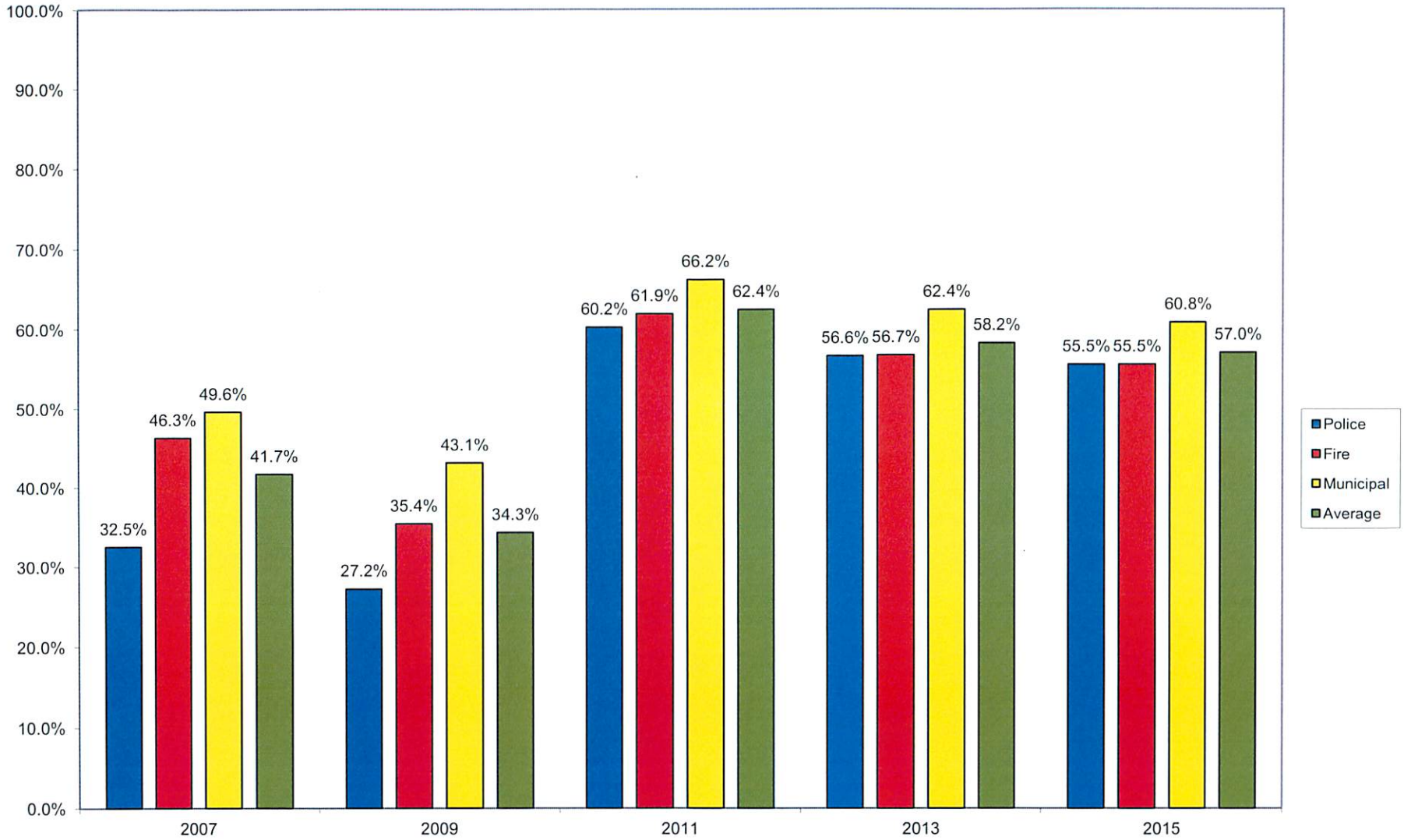


	2007	2009	2011	2013	2015
Police	$238,632,923	$282,292,625	$155,241,257	$191,149,992	$199,805,635
Fire	$165,625,303	$215,767,241	$129,198,421	$171,273,055	$182,572,732
Municipal	$119,621,628	$152,293,174	$95,641,110	$122,167,120	$135,583,659
Total	$523,879,854	$650,353,040	$380,080,788	$484,590,167	$517,962,026

Adoption of the Act 44 smoothing method and a decrease in the valuation interest rate in the 2009 valuation had an impact on the Unfunded Actuarial Accrued Liability (UAAL). The inclusion of the dedicated stream of revenues pursuant to City Ordinances 42 and 44 of 2010 significantly reduced the UAAL in the 2011 valuation. Assumption changes in the 2013 valuation increased the UAAL.

