

# Fire Pension Fund

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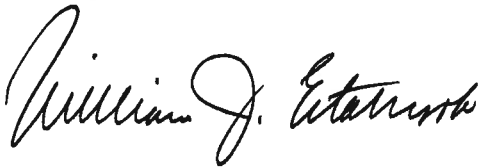
November 3, 2010

Aristotle Hutras, Executive Director  
Ohio Retirement Study Council  
88 East Broad Street  
Columbus, OH 43215

Dear Aris:

ORC 742.14 requires that the Ohio Police & Fire Pension Fund prepare an annual Actuarial Valuation of Pension Benefits. Please find enclosed our Actuarial Valuation of Pension Benefits and Actuarial Valuation of Retiree Health Care Benefits under GASB 43 as of January 1, 2010.

Sincerely,



William J. Estabrook  
Executive Director

cc Ohio Retirement Study Council  
House Financial Institutions, Real Estate, & Securities Committee  
Senate Ways & Means Committee  
Darryl K. Dever, Darryl Dever Associates



September 30, 2010

Board of Trustees  
Ohio Police & Fire Pension Fund  
140 East Town Street  
Columbus, Ohio 43215

Members of the Board:

This report presents the results of the January 1, 2010 actuarial valuation of the Ohio Police & Fire Pension Fund ("OP&F") retiree health care benefits. The valuation was prepared in accordance with, and for the purpose of financial disclosure under, Governmental Accounting Standards Board Statement No. 43 (GASB 43).

Plan benefits include medical and prescription drug benefits and OP&F's reimbursement of Medicare Part B premiums.

The actuarial assumptions and methods used in the valuation were selected in compliance with the requirements under GASB 43. The demographic assumptions are consistent with the assumptions used in the January 1, 2010 actuarial valuation of OP&F's pension plan benefits. The discount rate (interest rate) is 6.00%, selected in accordance with GASB 43.

The results of our calculations and analysis indicate that the Annual Required Contribution (ARC) for 2010 is 13.01% of payroll. This can be compared to OP&F's allocation of employer contribution toward health care benefits equal to 6.75% of payroll. Thus, the contribution allocation is approximately 52% of the ARC for 2010. The funded status (i.e., the ratio of assets to liabilities) of retiree health care benefits is 17.74%.

Detailed summaries of the financial results of the valuation are shown in this report. To the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice. It should be recognized, however, that significant differences between actual experience and these assumptions could occur. Moreover, other sets of reasonable assumptions can yield materially lesser or greater results.

Respectfully submitted,



Larry Langer, ASA, EA, MAAA  
Principal, Consulting Actuary



Bob Besenhofer, ASA, MAAA  
Director, Health and Productivity



**OHIO POLICE & FIRE  
PENSION FUND  
RETIREE HEALTH CARE BENEFITS**

**GASB 43 ACTUARIAL VALUATION  
JANUARY 1, 2010**

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# I – Executive Summary

## Introduction

This report presents the results of the actuarial valuation of the Ohio Police & Fire Pension Fund's retiree health care benefits as of January 1, 2010 under GASB 43. GASB 43 mandates a uniform accrual-based standard of measuring retiree health care and other postemployment benefits. Postemployment costs are recognized systematically over employees' years of service.

GASB 43 is applicable for large systems, such as Ohio Police & Fire, for fiscal years beginning after December 15, 2005.

The principal valuation results include:

- The actuarially required contribution rate to fund health care benefits on a full reserve basis is 13.01% of payroll.
- The funded status of the plan as of January 1, 2010, based on the accrued liability and the market value of assets as of that date, is 17.74%.

The valuation was based upon membership and financial data submitted by OP&F.

## Changes Since Last Year's Valuation

Effective January 1, 2011, Ohio Police & Fire implemented the following changes to the benefit plans in accordance with the Patient Protection and Affordable Care Act and Ohio State health reform mandates:

- Elimination of the \$2,500,000 lifetime maximum under the medical plan
- Continuation of coverage for dependent children to age 28

# I – Executive Summary

## **Actuarial Assumptions and Methods**

GASB 43 requires that the discount rate used in the valuation be the estimated long-term yield on investments that are expected to finance postemployment benefits. Depending on the method by which a plan is financed, the relevant investments could be plan assets, employer assets or a combination of plan and employer assets. The investment return should reflect the nature and the mix of both current and expected investments and the basis used to determine the actuarial value of assets.

The Ohio Police & Fire retiree health care plan is partially funded. GASB outlines two reasonable methods of developing a blended discount rate when a plan is partially funded. These methods base the proportion of plan and employer asset returns on 1) the funded ratio and 2) the percentage of ARC actually being contributed to the plan. Ohio Police & Fire has utilized the second methodology to develop a discount rate of 6.00% as of January 1, 2010. The development of this discount rate is summarized in Section V.

