ORSC

Annual Report

The Ohio Retirement Study Commission August 21, 1992

Adequacy of Contribution Rates for the Police and Firemen's Disability and Pension Fund

Review and Recommendations

Ohio Retirement Study Commission
88 East Broad Street, Suite 1175
Columbus, Ohio 43215
Fax (614) 228-0118
(614) 228-1346

The Ohio Retirement Study Commission was created by the Ohio General Assembly in 1968 to provide continuing study of public pensions, their costs and financing. It was conceived as an agency to review the administration and financing of pensions, with power to recommend improvements in benefits, financing and the investment of funds. It must study all statutory changes in the retirement laws proposed to the General Assembly and report to the General Assembly on their probable cost, actuarial implications and desirability as a matter of public policy.

The Commission is empowered to make an impartial review from time to time of the laws governing the administration and financing of the Public Employees Retirement System, the Police and Firemen's Disability and Pension Fund, the State Teachers Retirement System, the School Employees Retirement System, the Highway Patrol Retirement System and the Volunteer Fire Fighters' Dependents Fund. It may recommend to the General Assembly any changes it considers desirable with respect to the allowances and benefits, the sound financing of the cost of benefits, the prudent investment of funds, and the improvement of the language structure and organization of the laws.

It must report to the Governor and the General Assembly concerning its evaluation and recommendations with respect to the operations of the systems and their funds.

The Commission is composed of fourteen members: three members of the House, three members of the Senate, three members appointed by the Governor, and the five executive directors of the state retirement systems, who are non-voting members.

The annual expenses of the Commission are borne by the five state retirement systems in the proportion determined by the ratio of the assets of each system to the total assets of all five systems.

Table Of Contents

MILLIMAN & ROBERTSON, INC.
Actuaries and Consultants

Suite 300
259 Radnor-Chester Road
Radnor, Pennsylvania 19087-5260
Telephone: 215/687-5644
Fax: 215/687-4236

August 10, 1992

Mr. Aristotle L. Hutras
Director
Ohio Retirement Study Commission
Suite 1175
88 East Broad Street
Columbus, OH 43215-3580

Re: Police & Firemen's Disability and Pension Fund

Dear Mr. Hutras:

As you requested, I have reviewed the Report and Recommendations resulting from the actuarial review of the adequacy of the contribution rates for the Police & Firemen's Disability and Pension Fund ("PFDPF"). I believe that the recommendations contained therein are reasonable, comprehensive and, if adopted, will maintain PFDPF's actuarial soundness.

I look forward to attending the meeting of the Ohio Retirement Study Commission on August 19th and discussing our review with you and the Commission members at that time.

Sincerely,

William A. Reimert

WAR:wat

cc: Thomas Bleakney

INTRODUCTION

This report is submitted to the Ohio General Assembly pursuant to R.C. §742.311. That section was enacted in Am. Sub. H.B. 721 in 1986, and reads as follows:

> *"The Ohio retirement study commission shall annually review the adequacy of the contribution rates provided under sections 742.31, 742.33, and 742.34 of the Revised Code and the contribution rates recommended by the actuary of the police and firemen's disability and pension fund for the forthcoming year. The Ohio retirement study commission shall make recommendations to the general assembly which it finds necessary for the proper financing of the benefits of the police and firemen's disability and pension fund."*

In fulfilling this legislative mandate, the Ohio Retirement Study Commission engaged its consulting actuary, Milliman & Robertson, Inc., to review the adequacy of the employee and employer contribution rates to support the current level of benefits provided by the Police and Firemen's Disability and Pension Fund (PFDPF). This report is based on that review, which, in turn, was based solely on information provided by PFDPF's actuary, the Wyatt Company.

BACKGROUND

PFDPF became operational in 1967 with the consolidation of 454 local police and firemen's relief and pension funds. The law establishing PFDPF provided for an actuarial valuation of the assets and liabilities of each local fund as of April 1, 1966. These local funds had assets of approximately $75 million and accrued liabilities of approximately $490 million, leaving an unfunded accrued liability of over $415 million.[1] This unfunded liability was frozen and charged to the respective local governments. The initial law allowed local governments to pay off their indebtedness over 20 years; this law was later amended to extend the funding period from 20 years to 59 years, and then to 67 years.[2] Under the present 67-year schedule the frozen initial liability will be paid off in the year 2035.

The implication of this separate payment schedule for the frozen initial liability was that *no additional liability was to be generated in the future;* that is, all liabilities created since 1966 were to be treated as "current or normal" costs and were to be covered by contributions over the future working lifetime of current active members and by investment earnings on the assets. (The anticipated investment earnings are accounted for by the interest rate assumption used to discount future benefit payments.) Under this funding method, any increase in the cost of future benefits was to be paid for by (1) increased contributions over the future working lifetime of active members; or (2) investment earnings in excess of the actuarial interest rate assumption; or (3) actuarial gains resulting from non-investment experience being other than what was expected (e.g, shorter life expectancies than assumed).

Prior to 1986 the law authorized the PFDPF board to fix the employer contribution rates for police and firemen as of the first of each year based on the annual actuarial valuations of the fund. The employee contribution rates were fixed by statute.