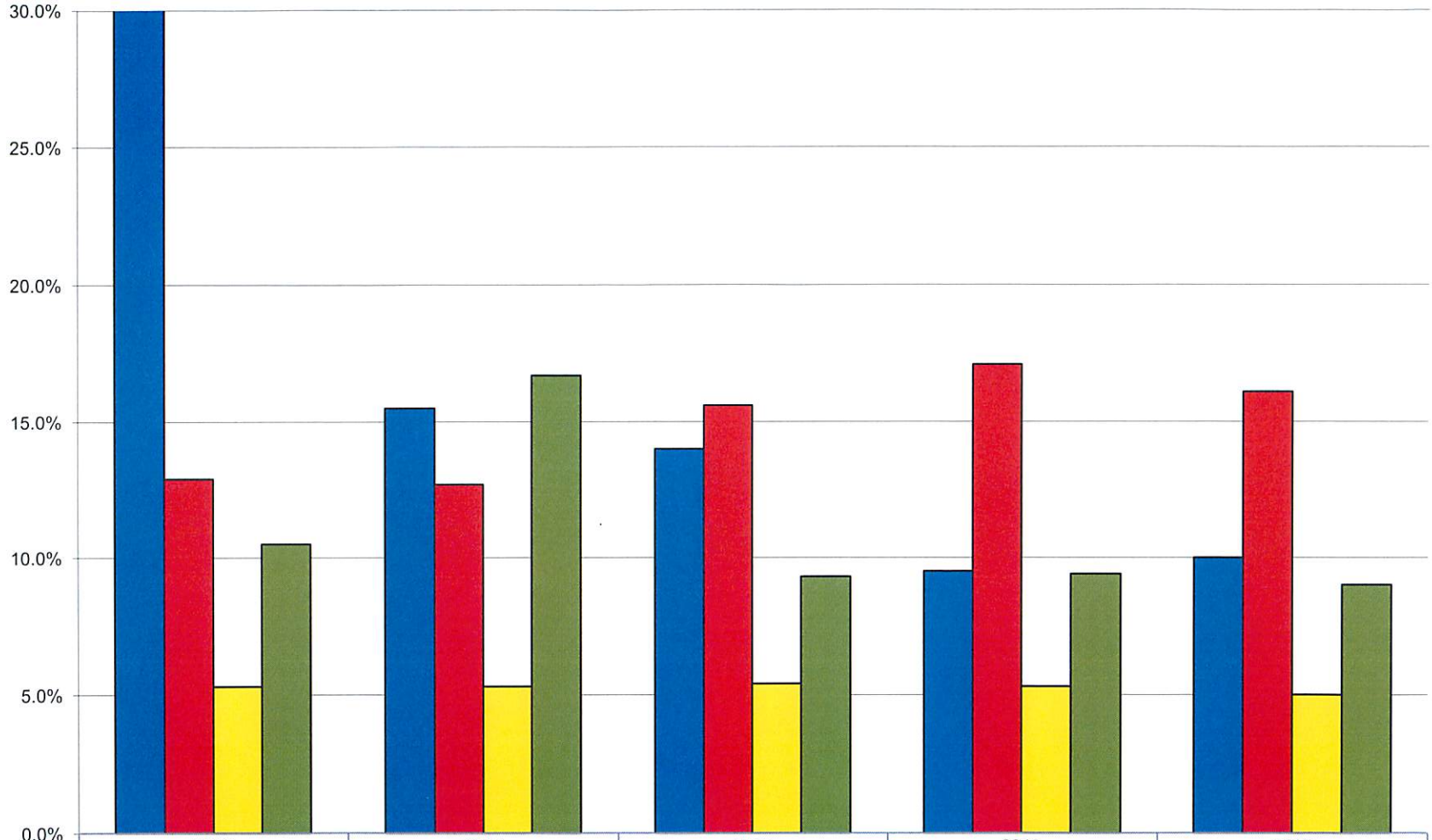
Chart No. 3

Funding Ratio



Funding Ratio is the actuarial value of assets divided by the actuarial accrued liability, expressed as a percentage. The Funding Ratios for 2011 and later reflect the inclusion in the actuarial value of assets of the dedicated stream of revenues pursuant to Ordinances 42 and 44 of 2010.