Separate trend rates are developed for pre-Medicare and post-Medicare medical benefits, prescription drug benefits and Medicare Part B premiums. Trend rates for medical and prescription drug plans have continued to outpace inflation for a number of years. The trend rates used in the valuation are our best estimate for future medical inflation based on the assumption that medical and prescription drug inflation will decline over time.

The actuarial assumptions and methods used for this year's valuation are outlined in Section V.



# **I – Executive Summary**

## **Medicare Part D**

Based on GASB accounting rules, the retiree drug subsidy Ohio Police & Fire receives under Medicare Part D has not been recognized in the actuarial valuation.

## **Health Care Funded Status**

As shown in Table 1, the actuarially determined accrued liability for retiree health care benefits is \$3,232,391,000. The value of assets in the Ohio Police & Fire Health Care Stabilization Fund as of January 1, 2010 is \$573,399,000. The difference between the liability and assets is an unfunded accrued liability of \$2,658,992,000. As of January 1, 2010 the ratio of assets to accrued liability is 17.74%, which can be compared to 13.87% as of January 1, 2009.

## **Health Care Contribution Rate**

Ohio Police & Fire allocates a portion of employer contributions to health care. The total estimated employer contribution for 2010 is 21.59% of payroll, of which 6.75% of payroll is allocated to the health care fund and the remainder is allocated to the pension fund.

The Annual Required Contribution (ARC) under GASB 43 is 13.01% of payroll. This amount consists of 6.69% for normal cost, plus 6.32% to amortize the unfunded accrued liability of \$2,658,992,000 as a level percentage of payroll over 30 years.

## II – Summary of Valuation Results

This section presents detailed results of the January 1, 2010 GASB 43 actuarial valuation of the Ohio Police & Fire retiree health care benefits and consists of Tables 1 to 4, as described below. All liabilities and contribution rates reflect plan costs net of retiree premiums.

- **Table 1** presents a summary of the actuarial valuation results, including the number of active and inactive members, and members and dependents currently receiving benefits as of the valuation date, plan liabilities, assets and the annual contribution rate.
- **Table 2** shows the market value of assets in the Health Care Stabilization Fund available to pay benefits as of December 31, 2009, reconciled with the value as of the end of the prior year. The actuarial value of assets is the market value.
- **Table 3** shows a reconciliation of the Unfunded Accrued Liability as of January 1, 2010.
- **Table 4** shows the Schedule of Funding Progress under GASB 43. The Schedule of Funding Progress shows the history of the plan's funded status since the initial application of GASB 43. The initial application of GASB 43 for Ohio Police & Fire is the fiscal year beginning January 1, 2006.
- **Table 5** shows the Schedule of Employer Contributions under GASB 43. The Schedule of Employer Contributions shows the history of employer contributions compared to the Annual Required Contribution for health care. The initial year is the fiscal year beginning January 1, 2006.

## II – Summary of Valuation Results

**TABLE 1**

**RETIREE HEALTH CARE BENEFITS  
SUMMARY OF RESULTS OF ACTUARIAL VALUATION  
AS OF JANUARY 1, 2010  
(\$ Amounts in Thousands)**

Item	January 1, 2010	January 1, 2009
<b>Membership Data</b>		
1. Number of Members		
a) Active Members	28,479	28,927
b) Inactive Members	141	122
c) Retirees, Spouses, and Beneficiaries	24,289	24,619
d) Children of Current Retirees	1,019	747
e) Total	53,928	54,415
2. Membership Payroll	\$ 1,895,196	\$ 1,900,935
<b>Valuation Results</b>		
3. Present Value of Future Benefits		
a) Active Members	\$ 2,995,649	\$ 3,091,471
b) Inactive Members	22,276	19,189
c) Retirees, Spouses, and Beneficiaries	1,586,908	1,520,252
d) Total	\$ 4,604,833	\$ 4,630,912
4. Accrued Liability		
a) Active Members	\$ 1,623,207	\$ 1,624,181
b) Inactive Members	22,276	19,189
c) Retirees, Spouses, and Beneficiaries	1,586,908	1,520,252
d) Total	\$ 3,232,391	\$ 3,163,622
5. Assets	\$ 573,399	\$ 438,658
6. Unfunded Liability	\$ 2,658,992	\$ 2,724,964
7. Funded Ratio	17.74%	13.87%
8. Annual Required Contribution		
a) Normal Cost	\$ 126,741	\$ 131,095
b) Unfunded Accrued Liability	122,171	125,202
c) Total Cost	\$ 248,912	\$ 256,297
9. Annual Required Contribution as a Percentage of Payroll		
a) Normal Cost Rate	6.69%	6.90%
b) Unfunded Accrued Liability Amortization Rate	<u>6.32%</u>	<u>6.48%</u>
c) Total Cost Rate	13.01%	13.38%
10. Employer Contribution to Health Care Stabilization Fund	6.75%	6.75%