On July 24, 1986 the legislature enacted Am. Sub. H.B. 721 which repealed the board's authority to fix the employer contribution rates on the basis of the actuarial evaluation. The Act froze the policemen's employer contribution rate at 19.5% of payroll and the firemen's employer contribution rate at 24% of payroll; these were the rates certified by the board for calendar year 1986, including 3.94% of payroll for police health care costs and 5.08% of payroll for firemen health care costs.[3] This action was taken in response to employers' concerns over the ever increasing and fluctuating rates. The Act also increased the employee contribution rate from 8.5% to 9.5% of payroll, and required the Ohio Retirement Study Commission to report annually to the General Assembly on the adequacy of the employer and employee contribution rates established under the Act.

---

[1] PFDPF Comprehensive Annual Financial Report (1990)

[2] Am. Sub. H.B. 642 (1965); Am. H.B. 756 (1967); Am. Sub. H.B. 215 (1969)

[3] See addendum on last page of this report.

BENEFIT IMPROVEMENTS SINCE 1986

Prior to the enactment of Am. Sub. H.B. 721 in 1986, benefit improvements were funded by increasing the contribution rates and also by assuming greater investment earnings through changes in the actuarial interest rate assumption.

The frozen rates of contribution established under Am. Sub. H.B. 721 significantly decreased the flexibility previously accorded to the PFDPF board to fund any increase in the cost of future benefits. Any increased costs resulting from benefit improvements could no longer be funded by increased contribution rates; such increased costs could only be funded through investment gains or other actuarial experience gains. Should PFDPF realize negative actuarial experience such as lower investment earnings or higher than anticipated benefit costs, PFDPF would become steadily disfunded over the future.

The legislature enacted several major benefit improvements in PFDPF since the contribution rates were frozen. In 1986 Am. Sub. H.B. 721 granted an annual 3% COLA for members retiring after July 24, 1986. The actuarial cost of this benefit change was 3.51% of payroll for police and 3.80% of payroll for firemen.[4]

Also, in 1986 Am. Sub. S.B. 112 was enacted which increased monthly survivor benefits from $256 to $310 for spouses, and from $68 to $93 for dependent children. It also provided an ad hoc post-retirement increase to members who retired before February 28, 1984 on an annual pension of less than $13,000. The increase was the greater of $600 per year or an amount necessary to increase the member's annual pension to $4,200. The actuarial cost of these benefit changes amounted to 0.93% of payroll for police and 0.99% of payroll for firemen.[5]

In 1988 the legislature enacted Am. Sub. H.B. 389 which reduced normal retirement age from 52 to 48. It also granted an annual $360 COLA for members who retired before July 24, 1986 on an annual pension of less than $18,000.[6] It further increased monthly survivor benefits from $310 to $410 for spouses, and $93 to $118 for dependent children. The actuarial cost of these benefit changes totalled 6.70% of payroll for police and 5.95% of payroll for firemen.[7]

In 1989 Am. Sub. H.B. 377 was enacted which provided a $1,000 lump sum death benefit. The actuarial cost of this benefit change was 0.08% of payroll for police and 0.09% of payroll for firemen.[8]

In addition to the increased costs resulting from the benefit changes enacted by the legislature, PFDPF continued to experience double-digit increases in retiree health care costs which is financed on a pay-as-you-go basis. Though escalating retiree health care costs are a continuing problem for each of the state pension funds, PFDPF is particularly hard hit by the younger retirement ages of its members who are not eligible for Medicare until age 65. The cost of providing health care coverage for Non-Medicare eligible individuals is three to four times higher than for Medicare eligible individuals. In 1986 retiree health care costs amounted to 5.63% of payroll in PFDPF; by 1991 such costs had increased to 7.30% of payroll.

The following table summarizes the effects of actuarial assumption changes, benefit improvements, fund experience and growth in medical costs on the PFDPF contribution rates since 1986.

---

[4] PFDPF Actuarial Evaluation (October 23, 1987)
[5] PFDPF Actuarial Evaluation (October 23, 1987)
[6] The $18,000 is increased $500 each year thereafter.
[7] PFDPF Actuarial Evaluation (April 24, 1990)
[8] PFDPF Actuarial Evaluation (November 26, 1990)

Effects of Assumption Changes, Benefit Improvements, Fund Experience and Medical Cost Growth on PFDPF Actuarial Rates Since 1986

Date	Employee & Employer Contribution	State Subsidy	Total Actual Contribution	Actuarial Rate % as of 1/1	Increase due to Actuarial Assumptions & Methods	Increase due to Benefit Changes	Increase due to Pension Plan Experience	Increase due to Health Insurance	Expected Rate % Following Year
Police									
1986				27.80%		4.44% [1]	(1.69)%	0.57%	31.12%
1987	29.00%	1.02%	30.02	31.12	0.63%		(0.86)	(0.21)	30.68
1988	29.00[2]	0.88	29.88	32.386	(4.46)[3]	6.70 [4]	(1.04)	0.91	34.49
1989	29.50	0.78	30.28	34.49		0.08 [5]	0.35	(0.64)	34.28
1990	29.50	0.68	30.18	34.28	0.20		0.53	1.04	36.05
1991	29.50	0.65	30.15	36.05					
Total					(3.63)	11.22	(2.71)	1.67	
Firemen									
1986				31.25%		4.79%[1]	(2.50)%	0.57%	34.11%
1987	33.50%	1.12%	34.62	34.11	0.90		(2.09)	(0.21)	32.71
1988	33.50[2]	0.98	34.48	34.027	(4.39)3	5.95 [4]	1.33	0.91	37.82
1989	34.00	0.86	34.86	37.82		0.095	(1.67)	(0.64)	35.60
1990	34.00	0.74	34.74	35.60	(0.24)		0.01	1.04	36.41
1991	34.00	0.75	34.75	36.41					
Total					(3.73)	10.83	(4.92)	1.67	

[1] Benefit changes enacted in Am. Sub. H. B. 721 and Am. Sub. S. B. 112.