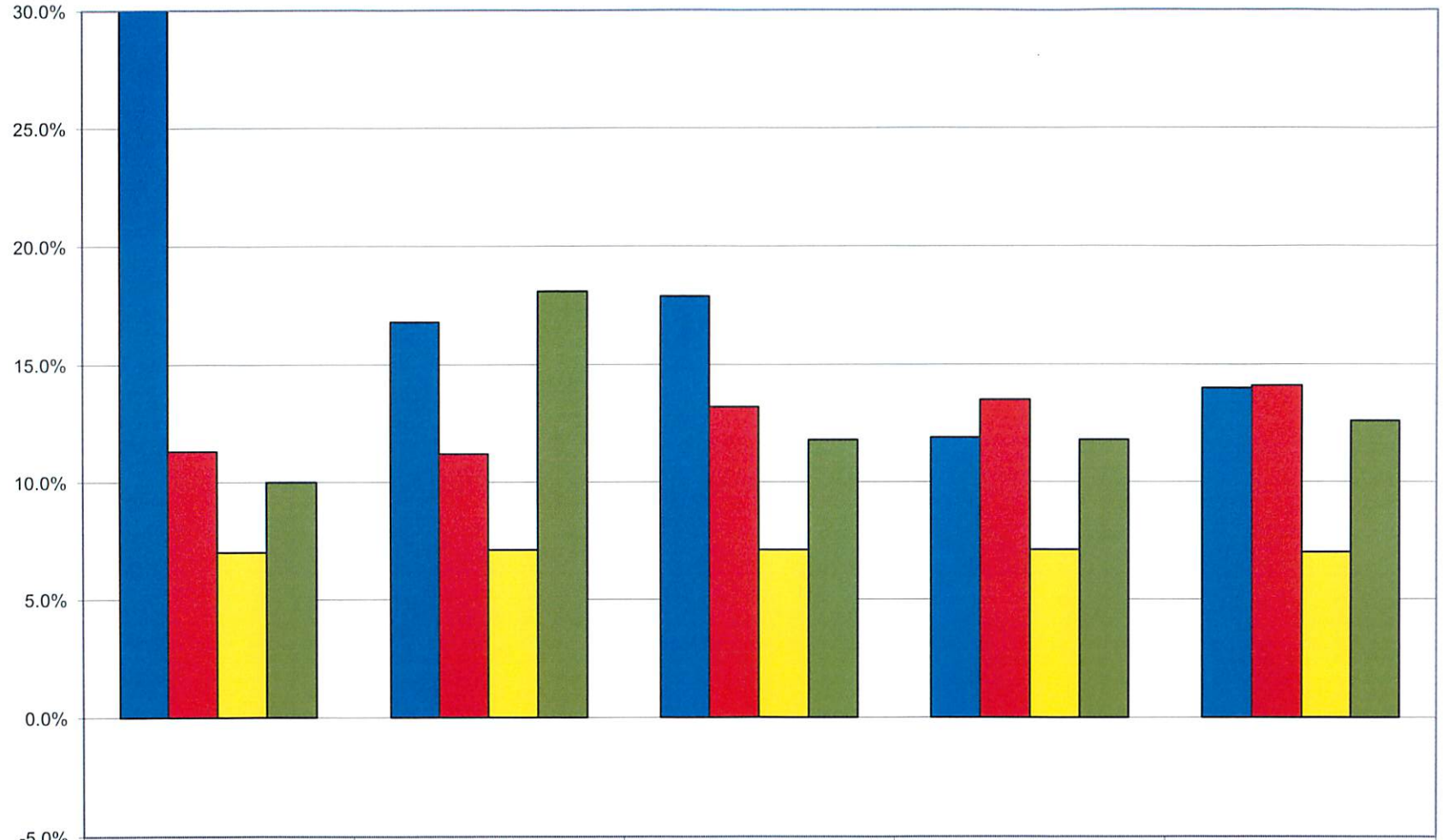
Chart No. 4
City of Pittsburgh Police Relief and Pension Fund
Pension Contributions as a Percent of Actual W-2 Pay



	2010	2011	2012	2013	2014
City Contribution	218.3%	15.5%	14.0%	9.5%	10.0%
Debt Service	12.9%	12.7%	15.6%	17.1%	16.1%
Employees	5.3%	5.3%	5.4%	5.3%	5.0%
State Aid	10.5%	16.7%	9.3%	9.4%	9.0%

The present value of the dedicated stream of future revenues pursuant to Ordinances 42 and 44 of 2010 is included in the city contribution for 2010 making the city contribution for that year literally off the charts.