## II – Summary of Valuation Results

**TABLE 2**

**HEALTH CARE STABILIZATION FUND  
AS OF DECEMBER 31, 2009  
(\$ Amounts in Thousands)**

<b>Item</b>	<b>Amount</b>
1. Market Value as of December 31, 2008	\$ 438,658
2. Contributions in 2009	
(a) Employer	\$ 126,650
(b) Member Premiums	59,149
(c) Total	\$ 185,799
3. Benefits and Administrative Expenses in 2009	\$ 169,435
4. Investment Income in 2009	\$ 103,601
5. Other Income in 2009	
(a) Recoveries and Rebates	\$ 7,955
(b) Medicare Part D Reimbursements	6,821
(c) Total	\$ 14,776
6. Market Value as of December 31, 2009 (1) + (2) - (3) + (4) + (5)	\$ 573,399
7. Rate of Return (per 2009 Comprehensive Financial Report)	20.70%

## II – Summary of Valuation Results

**TABLE 3**

**ANALYSIS OF CHANGE IN UNFUNDED ACCRUED LIABILITY  
AS OF JANUARY 1, 2010  
(\$ Amounts in Thousands)**

Item	Amount
1. Unfunded Accrued Liability at January 1, 2009	\$ 2,724,964
2. Normal Cost	131,095
3. Contributions*	133,471
4. Interest Credit at 6.00% to December 31, 2009	163,427
5. Change due to Health Care Reform	<u>8,453</u>
6. Expected Unfunded Accrued Liability at December 31, 2009 (1) + (2) - (3) + (4) + (5)	\$ 2,894,468
7. Actual Unfunded Accrued Liability at January 1, 2010	<u>2,658,992</u>
8. Net Gain (6) - (7)	\$ 235,476
9. Reasons for Net Gain	
(a) Gain from Investment Return on Actuarial Value of Assets	\$ 76,348
(b) Gain from Demographic and Claim Experience	<u>159,128</u>
(c) Grand Total	\$ 235,476

\* Employer contribution and Medicare Part D reimbursement

## II – Summary of Valuation Results

**TABLE 4**

**SCHEDULE OF FUNDING PROGRESS  
GASB STATEMENT NO. 43 DISCLOSURE  
(\$ Amounts in Thousands)**

Valuation as of January 1	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a % of Payroll
2010	\$573,399	\$3,232,391	\$2,658,992	17.74%	\$1,895,196	140.3%
2009	\$438,658	\$3,163,622	\$2,724,964	13.87%	\$1,900,935	143.3%
2008	\$526,999	\$3,623,484	\$3,096,485	14.54%	\$1,831,438	169.1%
2007	\$436,598	\$3,273,690	\$2,837,092	13.30%	\$1,782,851	159.1%
2006	\$343,040	\$3,334,861	\$2,991,821	10.29%	\$1,756,230	170.4%

The above information needs to be included in the GASB 43 disclosure as of December 31, 2010.

## II – Summary of Valuation Results

**TABLE 5**

**SCHEDULE OF EMPLOYER CONTRIBUTIONS  
GASB STATEMENT NO. 43 DISCLOSURE  
(\$ Amounts in Thousands)**

Year Ended December 31	Annual Required Contribution	Percentage Contributed
2009	\$256,297	52.08%
2008	\$285,844	48.84%
2007	\$250,163	51.62%
2006	\$264,137	52.60%

The information presented above was determined as part of the actuarial valuation as of one year prior to the dates indicated (i.e., the contribution determined by the valuation completed as of January 1, 2009 was contributed in the year ending December 31, 2009). The actual percentage contributed includes employer contributions and Medicare Part D reimbursement that Ohio Police & Fire has elected to contribute to the Health Care Stabilization Fund.