[2] Increase to 29.50% for police and 34.00% for firemen due to change in employee contribution from 9.5% to 10% in Am. Sub. H. B. 389 effective October 1, 1988.

[3] Change due to increasing interest rate assumption from 7.75% to 8.25% and salary scale assumption from 5.5% to 5.75%, together with change due to new assumption on occurence of disability by type.

[4] Benefit changes enacted in Am. Sub. H. B. 389.

[5] Benefit changes enacted in Am. Sub. H. B. 377.

[6] Increase of 1.70% due to revised data.

[7] Increase of 1.31% due to revised data.

SUMMARY OF ACTUARIAL REVIEW

The actuarial review of the adequacy of the contribution rates for PFDPF was prepared by Milliman & Robertson, Inc., the consulting actuary for the Ohio Retirement Study Commission, and was based solely on various actuarial reports and analyses submitted by the Wyatt Company, the actuary employed by the PFDPF board. That review, along with the Wyatt Company's response, immediately follows this section of the report.

Based on its analysis, M&R concludes that in order to maintain the actuarial soundness of PFDPF there is a need for either an increase in contributions from employers, members or the state *or* a reduction in the benefits provided to members *or* some combination thereof. In the absence of such changes, the current employer and member contribution rates which are frozen by statute are unlikely to be able to support the benefits currently provided by PFDPF (including post-retirement health care benefits). This means that there is likely to be a steady erosion of PFDPF's reserves, thereby requiring ever increasing contribution rates in the future to pay for promised benefits.

M&R points to the pay-as-you-go financing of post-retirement health care benefits as a particular concern. In 1991 retiree health care costs alone were 7.3% of payroll, and are expected to increase to approximately 20% of payroll by 2005 unless significant reductions are made in the level of coverage provided and/or significant contributions are required from retirees to help pay for the cost of coverage. The analysis indicates that the principal reason for this rise in health care costs as a percent of payroll is that retirees health care costs have been increasing at an average annual compounded rate of 15.8% while payroll has been increasing at a much lower rate of 6.9% over the period from 1980 to 1991.

The following table documents the actuarially recommended contribution rates versus the actual contribution rates from 1981 to 1991.[9] In its 35-year forecast study the Wyatt Company states that the "Actuarially determined rates for 1987 through 1990 have exceeded the statutory rates, and this brings into question the long-term financial stability of the Fund. This concern is heightened by the explosive growth in medical costs, since the statutory rates make no allowance for increases due to medical inflation. These concerns have prompted the Board of Trustees of the Fund to accept the recommendation of the Wyatt Company that the long-term financial stability of the Fund be examined via a forecast study." The actuarially determined rates for 1991 continue to exceed the statutory rates by even wider margins.

Year	Police (% of active member payroll)		Firemen (% of active member payroll)	
	Recommended	Actual	Recommended	Actual
1981	25.73	25.73	30.85	30.85
1982	26.61	26.61	32.38	32.38
1983	28.37	28.37	33.49	33.49
1984[10]	30.85	28.37	36.13	33.49
1985	29.46	29.46	34.02	34.02
1986[11]	27.80	29.00	31.25	33.50
1987	31.12	29.00	34.11	33.50
1988[12]	32.38	29.50	34.02	34.00
1989	34.49	29.50	37.82	34.00
1990	34.28	29.50	35.60	34.00
1991	**36.05**	**29.50**	**36.41**	**34.00**

9 PFDPF Comprehensive Annual Financial Report: Actuarial Section (1990); actual rates from 1986 to 1991 exclude state subsidy.

10 The legislature froze the 1984 employer contribution rate at the 1983 level in Am Sub. H.B. 291 (1983).

11 The legislature repealed the board's authority to fix the employer contribution rate, froze the employer rate at 19.5% for police and 24.0% for firemen, and increased the employee rate from 8.5% to 9.5% in Am. Sub. H.B. 721 effective August 1, 1986.

12 The legislature increased the employee contribution rate from 9.5% to 10.0% in Am. Sub. H. B. 389 effective October 1, 1988.

The table below gives a breakdown of the actuarially recommended rate for pension and disability benefits and health care benefits for this same period.[13]

Year	Pension & Disability		Health	Total Actuarial Rate	
	Police	Fire		Police	Fire
1981	22.84%	27.96%	2.89%	25.73%	30.85%
1982	23.76%	29.53%	2.85%	26.61%	32.38%
1983	25.22%	30.34%	3.15%	28.37%	33.49%
1984	26.12%	31.40%	4.73%	30.85%	36.13%
1985	24.55%	29.11%	4.91%	29.46%	34.02%
1986	22.17%	25.62%	5.63%	27.80%	31.25%
1987	24.92%	27.91%	6.20%	31.12%	34.11%
1988	26.39%	28.03%	5.99%	32.38%	34.02%
1989	27.59%	30.92%	6.90%	34.49%	37.82%
1990	28.02%	29.34%	6.26%	34.28%	35.60%
1991	**28.75%**	**29.11%**	**7.30%**	**36.05%**	**36.41%**

The 35-year forecast study prepared by the Wyatt Company examines the long-term financial soundness of PFDPF. This study covers the 35-year period beginning January 1, 1990 and ending December 31, 2024; however, projected actuarial valuation results are made for the 35 years 1991 through 2025. The study includes seven different scenarios with varying sets of assumptions regarding mortality, investment earnings, medical expense growth and certain retiree medical cost sharing alternatives.