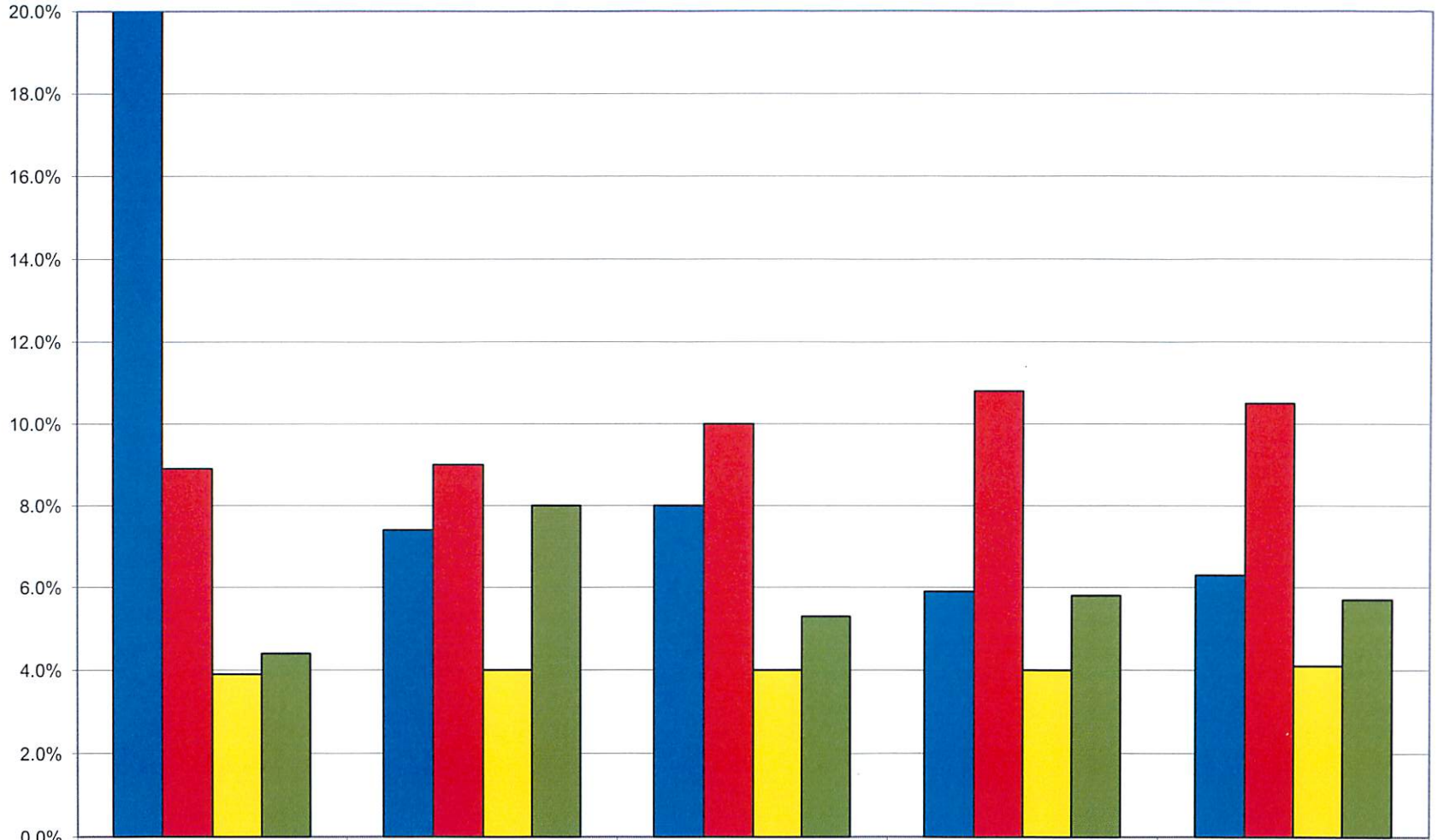
Chart No. 5
City of Pittsburgh Firemen's Relief and Pension Fund
Pension Contributions as a Percentage of Actual W-2 Pay



	2010	2011	2012	2013	2014
City Contribution	209.1%	16.8%	17.9%	11.9%	14.0%
Debt Service	11.3%	11.2%	13.2%	13.5%	14.1%
Employees	7.0%	7.1%	7.1%	7.1%	7.0%
State Aid	10.0%	18.1%	11.8%	11.8%	12.6%

The present value of the dedicated stream of future revenues pursuant to Ordinances 42 and 44 of 2010 is included in the city contribution for 2010 making the city contribution for that year literally off the charts.