Additional information as of the latest actuarial valuation follows:

Valuation Date:	January 1, 2010
Actuarial Cost Method:	Entry Age
Amortization Method:	Level Percent of Payroll, Open
Amortization Period:	30 Years
Asset Valuation Method:	Fair Market Value

Actuarial Assumptions:

- Investment Return (Discount Rate) 6.00%
- Projected Salary Increases 5.00% - 11.00%
- Payroll Increases 4.00%
- Inflation Assumption 3.25%
- Trend Rates:

	<u>Initial Rate</u>	<u>Ultimate Rate</u>	<u>Ultimate Year</u>
• Non-Medicare	8.00%	5.00%	2017
• Non-AARP	8.00%	5.00%	2017
• AARP	6.75%	5.00%	2018
• Rx Drug	8.50%	5.00%	2018
• Medicare Part B	5.80%	5.00%	2019

The Ohio Police & Fire retiree health care plan is partially funded. The discount rate is a blended rate based on the plan and employer rates of return, using the plan rate times the percentage of the ARC contributed and the employer rate times the percentage not contributed.

### III – Retiree Health Care Benefit Provisions

#### Eligibility for Coverage

All pension benefit recipients are eligible to enroll in the plan. Members are eligible to receive a pension at age 48 with 25 years of service or 62 with 15 years of service. In addition, a member is eligible to enroll in the plan if they are receiving a disability pension or they are the survivor of a member. A member may enroll a spouse, dependent children and sponsored dependents. Only benefit recipients are eligible for reimbursement of Medicare Part B reimbursement.

Coverage begins at the time of OP&F retirement or the first of the following month, if the member requests this effective date.

#### Types of Plans

For 2010, Ohio Police & Fire offers one medical plan for members not eligible for AARP coverage and one prescription drug plan as summarized below.

Medical Coverage	
<b>In Network Coverage</b>	
Deductible	\$500/\$1,000
Coinsurance	80%
Out-of-Pocket Maximum	\$1,500/\$3,000
Office Visit Copay	\$30
Admission Copay	\$250
<b>Out-of-Network Coverage</b>	
Deductible	\$1,000/\$2,000
Coinsurance	50%
Out-of-Pocket Maximum	\$5,000/\$10,000
Office Visit Copay	50%
Admission Copay	\$250

Prescription Drug Coverage	
<b>Retail Option</b>	
Days Supply (as prescribed)	30
Tier 1	\$5
Tier 2	\$20
Tier 3	\$30
<b>Mail Service Option</b>	
Days Supply (as prescribed)	90
Tier 1	\$10
Tier 2	\$40
Tier 3	\$60



### III – Retiree Health Care Benefit Provisions

The prescription drug plan tiers are described below:

- Tier 1: Includes primarily generic drug; however, some generic drugs may fall into other tiers.
- Tier 2: Middle copay level includes many brand-name drugs.
- Tier 3: Includes several prescriptions with a Tier 1 or Tier 2 alternative.

Drugs are sorted into the 3 tiers, based on the overall clinical and pharmacoeconomic value of each particular drug and how it stacks up against other drugs in the same therapy class. Therefore, where each drug is placed within the 3 tiers is based on the effectiveness and cost of that drug.

Members who enroll in an Ohio Police & Fire health care plan are responsible for paying all or part of the cost of health care coverage through a monthly premium deduction, copayments/coinsurance and deductibles. Ohio Police & Fire pays the remaining cost. The monthly premium rates differ depending on the person’s date of retirement and Medicare status. Member premiums are a percentage of the OP&F full cost premiums. The applicable percentage is 75% for members, 50% for spouses and children of members who retired on or before July 24, 1986 and 25% for spouses and children of members who retired after July 24, 1986.

Plan	2010 Monthly Member Premiums					
	Pre-7/25/86 Retirees			Post-7/24/86 Retirees		
	Benefit Recipient	Spouse	Child(ren)	Benefit Recipient	Spouse	Child(ren)
Medical – Non-Medicare Eligible	\$ 158.74	\$ 210.17	\$ 109.85	\$ 158.74	\$ 315.25	\$ 164.77
Medical – Non-AARP Eligible	51.44	86.73	86.73	51.44	130.10	130.10
Prescription Drug	62.95	118.61	35.25	62.95	177.91	52.88

### III – Retiree Health Care Benefit Provisions

Effective January 1, 2008, Ohio Police & Fire replaced its self-insured medical plan for members and dependents age 65 or older and enrolled in Medicare Parts A and B with a choice of the B, F, or L fully insured MediGap plans offered by AARP/UHC. Ohio Police & Fire subsidizes the participant's premiums by an amount equal to a percentage of the AARP/UHC Plan L premium for the State of Ohio. The applicable percentage is 75% for members, 50% for spouses and children of members who retired on or before July 24, 1986 and 25% for spouses and children of members who retired after July 24, 1986.

For members who have been enrolled in Medicare Part B for less than 3 years, AARP/UHC applies a 30% discount to the base premium (3-6 year level) upon initial enrollment. This discount will decrease by 3% each year for 10 years until the premium is equal to the base premium level.