The appendix provides a brief description of the different assumptions used in each scenario, and a summary table of the projected actuarial results under each scenario. The key items of the table regarding the long-term financial stability of PFDPF are the funded status, the actuarially determined contribution rate for pension and disability benefits, the pay-as-you-go contribution rate for health care benefits, and the total contribution rate.

In general, the study concludes that the current statutory contribution rates of 19.5% for police, 24.0% for firemen and 10% for active members, together with the statutory scheduled payment of the frozen initial liability, should maintain the financial soundness of PFDPF for at least the next 35 years, *provided retiree health care costs are limited to a constant 6.5% of payroll.* This proviso assumes that the growth in medical care costs will increase about 5% per year, which is the general inflation assumption used by PFDPF. As indicated above, retiree health care costs have been increasing at an average annual compounded rate of 15.8% over the past eleven years, and have been calculated to be 7.3% of payroll on a pay-as-you-go basis in 1991.

Under more realistic assumptions regarding the growth in medical costs which anticipate double-digit increases for the intermediate term future that gradually decrease to slightly above the rate of general inflation, the study concludes that the current statutory rates would be inadequate to maintain the financial soundness of PFDPF. M&R notes that even under the most favorable scenario which assumes significant retiree cost sharing for dependent medical coverage, the contribution rates would have to increase dramatically over the next 35 years to approximately 70% for police and 60% for firemen; currently, the contribution rates total 30.15% for police and 34.75% for firemen. M&R further notes that the retiree medical cost sharing recently adopted by PFDPF is well below the level of cost sharing assumed by the Wyatt Company in its actuarial projections under this scenario.[14]

13 PFDPF Actuarial Evaluations.

14 Effective July 1, 1992 retirees who are under age 65 and receiving an annual pension of at least $10,000 pay $10.00 per month; retirees who attain age 65 and are receiving an annual pension of at least $10,000 pay $5.00 per month; spouses under age 65 pay $40.00 per month; and dependent children between the ages of 18 and 22 pay $50.00 per month.

M&R concludes that the actuarial assumptions used by the Wyatt Company to value the cost of pension and disability benefits in 1991 are reasonable in the aggregate, and cautions against making changes in any individual assumption without considering changes in the other various assumptions. Changes which are considered to be appropriate to any individual assumption are likely to require offsetting changes in the other various assumptions, hence minimizing the effect on total costs. M&R also concludes that the assumptions used to project the cost of post-retirement medical benefits which anticipate double-digit increases for the intermediate term future that gradually decrease to slightly above the general inflation rate are also reasonable.

In its response to M&R's review, the Wyatt Company concurs with the conclusion that the statutory contribution rates are inadequate to support the benefits currently provided by PFDPF. The Wyatt Company states that "Mr. Reimert's conclusion regarding the future financial solvency of the Fund is identical to that drawn from our Forecast Study: with current levels of pension, disability and health care benefits, and expected future trends in health care costs, the current statutory contribution rates are inadequate."

3. the pay-as-you-go cost of post-retirement medical benefits can be reasonably expected to increase from 7.3% of payroll as reported in the 1991 Actuarial Evaluation to approximately 20% of payroll by 2005 unless very significant reductions are made in the level of coverage provided and/or very significant additional contributions are required from retired members to help pay for the cost of coverage; and,

4. the current employer and member contribution rates are unlikely to be able to support the benefits currently provided by PFDPF (including post-retirement medical benefits).

We will discuss below our reasons for reaching these conclusions.

Materials utilized in our review

The various actuarial reports prepared by the Wyatt Company which were provided to us are:

1. Quinquennial Evaluation - January 1, 1982 to December 31, 1986 (dated March 21, 1988).

2. Analysis of Post-Retirement Medical Benefits as of January 1, 1991 (dated June 13, 1991).

3. Thirty-five year Forecast Study.

4. Actuarial Evaluation to determine the Actuarial Rate Percent of Contribution as of January 1, 1991 (dated November 20, 1991).

In addition, we also received copies of the Comprehensive Annual Financial Report for the years ended December 31, 1989 and December 31, 1990. We were not provided copies of entry age normal cost calculations or letters providing disclosure figures in accordance with GASB Statement No. 5, which we requested from Waytt.

In order to evaluate the adequacy of the statutory rates, the Board of PFDPF requested an Analysis of Post-Retirement Medical Benefits and a 35-year Forecast Study, both of which were prepared by the Wyatt Company. In addition to reviewing those two studies, we have also reviewed the most recent Quinquennial Evaluation of the Experience under PFDPF in order to form an opinion regarding the degree of conservatism, if any, inherent in the current actuarial assumptions.