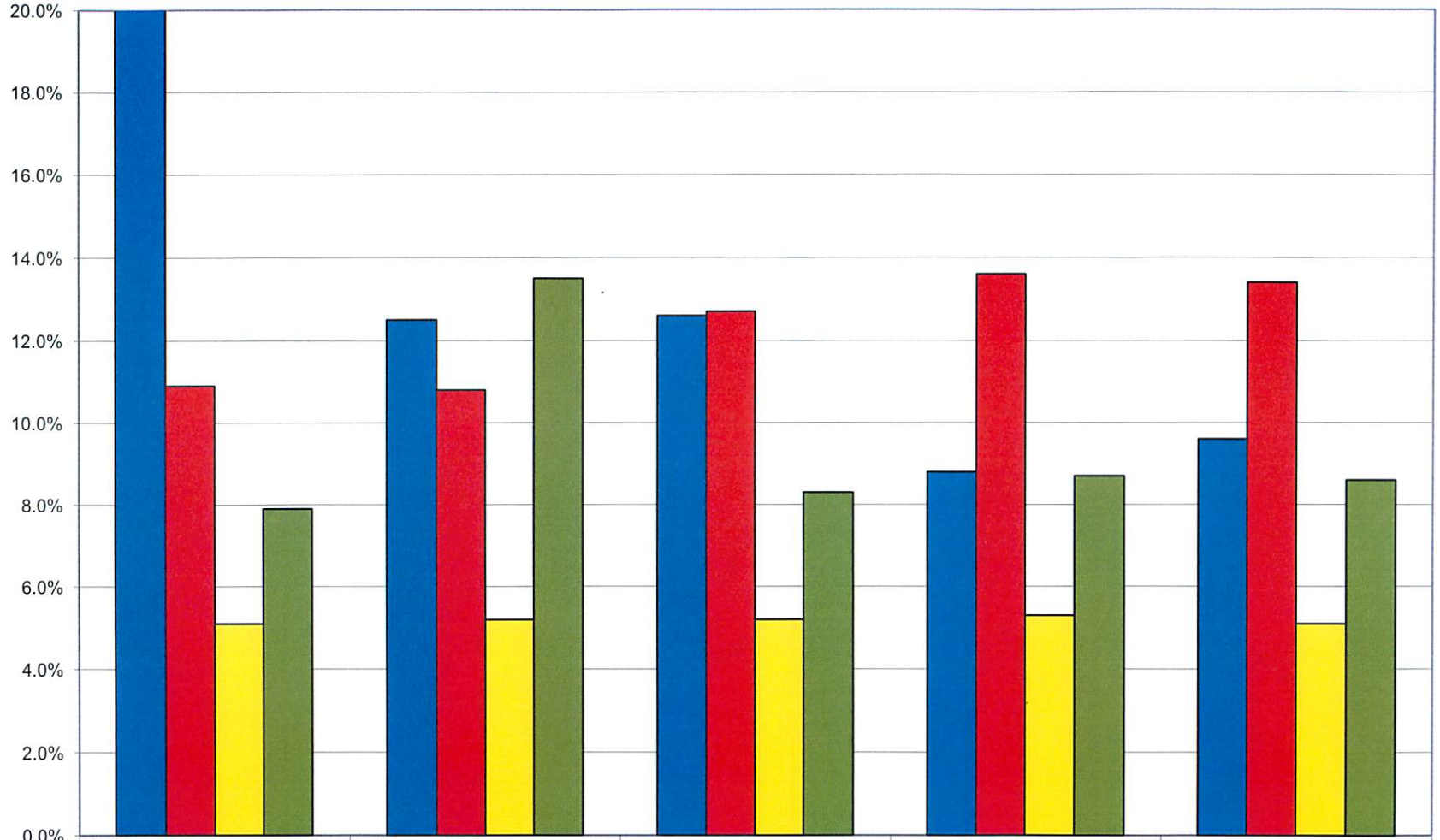
Chart No. 6
City of Pittsburgh Municipal Retirement Fund
Pension Contributions as a Percentage of Actual W-2 Pay



	2010	2011	2012	2013	2014
City Contribution	91.2%	7.4%	8.0%	5.9%	6.3%
Debt Service	8.9%	9.0%	10.0%	10.8%	10.5%
Employees	3.9%	4.0%	4.0%	4.0%	4.1%
State Aid	4.4%	8.0%	5.3%	5.8%	5.7%

The present value of the dedicated stream of future revenues pursuant to Ordinances 42 and 44 of 2010 is included in the city contribution for 2010 making the city contribution for that year literally off the charts.