Members who have been enrolled in Medicare Part B for more than 6 years upon initial coverage with AARP/UHC receive a 10% surcharge to the base premium. This surcharge will continue to be applied for the full time the member is covered under the AARP/UHC plans.

There are 20 states in which AARP/UHC does not vary its premium rates by length of Medicare Part B coverage at initial enrollment. For these states, the OP&F subsidy will be set at the subsidy for the 6+ year level.

Time from Medicare Part B Effective Date	2010 Monthly Subsidy for AARP/UHC					
	State of Ohio Plan L Monthly Premium		OP&F Subsidy Pre-7/25/86 Retirees		OP&F Subsidy Post-7/24/86 Retirees	
	Benefit Recipient	Spouse	Benefit Recipient	Spouse	Benefit Recipient	Spouse
< 3 Years *	\$ 83.65	\$ 83.65	\$ 62.74	\$ 41.82	\$ 62.74	\$ 20.91
3- 6 Years	119.50	119.50	89.62	59.75	89.62	29.88
6+ Years	131.45	131.45	98.59	65.72	98.59	32.86

### **III – Retiree Health Care Benefit Provisions**

#### **Medicare Part B Premium Reimbursement**

For service and disability retirements, as well as survivors, Ohio Police & Fire reimburses the standard Medicare Part B premium (\$96.40 per month for 2010) provided the retiree is not eligible for reimbursement from any other sources.

## IV – Participant Data

The participant data as of January 1, 2010 is summarized in the following tables:

- **Table 6** summarizes the number of participants by status.
- **Table 7** summarizes the number of active members by age and years of service.
- **Table 8** summarizes the number of retired members — including spouses and surviving spouses of retirees — by health care plan enrollment (for those participants currently enrolled in retiree health care coverage).

## IV – Participant Data

**TABLE 6**

### NUMBER OF PARTICIPANTS AS OF JANUARY 1, 2010

Status	Number
<b>Active Members</b>	28,479
<b>Inactive Members</b>	
Eligible for Allowances	141
<b>Retirees and Beneficiaries</b>	
Retirees and Spouses	
Retirees	8,761
Spouses	4,953
Total	13,714
Disability Retirees	
Retirees	4,338
Spouses	2,008
Total	6,346
Children of Current Retirees	1,019
Survivors	4,186
Orphans	43
Total	25,308
<b>Grand Total</b>	53,928

There are also 781 participants who receive Medicare Part B reimbursements only.

## IV – Participant Data

### TABLE 7

#### ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2010

Age	Years of Service									Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
<b>Under 25</b>	462 \$44,611	2 \$64,963									464 \$44,698
<b>25-29</b>	1,872 \$50,826	468 \$62,213	1 \$91,149								2,341 \$53,119
<b>30-34</b>	1,182 \$51,770	1,844 \$63,420	658 \$66,462	4 \$66,059							3,688 \$60,232
<b>35-39</b>	645 \$50,942	1,489 \$62,312	2,644 \$66,049	711 \$68,665	15 \$73,854						5,504 \$63,627
<b>40-44</b>	246 \$50,403	637 \$60,822	1,717 \$64,750	2,219 \$67,991	903 \$73,301	13 \$75,540					5,735 \$66,323
<b>45-49</b>	104 \$49,054	210 \$60,254	636 \$63,725	1,228 \$67,412	1,918 \$71,943	615 \$76,465	16 \$72,134				4,727 \$69,226
<b>50-54</b>	43 \$50,134	79 \$57,731	192 \$61,466	432 \$64,804	858 \$69,956	1,236 \$74,911	584 \$77,971	16 \$82,009			3,440 \$71,504
<b>55-59</b>	13 \$44,723	20 \$61,956	63 \$59,827	137 \$65,051	285 \$68,128	494 \$70,741	667 \$76,194	221 \$82,467	1 \$76,768		1,901 \$72,587
<b>60-64</b>	3 \$57,130	13 \$57,465	21 \$57,658	32 \$60,641	74 \$65,363	68 \$68,545	114 \$70,222	215 \$77,066	34 \$74,568		574 \$70,867
<b>Over 64</b>	1 \$ 20,243		4 \$ 62,129	6 \$ 61,989	6 \$ 64,220	8 \$ 57,729	6 \$ 61,750	28 \$ 73,464	46 \$ 81,767		105 \$ 73,111
<b>Total</b>	4,571 \$50,369	4,762 \$62,352	5,936 \$65,228	4,769 \$67,511	4,059 \$71,433	2,434 \$74,226	1,387 \$76,342	480 \$79,507	81 \$78,683		28,479 \$65,218

## IV – Participant Data

**TABLE 8**

**CURRENT ENROLLMENT OF RETIRED PARTICIPANTS  
AS OF JANUARY 1, 2010**

	UHC	AARP	Prescription Drug Only	Total
<b>Not Eligible For Medicare</b>				
Benefit Recipients	5,573		74	5,647
Spouses	2,775		39	2,814
Children	975		6	981
<b>Eligible For Medicare</b>				
Benefit Recipients	499	10,914	268	11,681
Spouses	209	3,895	43	4,147
Children	36	1	1	38
<b>Total</b>	10,067	14,810	431	25,308

## V – Assumptions and Methods

### ASSUMPTIONS

DISCOUNT RATE: 6.00% per annum, compounded annually.