Current and Required Contributions

The current employer and member contribution rates are established by statute. The employer contribution rate for Police is 19.5%, for Firemen, 24.0% and the member contribution rate is 10.0%. In addition, there are state subsidies of approximately $5.7 million per year to help finance pension benefits. These are the total contributions available to support the benefits provided by the Police & Firemen's Disability and Pension Fund of Ohio including the cost of providing post-retirement health insurance benefits. In the aggregate these rates total approximately 30.15% for Police and 34.75% for Firemen.

The total contribution rates required to support PFDPF indicated in the Actuarial Evaluation of the January 1, 1991 are 36.05% for Police and 36.41% for Firemen. On this basis the actual contribution rates are insufficient to fund the ongoing actuarial cost of the system, including the current year pay-as-you-go cost for the health insurance benefits.

Review of Current Actuarial Assumptions

We reviewed the Quinquennial Evaluation Report in order to determine the appropriateness of the current actuarial assumptions regarding salary growth, mortality among healthy retirees, and termination and retirement rates among active members. We examined the current investment portfolio of the fund in order to determine the reasonableness of the assumed rate of investment return. Finally, we also considered the historical information provided in the Comprehensive Annual Financial Reports and the Actuarial Evaluation as of January 1, 1991 in order to monitor the growth of retiree health insurance costs relative to payroll.

In discussing our analyses and conclusions regarding the actuarial assumptions, we will first discuss the investment return and salary growth assumptions since they should reflect consistent underlying economic assumptions regarding inflation, productivity growth, etc. We will then move to the mortality assumption among healthy retirees, followed by the termination and retirement rates among active members. These three demographic assumptions have a major effect on actuarially computed costs of retirement benefits. We will then discuss the rate of increase in retiree health costs and payroll.

Before discussing our analyses of the actuarial assumptions, it may be well to review in general terms the effect of the various items of actuarial assumptions on the valuation. An actuarial valuation involves a projection of the salaries and service of present members of the system and a determination of the value of the expected benefits payable to them. Thus, if many members die or terminate before becoming eligible for benefits, required contributions to the fund will be smaller than if the members experience lower mortality or turnover. Similarly, a high investment yield will mean greater investment income so that there is a corresponding reduction in required contributions.

Because of the interplay of the various elements of actuarial assumptions it is not adequate to review only one of the assumptions but rather the overall effect must be evaluated. This interplay is well illustrated by recent trends in investment income and salary progression. Probably most systems have earned investment income in the last few years well in excess of the actuarial interest assumption. Thus, contributions would seem to be overstated because the interest assumption was too low. But many systems have also seen salaries increase faster than the assumed trend in salary progression. Thus, contributions were understated because benefits receivable at retirement were underestimated. As a consequence, the overstatement of the contribution due to a low assumed interest rate was offset by the understatement of the contribution due to a low assumed salary progression.

The overall reasonableness and consistency of the various actuarial assumptions must therefore be the primary consideration in our review.

With respect to assumed rates of future investment returns, we reviewed the information regarding the distribution of investments as of December, 1989 and 1990 from the Comprehensive Annual Financial Reports and the Actuarial Evaluation as of January 1, 1991. Ideally, the investment return assumption should reflect the long-term investment strategy and asset allocation targets for the Fund's investment managers. We relied on the allocation of investments as of December, 1989 and December, 1990 as being representative of the likely relative allocations among the various asset classes in the future. Based on this data, it appears that a long-term real rate of return on plan assets above the rate of inflation might be expected to approximate 4% assuming that approximately 55% of the fund's assets are invested in government and corporate bonds, 33% in stocks and venture capital, 7% in real estate and 5% in short-term investments. This assumption would be generally consistent with actual historical returns during the period 1926 through 1991, as well as reasonable estimates regarding the future. The Actuarial Evaluation indicates that the current investment return assumption is 8-1/4% and that the assumed rate of inflation is 5% which implies an assumed real rate of return of approximately 3-1/4%. If we were to continue to use the 5% inflation assumption, which seems reasonable, this would imply that there is perhaps 3/4 of 1% of conservatism in the current assumed investment return rate; i.e., the investment return assumptions could be increased to 9% (5% inflation plus 4% real returns).

With respect to salary growth, the current actuarial assumption is 5-3/4% which is divided into two components:

1. Promotional increase of 3/4 of 1% per year; and,

2. Inflationary increases of 5% per year.

We had two sources of information available to us to guage the appropriateness of this assumption. First of all, the Comprehensive Annual Financial Reports indicated average salary levels among covered members for the period 1979 through 1990. Those figures indicated that the annual rate of increase in average earnings was approximately 6% over that 11-year period. During the same time, the Consumer Price Index increased by approximately 5.8%. This indicates that during this recent 11-year period, average earnings increased approximately 2/10 of 1% per year faster than the rate of inflation. (It is worth noting that the rate of increase in average salaries should measure only the inflationary component of salary increases because the average salary in any given year should reflect approximately the same distribution of active members among various ranks and job levels. This serves to "hide" the effect of promotional increases.)