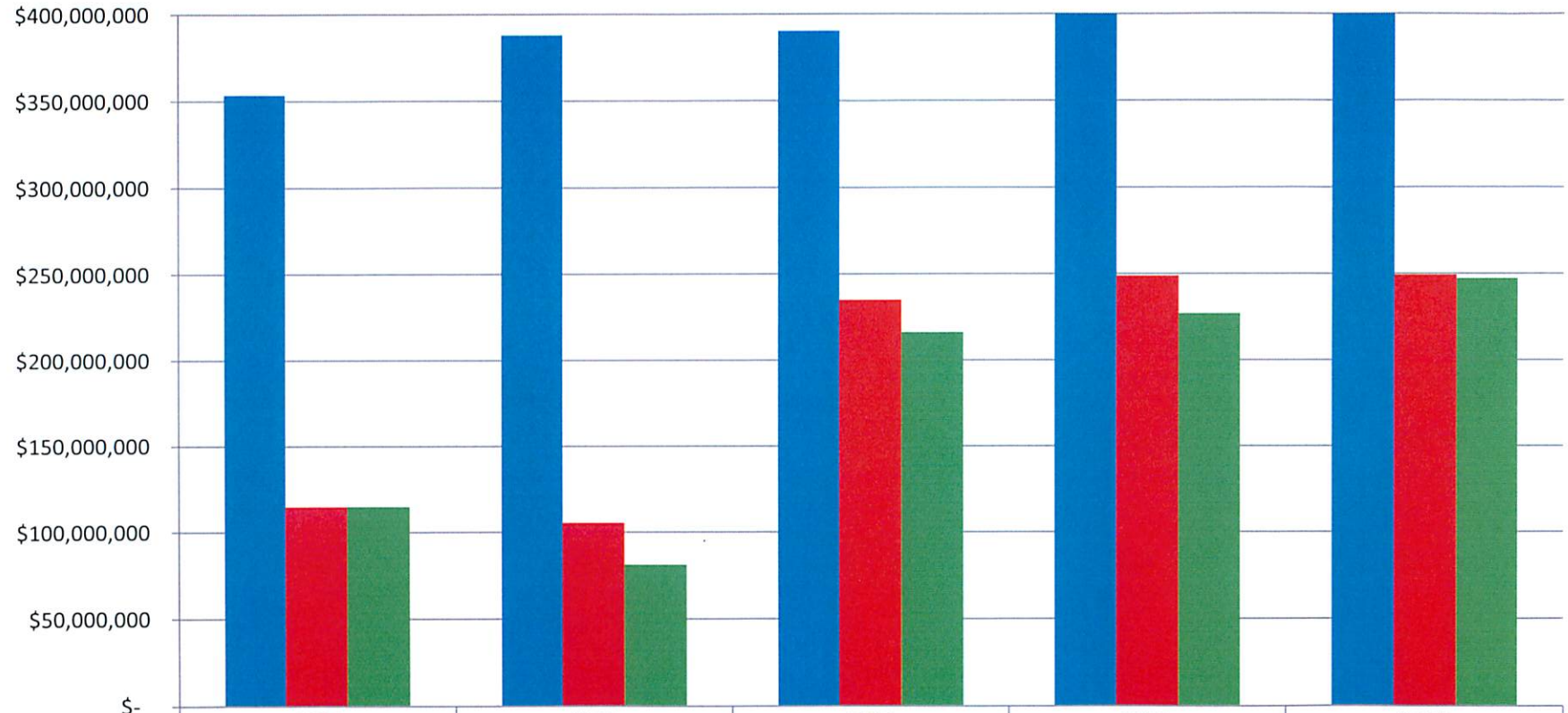
Chart No. 7
City of Pittsburgh - All Pension Funds
Pension Contributions as a Percentage of Actual W-2 Pay



	2010	2011	2012	2013	2014
City Contribution	163.8%	12.5%	12.6%	8.8%	9.6%
Debt Service	10.9%	10.8%	12.7%	13.6%	13.4%
Employees	5.1%	5.2%	5.2%	5.3%	5.1%
State Aid	7.9%	13.5%	8.3%	8.7%	8.6%