The development of the discount rate used in the valuation is summarized below:

#### Investment Returns

Plan Assets (Long-Term Return)	=	8.25%
Employer Assets (Estimated Short-Term Return)	=	4%

#### Based on Percentage of ARC Contributed

1. Contribution Allocated to Health Care	=	6.75%
2. Annual Required Contribution (Estimate)	=	13.38%
3. Portion of ARC Contributed: (1) / (2)	=	50.45%
4. Multiplied by long-term investment return	=	4.16%
5. Portion of ARC not Contributed: 100% - (3)	=	49.55%
6. Multiplied by short-term investment return	=	1.98%
7. Total: (4) + (6)	=	<b>6.14%</b>

Based on the methodology above, Ohio Police & Fire has selected a discount rate of 6.00%.

SALARY INCREASE: Assumed annual salary increases are as follows:

Years of Service	Salary Increase Rate
1 or less	11.0%
2	9.5
3	8.5
4	6.5
5 or more	5.0



## V – Assumptions and Methods

HEALTH CARE COST TREND RATES: The trend rate is the annual rate at which the cost of covered medical services is assumed to increase. This valuation reflects costs and premiums established for 2010 and 2011. Beginning in 2010, the per-capita costs are assumed to increase by the following percentages each year.

Year	Non-Medicare	Non-AARP	AARP	Rx	Medicare Part B
2010	0.4%	0.4%	7.00%	8.5%	5.9%
2011	8.0%	8.0%	6.75%	8.5%	5.8%
2012	7.5%	7.5%	6.50%	8.0%	5.7%
2013	7.0%	7.0%	6.25%	7.5%	5.6%
2014	6.5%	6.5%	6.00%	7.0%	5.5%
2015	6.0%	6.0%	5.75%	6.5%	5.4%
2016	5.5%	5.5%	5.50%	6.0%	5.3%
2017	5.0%	5.0%	5.25%	5.5%	5.2%
2018	5.0%	5.0%	5.00%	5.0%	5.1%
2019	5.0%	5.0%	5.00%	5.0%	5.0%
2020	5.0%	5.0%	5.0%	5.0%	5.0%
2021	5.0%	5.0%	5.00%	5.0%	5.0%
2022	5.0%	5.0%	5.00%	5.0%	5.0%

\* With the exception of AARP Medigap, 2010 trend rates reflect the established and approved 2011 per-capita rates.

## V – Assumptions and Methods

PER CAPITA HEALTH CARE COSTS: Average costs for the self-insured medical and prescription drug plans were developed based on claims experience and current enrollment, taking into consideration trend and any changes in the plans. Retiree contributions were calculated based on the average costs and the applicable subsidy percentages under the plan. For the valuation, age-specific per capita gross costs were used. Shown below are sample age-specific amounts.

### 2010 Age-Specific Monthly Gross Costs

Age	Non-Medicare Eligible Medical			Non-AARP Eligible Medical			Prescription Drugs		
	Benefit Recipient	Spouse	Child(ren)	Benefit Recipient	Spouse	Child(ren)	Benefit Recipient	Spouse	Child(ren)
20			\$ 225			\$ 147			\$ 67
50	\$ 498	\$ 331		\$ 89	\$ 103		\$ 129	\$ 132	
55	583	387		104	121		151	154	
60	689	458		123	143		179	182	
65				264	308		215	219	
70				310	361		251	256	
75				349	406		283	288	
80				381	444		309	315	
85				406	473		330	336	

AARP/UHC OUT-OF-STATE PERCENTAGE: There are 20 states in which AARP/UHC does not vary its premium rates by length of Medicare Part B coverage at initial enrollment. For these states, the OP&F subsidy will be set at the subsidy for the 6+ year level. Based on current retiree demographics, it is assumed that 10% of new retirees will reside in one of these states.

## V – Assumptions and Methods

WITHDRAWAL RATES: The following sample withdrawal rates are based on age and service (for causes other than death, disability, or retirement).