Additional historical data regarding rates of salary increase were summarized in the Quinquennial Evaluation covering the period 1967 through 1986. These rates track individual members over successive 5-year periods and hence allow the measurement of both inflationary and promotional increases. This data indicates that the average rate of annual increase over that 20-year period was approximately 8.70% which can be compared with the rate of annual increase in the Consumer Price Index over the same period of approximately 6.25%. Thus, it appears that the total rates of salary increase over that 20-year period have been almost 2-1/2% higher per year than the rate of inflation when the effect of promotional increases is included. Thus it appears that the salary increase rate may be understated. Based on the limited data available to us, we are reluctant to propose specific changes in the salary growth assumption, but it appears reasonable to preliminarily assume that the salary growth assumption may be understated by about the same amount as the rate of investment returns, or approximately 3/4 of 1%.

Assuming that both the investment return and salary growth assumptions are understated by similar amounts will simplify the additional analysis required to review the adequacy of the current contribution rates. This is because the assumed rate of salary growth is offset by the assumed rate of investment returns in the calculation of actuarial values during the period of time that a member is actively employed. For this reason many people talk about the spread between the investment return assumption and the salary growth rate as being more important than the actual level of the investment return or the salary growth assumption. For purposes of moving forward with our analysis we will assume that the assumed spread between the current investment return assumption and the current salary growth assumption is reasonable.

With respect to retiree mortality, the most recent Quinquennial Evaluation indicates that the current mortality assumption did a fairly good job of replicating actual experience during the period 1982 through 1986. The evaluation also indicates that PFDPF has been seeing a pattern of continuing improvements in mortality among retirees which serve to lengthen the life expectancies of retired members. This is a common phenomenon with the vast majority of retirement systems due to the continuing improvement in life expectancy. Thus, it is reasonable to expect that the current mortality assumption for healthy retirees is probably already marginal if not inadequate assuming that mortality has continued to improve since the 1982-86 study period. Moreover, most actuaries anticipate that life expectancies will continue to increase in the future.

The Wyatt Company estimated the effect of possible improvements in the life expectancy of retired members in their 35-year Forecast Study by estimating future mortality improvements via the age setback technique under which they set back the mortality table for healthy retirees by 3 years and 5 years. A similar result can be obtained by using an interest rate approximately 3/4 of 1% lower than the actual assumed investment returns after retirement. This again has the very convenient result of offsetting our estimate of the extent to which the investment return assumption could be increased. Thus, our overall appraisal of the appropriateness of the investment return, salary growth and post-retirement mortality assumptions is that they, in combination, are reasonably representative of expected future experience under PFDPF.

With respect to termination and retirement rates among active members, we believe that the current assumptions are reasonably related to experience during the period 1982 through 1986 and have no reason to suggest that a modification is appropriate.

Finally, with respect to the rate of increase in retiree health costs and payroll, it is possible to estimate the average growth rate in retiree health costs and payroll over the period 1980 through 1991 based on data in the Comprehensive Annual Financial Reports. This analysis indicates that retiree health costs have been increasing at an average annual compounded rate of 15.8% while payroll has been increasing at a much lower rate of 6.9%. Moreover, the disparity between the rate of increase in healthcare costs in 1991 was even greater than the difference over the last 11 years in that retiree health costs increased 14.6% while payroll only grew 3.4% (for a difference of over 11%!). Thus we see no reason to believe that the healthcare costs will remain stable as a percentage of payroll in the near term future at either the 6.5% of payroll rate assumed in several of the 35-year forecasts or at the 7.3% rate indicated applicable for 1991 i . the Actuarial Evaluation.

Conclusions

Based on this analysis, we believe that the actuarial assumptions utilized to project the cost of benefits other than the retiree health insurance benefits in the 1991 Actuarial Evaluation are reasonable in the aggregate. But we believe that the cost of retiree health insurance benefits is likely to grow significantly in the future when expressed as a percentage of payroll.

The Wyatt Company prepared projections summarized on pages 35 through 40 of the 35-year Forecast Study which are based on assumptions regarding the growth in medical care costs which we believe are reasonable in that they anticipate high double-digit rates of increase in health insurance costs for the intermediate term future with respect to retirees under age 65 which gradually grade down to health cost increase rates slightly above the rate of inflation. The most favorable of these three projections (Table E(6) on page 39 and 40 of the 35-year Forecast Study), which anticipates significant contributions for dependents coverage, indicates that contribution rates for Police and Firemen will have to increase dramatically over the next 35 years to approximately 70% and 60% of payroll, respectively. (As indicated earlier, these rates are currently 30.15% and 34.75%, respectively.) It is worth noting that the contributions adopted by PFDPF effective July 1, 1992 are well below the level of retiree contributions assumed in the projections summarized in Table E(6).

On the basis of our understanding of the various analyses and reports prepared by the Wyatt Company and our appraisal of the reasonableness of the various scenarios analyzed in the 35-year forecast, we believe that there is a need for either significant increases in the contribution rates from employers, members or the state or significant reductions in the benefits provided to the members (or some combination of these) in order to maintain the actuarial soundness of the Police & Firemen's Disability and Pension Fund of Ohio. In the absence of such changes, PFDPF is likely, in our opinion, to be steadily disfunded over the future.