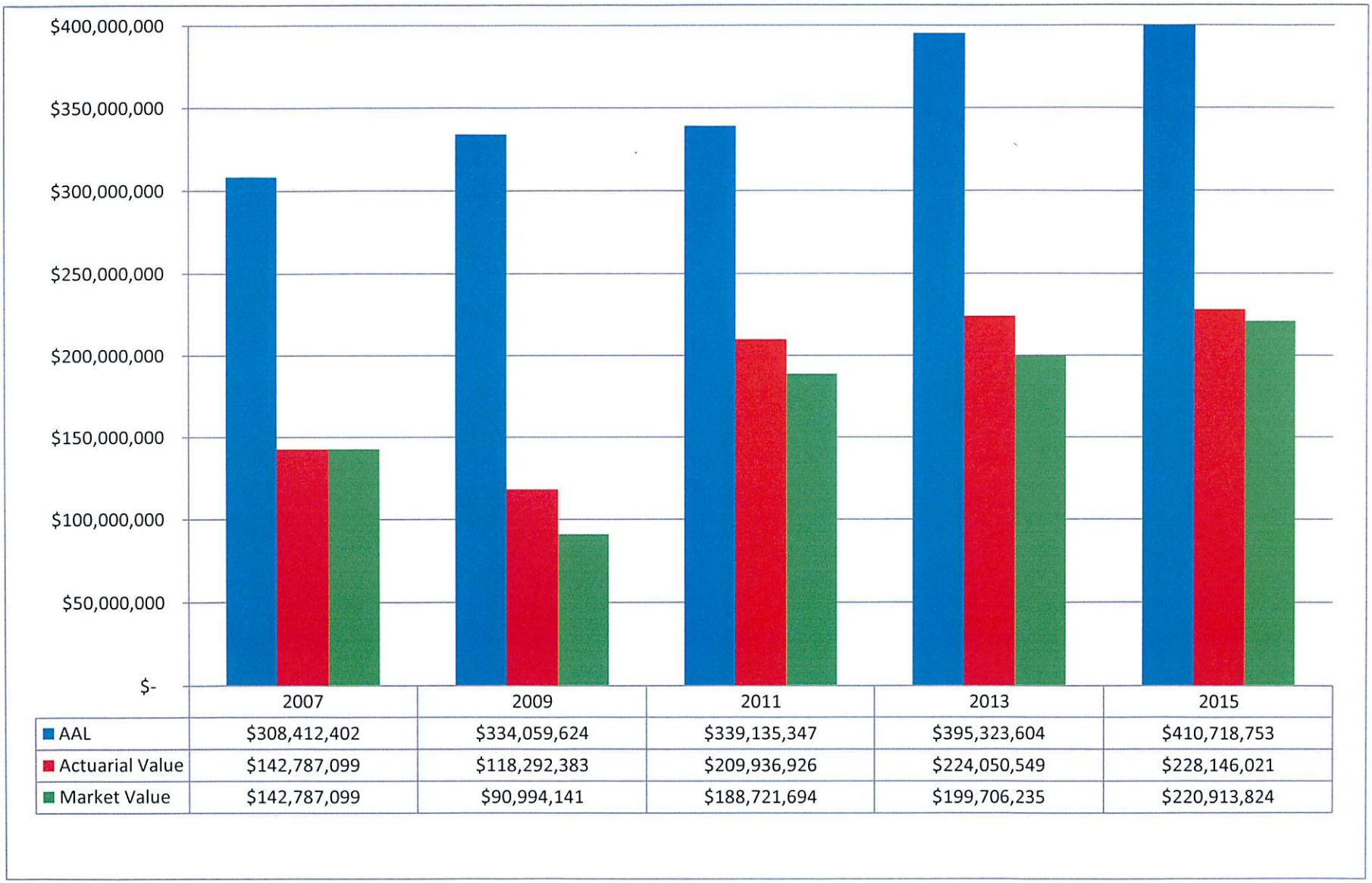
The present value of the dedicated stream of future revenues pursuant to Ordinances 42 and 44 of 2010 is included in the city contribution for 2010 making the city contribution for that year literally off the charts.

Chart No. 8
City of Pittsburgh Police Relief and Pension Fund
Comparison of Actuarial Accrued Liability with Actuarial Value of Assets and Market Value of Assets



	2007	2009	2011	2013	2015
AAL	$353,521,990	$387,857,613	$390,253,799	$440,021,893	$449,093,877
Actuarial Value	$114,889,067	$105,564,988	$235,012,542	$248,871,901	$249,288,242
Market Value	$114,889,067	$81,203,837	$216,050,208	$227,007,765	$247,240,380

Chart No. 9
City of Pittsburgh Firemen's Relief and Pension Fund
Comparison of Actuarial Accrued Liability with Actuarial Value of Assets and Market Value of Assets