### Police

Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	10+
25	0.03660	0.03660	0.03713	0.03047	0.02618	0.02267	0.02130	0.02076	0.01827	0.01967	0.01967
30	0.03084	0.03084	0.03170	0.03018	0.02736	0.02412	0.02178	0.02033	0.01817	0.01752	0.01752
35	0.03464	0.03464	0.03600	0.03564	0.03237	0.02795	0.02402	0.02108	0.01845	0.01589	0.01437
40	0.04524	0.04524	0.04695	0.04563	0.04073	0.03419	0.02799	0.02298	0.01907	0.01454	0.00885
45	0.06156	0.06156	0.06306	0.05916	0.05187	0.04269	0.03371	0.02613	0.02006	0.01379	0.00467
50	0.08252	0.08252	0.08319	0.07518	0.06509	0.05315	0.04106	0.03062	0.02174	0.01436	0.00449
55	0.10733	0.10733	0.10668	0.09299	0.07983	0.06525	0.04991	0.03654	0.02432	0.01686	0.01106
60	0.13557	0.13557	0.13322	0.11220	0.09585	0.07887	0.06020	0.04397	0.02790	0.02157	0.02157

### Firefighters

Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	10+
25	0.00795	0.01124	0.01296	0.01355	0.01287	0.01124	0.00911	0.00765	0.00680	0.00651	0.00651
30	0.01368	0.01323	0.01236	0.01124	0.01026	0.00948	0.00882	0.00824	0.00773	0.00725	0.00725
35	0.01718	0.01484	0.01298	0.01151	0.01071	0.01049	0.01049	0.01019	0.00947	0.00821	0.00626
40	0.01916	0.01623	0.01467	0.01397	0.01374	0.01385	0.01388	0.01340	0.01199	0.00942	0.00539
45	0.01962	0.01739	0.01742	0.01863	0.01940	0.01961	0.01904	0.01790	0.01533	0.01094	0.00468
50	0.01863	0.01827	0.02118	0.02550	0.02769	0.02777	0.02595	0.02372	0.01953	0.01275	0.00423
55	0.01623	0.01886	0.02592	0.03459	0.03863	0.03836	0.03465	0.03086	0.02460	0.01490	0.00408
60	0.01247	0.01913	0.03164	0.04590	0.05220	0.05135	0.04512	0.03935	0.03057	0.01739	0.00428

## V – Assumptions and Methods

RATES OF DISABILITY AND DEATH BEFORE RETIREMENT: Rates of death are based on the RP2000 Combined Table (sex distinct) set back five years. The following sample rates apply to active members:

Age	Annual Rate of:		
	Death Male	Death Female	Disability
<u>POLICE</u>			
20	.027%	.017%	.002%
30	.038	.021	.177
40	.077	.048	1.102
50	.151	.112	2.359
55	.214	.168	2.583
60	.362	.272	2.513
62	.469	.348	2.545
65	.675	.506	
<u>FIREFIGHTERS</u>			
20	.027%	.017%	.004%
30	.038	.021	.100
40	.077	.048	.494
50	.151	.112	2.390
55	.214	.168	3.526
60	.362	.272	4.172
62	.469	.348	3.964
65	.675	.506	

## V – Assumptions and Methods

**RETIREMENT RATES:** The following rates apply to members upon reaching eligibility for retirement.

Age	Annual Rate of Retirement	
	Police	Firefighters
48	30%	25%
49	20	15
50	15	15
51	15	15
52	15	15
53	15	20
54	15	20
55	15	20
56	20	20
57	20	20
58	20	20
59	25	25
60	25	25
61	25	25
62	25	30
63	25	30
64	25	30
65	100	100

**DROP RETIREMENT RATES:** DROP participants are assumed to retire at the retirement rates shown above, with the following exceptions: Second and third years of DROP: 5%, eighth year of DROP: 100%

**RETIREMENT AGE FOR INACTIVE VESTED PARTICIPANTS:** Commencement at age 48 and 25 years of service from full-time hire date, whichever is later.

**DEFERRED RETIREMENT OPTION PLAN (DROP) ELECTIONS:** 85% of members who do not retire when first eligible are assumed to elect DROP.

## **V – Assumptions and Methods**

**DEATH AFTER RETIREMENT:** According to the RP2000 Combined Table (male only) for pensioners with one-year set forward for police and one-year set back for firefighters. RP2000 Combined Table (female only) with one-year set forward for all beneficiaries. RP2000 Combined Table (male only) for disableds, with six-year set forward for police and four-year set forward for firefighters.

**MEMBER PARTICIPATION:** 66% of eligible members are assumed to elect coverage. 80% of married members who elect coverage are assumed to elect coverage for their spouses.