We would welcome the opportunity to review our analyses and conclusions with you and the members of the Commission or other interested parties at your convenience.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

William A. Reimert, F.S.A.
Consulting Actuary & Principal

WAR:wat

THE *Wyatt* COMPANY

ACTUARIAL SERVICES
COMPENSATION PROGRAMS
ADMINISTRATIVE SYSTEMS
INTERNATIONAL SERVICES
ORGANIZATION SURVEYS

400 OHIO SAVINGS PLAZA
CLEVELAND, OHIO 44114
(216) 696-6250
FACSIMILE: (216) 687-0675

EMPLOYEE BENEFITS
EMPLOYEE COMMUNICATIONS
RISK MANAGEMENT
INSURANCE CONSULTING
HEALTH CARE CONSULTING

April 24, 1992

Mr. Henry E. Helling, III
Executive Director
The Police and Firemen's Disability
and Pension Fund of Ohio
230 East Town Street
Columbus, Ohio 43215-4650

Re: Milliman & Robertson Report to Ohio Retirement Study Commission

Dear Henry:

We have reviewed the April 16, 1992 letter from William Reimert to Mr. Aristotle Hutras, which letter is a preliminary draft of the Milliman & Robertson report to the Ohio Retirement Study Commission (ORSC). The report has two functions: (1) to assess the reasonability of the actuarial assumptions used by Wyatt and (2) to comment upon the projected financial solvency of the PFDPF. Neither of these aspects of the report holds any surprises: the assumptions are found to be reasonable and the outlook for the Fund in general mirrors that presented in our Forecast Study.

Mr. Reimert's conclusion regarding the future financial solvency of the Fund is identical to that drawn from our Forecast Study: with the current levels of pension, disability and health care benefits, and expected future trends in health care costs, the current statutory contribution rates are inadequate. This observation is presented in Section F, Item 6(b), (page 45) of the Forecast Study.

Mr. Reimert's report, however, unlike our Forecast Study, emphasizes only the negatives, and makes no positive observations: we showed that if health care costs could be limited to 6.5% of payroll annually, then the financial integrity of the Fund could be maintained by the current contribution rates. Mr. Reimert (page 7) writes: "we see no reason to believe that the health care costs will remain stable as a percentage of payroll in the near term future at either the 6.5% payroll rate... or the 7.3% rate indicated... for 1991.... ." We prefer to encourage the Board to continue to aggressively monitor the cost and keep exploring ways to reduce costs. In other words, a categorical denial up front of the likelihood of a successful program to maintain the 6.5% level is we think, at this time at least overly pessimistic.

While Mr. Reimert agrees with our projection that the pay-as-you-go health care cost can be expected to grow to 20% of payroll by the year 2005 (see Table E(4), page 35, of the Forecast Study), he provides only a narrow analysis of the implications this holds for the Fund. Specifically, his solution calls for "very significant reductions... in the level of coverage provided and/or very significant additional contributions... from retired members."

We think that this type of immediate drastic action is not the only viable approach, nor does the absence of such major changes necessarily spell financial insolvency for the Fund. It is important to adopt a long-term perspective rather than a quick fix, and to analyze other factors which will have a bearing on the Fund's financial position.

For example, our Forecast Study (Table E(7), page 41) shows the dramatic effect improved investment performance can have on the financial stability of the Fund. In fact, we already expect to see such an effect in the 1992 evaluation, based on the high return realized in 1991. This possibility, was not at all discussed by Mr. Reimert. Also, the possibility of national health care reform was not mentioned.

Moving on, in analyzing the actuarial assumptions used for pension and disability benefits, Mr. Reimert focuses on the rates of investment return and salary growth, mortality among healthy retirees, and termination and retirement rates for active members. In the aggregate these assumptions are found to be reasonable.

Mr. Reimert concludes that both the 8.25% investment return and 5.75% salary increase assumptions are understated by approximately .75%, but also points out that the spread between the rates is more critical than the rates themselves. It should be noted that the analysis of the investment return makes no mention of the fact that book value assets are used for the actuarial evaluations, not market value.

The mortality assumption for healthy retirees and the termination and retirement rates among active members are found to accurately reflect experience for the 1982-1986 quinquennial period. But the mortality assumption is considered likely to be inadequate for the future. This agrees with our Forecast Study, in which we present the effects of improvements in retiree mortality. Of course, all mortality, retirement and termination assumptions will be re-evaluated this year in the 1987-1991 quinquennial study.

With regard to the assumptions used to analyze retiree health care costs, the double-digit rates of increase presented in our Analysis of Post-Retirement Medical Benefits and utilized in our Forecast Study are deemed to be appropriate expectations of future trends. Again, projected health care costs will be re-evaluated this year, including an analysis of the effect of recently adopted member contributions and other cost-containment measures.

In summary, the Milliman & Robertson report to the ORSC supports the actuarial assumptions used for both our annual evaluations of the Fund and our analysis of retiree medical benefits. In addition, the results of our Forecast Study, especially the need to control retiree health care costs, are considered by Mr. Reimert to be an accurate assessment of the Fund's position. But, we can not agree with Mr. Reimert's totally negative position. We (and the Board) know there is a problem and at least for the near term recommend continuing efforts to monitor and control health care costs.

I will be available to discuss any questions you may have on this topic at your convenience. Please give me a call if the need arises.

Sincerely yours,

Wayne E. Dydo

Wayne E. Dydo, F.S.A.

WED:dld

cc: Mr. Thomas R. Severns

RECOMMENDATIONS

Since 1983 the legislature has sought some resolution to the funding/benefit cost problems of PFDPF. In 1984 the Ohio Retirement Study Commission's study "Costs and Funding of Police and Firefighter Pensions in Ohio" made several recommendations addressing these problems. Some of the recommendations have been adopted. Included among the recommendations of this report are those recommendations that have not been adopted. Also included are certain recommendations made in the Ohio Retirement Study Commission's final report on "The Costs and Funding of Health Care Benefits Provided by the Ohio Retirement Systems," which was submitted to the legislature in 1991.