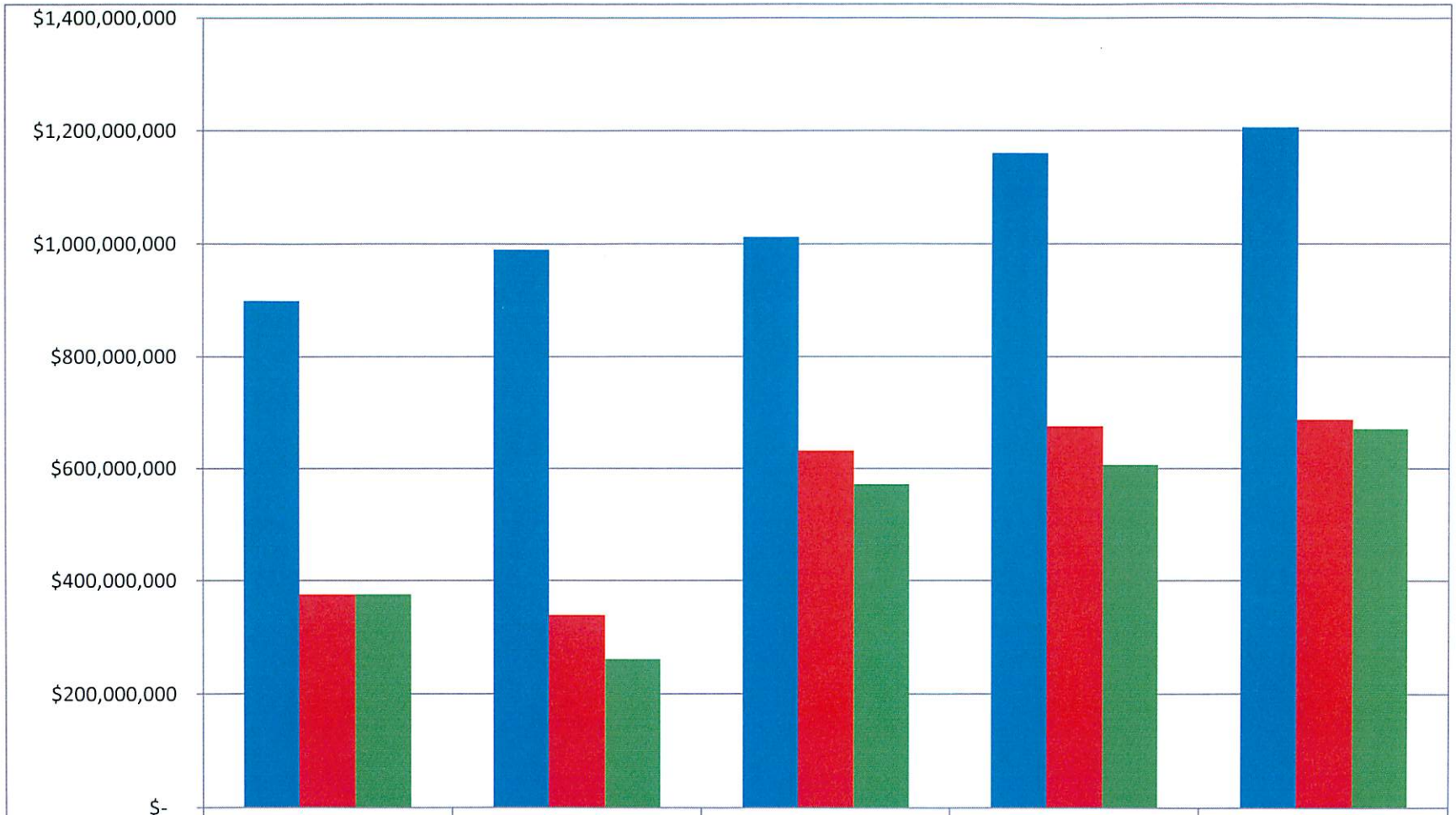


	2007	2009	2011	2013	2015
AAL	$308,412,402	$334,059,624	$339,135,347	$395,323,604	$410,718,753
Actuarial Value	$142,787,099	$118,292,383	$209,936,926	$224,050,549	$228,146,021
Market Value	$142,787,099	$90,994,141	$188,721,694	$199,706,235	$220,913,824

Chart No. 10
City of Pittsburgh Municipal Pension Fund
Comparison of Actuarial Accrued Liability with Actuarial Value of Assets and Market Value of Assets

	2007	2009	2011	2013	2015
AAL	$237,314,186	$267,615,711	$282,683,095	$324,697,069	$345,696,976
Actuarial Value	$117,692,558	$115,322,537	$187,041,985	$202,529,949	$210,113,317
Market Value	$117,692,558	$88,709,644	$166,610,549	$179,409,183	$202,613,838

Chart No. 11
City of Pittsburgh - All Pension Funds
Comparison of Actuarial Accrued Liability with Actuarial Value of Assets and Market Value of Assets



	2007	2009	2011	2013	2015
AAL	$899,248,578	$989,532,948	$1,012,072,241	$1,160,042,566	$1,205,509,606
Actuarial Value	$375,368,724	$339,179,908	$631,991,453	$675,452,399	$687,547,580
Market Value	$375,368,724	$260,907,622	$571,382,451	$606,123,183	$670,768,043

Section Eight: Glossary

Accrued Benefit
The portion of the participant's retirement benefit that is attributable to service completed before the calculation date. The calculation typically uses actual service as of the calculation date and may involve other factors such as average pay at the determination date and projected service through the retirement eligibility date.

Act 205 of 1984
Municipal Pension Plan Funding Standard and Recovery Act of December 18, 1984, P.L. 1005, No. 205. The Act controls pension funding in Pennsylvania. This Act also provides for reporting of actuarial information and for a recovery program for qualifying municipalities.

Actuarial Accrued Liability
The portion of the actuarial cost assigned to prior years.

Actuarial Assumptions
Factors used by the actuary to forecast future events. These factors include items relating to future economic conditions, the survival of the participants and their beneficiaries, and the length of employment.

Actuarial Cost Method
A means of assigning costs to periods of employment. This method is used to determine a funding level that will provide sufficient assets to pay benefits for each participant upon retirement. Act 205 specifies that the entry age normal cost method, as described in the Act, should be used for this determination.

Actuarial Experience 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.

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.

Funded Ratio
The actuarial value of assets divided by the actuarial accrued liability.

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 formulae 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. A zero or negative unfunded actuarial accrued liability does not mean that no future contributions are required, only that the current accumulation of plan assets is deemed on or ahead of schedule.

Vesting
The participant's non-forfeitable right to receive a benefit, provided that the participant survives until benefit eligibility.