**PERCENT MARRIED:** 85%

**SPOUSE’S AGE:** Wives are assumed to be three years younger than their husbands.

**ADMINISTRATIVE EXPENSE:** Per-capita costs include administrative expenses.

**UNKNOWN DATA FOR MEMBERS:** Same as those exhibited by members with similar known characteristics.

### **METHODS**

**ACTUARIAL COST METHOD:** Projected benefit method with level percentage entry age normal cost and open-end unfunded accrued liability. Gains and losses are reflected in the accrued liability. Normal cost is expressed as a mid-year amount.

**ASSET VALUATION METHOD:** Market value of assets.

**PAYROLL GROWTH:** Inflation rate of 3.25% plus productivity increase rate of 0.75%.

### **DATA**

**CENSUS AND ASSETS:** The valuation was based on members of OP&F as of January 1, 2009 and does not take into account future members. All census and asset data was supplied by OP&F.

## VI – Glossary of Terms

### **Accrued Liability**

The present value as of the valuation date of all of the prior normal costs of the plan. It is the portion of the present value of future plan benefits attributable to service accrued as of the valuation date. If all assumptions were realized and contributions equal to the normal cost were made annually from the inception of the plan, the accrued liability would equal the plan assets. Mathematically, the accrued liability is equal to the difference between (a) the present value of future plan benefits, and (b) the present value of future normal cost. Sometimes referred to as “actuarial accrued liability.”

### **Actuarial Assumptions**

Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

### **Actuarial Cost Method**

The cost of a pension or retiree health care plan should be recognized during the working lifetime of the members who are ultimately going to receive benefits, preferably by actually funding amounts sufficient to provide completely for each member’s benefit at the time of retirement. The mathematical budgeting procedure for allocating the cost of benefits is called the “actuarial cost method.” The cost method allocates the dollar amount of the “present value of future plan benefits” between the “present value of future normal cost” and the “accrued liability.” Sometimes referred to as the “actuarial funding method.”

### **Actuarially Required Contribution Rate**

The contribution rate necessary to advance fund benefits. In this valuation, that rate is equal to the normal cost plus amortization of the unfunded accrued liability over a 30-year period.

### **Advance Funding**

Funding on a full reserve basis. See definition of full reserve basis.

### **Amortization**

Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

## VI – Glossary of Terms

### **Entry Age Normal Cost Method**

A funding method based upon the premise that if all assumptions are realized, the annual contribution as a percentage of payroll will remain level from year to year. This premise means that the present value of all future normal costs at a member's hire age (i.e., entry age) is exactly equal to the present value of all future benefits.

### **Experience Gain (Loss)**

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

### **Full Reserve Basis**

The philosophy behind every proper funding method is that benefits should be funded during the working lifetime of the members. This means that at retirement, contributions plus interest on those contributions are sufficient to provide completely for the benefits expected to be paid out. This advance funding is called funding on a full reserve basis.

### **Funded Status**

The percentage of the total accrued liability that the assets represent.

### **Market Value of Assets**

The value of assets segregated in the trust fund to provide benefits. The market value is the amount that the plan could reasonably expect to receive for its investments as of the valuation date in a current sale between a willing buyer and a willing seller, that is, other than in a forced or liquidation sale.

### **Normal Cost**

The annual cost of the benefits that accrue during the year. The normal cost is the amount necessary to be contributed to pay for the benefits that are earned during the year. It is the cost of keeping the fund at the desired level if the assumptions are realized and if the assets equal the accrued liability (i.e., the cost under "normal" circumstances). Sometimes referred to as "current service cost."

### **Present Value**

The amount of funds presently required to provide a payment or series of payments in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.



## VI – Glossary of Terms

<b>Present Value of Future Plan Benefits</b>	The value as of the valuation date of all of the benefits expected to be paid in the future based upon the actuarial assumptions.
<b>Present Value of Future Normal Cost</b>	The value as of the valuation date of all of the future normal costs of the plan based upon the actuarial assumptions.
<b>Set Back in Age</b>	Used in applying rates of mortality. Set back in age means assuming that the age of a member is younger than it actually is. For example, if the male mortality is setback by one year that means a male age 50 is assumed to be age 49 for purposes of applying the mortality table.
<b>Set Forward in Age</b>	Used in applying rates of mortality. Set forward in age means assuming that the age of a member is older than it actually is. For example, if the female mortality is set forward by one year that means a female age 50 is assumed to be age 51 for purposes of applying the mortality table.
<b>Trend Rates</b>	The annual rates at which the cost of covered medical services and prescription drugs are assumed to increase.
<b>Unfunded Accrued Liability</b>	The difference between the actuarial accrued liability and the valuation assets.