Recommendation No. 1 - That no future legislation creating additional liabilities to PFDPF be enacted unless a fiscal note, prepared by an actuary, be provided to the Ohio Retirement Study Commission.[15]

Rationale - Retirement benefits are very costly. They create long-term obligations 20 to 30 years in the future. The legislature has a duty and an obligation to know their costs.

Recommendation No. 2 -That the legislature refrain from the adoption of ad hoc post-retirement increases that are not funded by state appropriations.[16]

Rationale - Ad hoc post-retirement increases create immediate, unfunded liabilities. Ad hoc increases become due immediately because they are applied to a population of individuals already retired. They are unfunded because no contributions have been made by the retired individuals to fund the increased cost of these pension supplements.

In contrast, benefit improvements that are applied to future retirees have less of an immediate fiscal impact on the pension fund. They can be funded by contributions over the future working lifetime of current active members.

Recommendation No. 3 - That the legislature offset Workers' Compensation benefits against PFDPF disability benefits.[17]

Rationale - The purpose of the disability program is to provide replacement income for members unable to earn an income due to a disabling condition. The Workers' Compensation program has a similar purpose. One of the basic differences is that Workers' Compensation requires that the disabling condition have resulted from employment in order to qualify for benefits. Under the pension program the condition may have been caused from any activity. The important consideration is that employers are providing two sources of income for the same injury in those cases in which the disabling condition is work-related.

Recommendation No. 4 - That the state increase its annual subsidy, known as the "state contribution," from $1.2 million to $4.8 million, indexed to the average percentage change in the Consumer Price Index.[18]

Rationale - The "state contribution" of $1.2 million was the total amount that had been distributed to the 454 local police and firemen relief and pension funds in existence prior to their consolidation into PFDPF. This contribution was continued and paid into PFDPF. It has remained unchanged since the consolidation in 1967. The value of $1.2 million based upon the 1967 dollar is equivalent to $4.8 million today. The purpose of the indexing feature is to maintain the value of the state contribution.

---

[15] "Costs and Funding of Police and Firefighter Pensions in Ohio, " Ohio Retirement Study Commission (1984)

[16] Ibid.

[17] Ibid.

[18] Ibid.

ecommendation No. 5 - That PFDPF's assets reserved for pension and disability benefits be segregated from ssets available for health care benefits by creating a separate health care fund, and that health care costs be imited to 6.5% of payroll.[19]

ationale - The rising cost of health care is a major threat to the long-term financial stability of PFDPF. The rimary legal and financial obligation of the fund is to provide pension benefits. These benefits are mandated y statute, and become vested upon retirement. The law grants the board discretionary authority to provide ealth care benefits, permitting the board to change the level of coverage and the costs paid by retired members t any time.

ising health care costs are likely to cause a steady erosion of PFDPF's pension reserves, thereby requiring ever ncreasing contribution rates in the future to pay for the level of pension benefits promised by the legislature.

egregating PFDPF's assets eliminates the possibility of gradually disfunding pension benefits by annually sing pension reserves to pay for health care costs. It also requires the board to institute additional cost sharing/ ost containment measures in order to provide health care benefits within available resources.

FDPF, along with other state pension funds, has already begun moving towards the establishment of a manged care plan in lieu of the traditional "fee for service" plan in the hope of saving millions of dollars in health are costs, especially for retirees under age 65 who use many medical services but are not covered by Medicare. his new plan will incorporate negotiated payment levels and utilization controls - the two key components of ealth care costs - and will reduce the impact of continued cost shifting from providers to plans that have not egotiated price discounts. Retirees may also be asked to pay a greater share of their health care costs depending on the cost of the new plan and the systems' financing ability, and whether the covered individual receives nedical services within or outside of the provider network.

ecommendation No. 6 - That the reimbursement of monthly Medicare Part B premiums be capped.[20]

ationale - When PFDPF began reimbursing retired members for the Medicare Part B premium in 1977, the mount of the premium was $7.20 per month. The cost in 1992 is $31.80, a growth of over 340%. The Medicare Part B premium is scheduled to increase to $36.60 in 1993, $41.10 in 1994 and $46.10 in 1995, an increase f 45% in just three years. PFDPF has no control over such increases.

apping the reimbursement rate reduces the impact of future premium increases on PFDPF's health care costs.

ecommendation No. 7 - That the deductible and out-of-pocket maximum be indexed to the previous year's ercentage increase in health care costs.[21]

ationale - Flat dollar deductibles and out-of-pocket maximums lose their intended effects over time due to the igh annual growth rates of medical expenses, and become an ineffective means of containing health care costs. he current annual out-of-pocket maximum of $500 for single coverage and $750 for family coverage has emained unchanged since the adoption of the PFDPF health care plan in 1974. Had the $500 limit been inexed to the general inflation rate, it would have increased to $1,300 in 1990; indexed to the medical inflation ate, it would have exceeded $2,700.

---

9 "The Costs and Funding of Health Care Benefits Provided by the Ohio Retirement Systems," Ohio Retirement Study Commission (1991)
0 Ibid.
1 Ibid.

Because the out-of-pocket maximum has been frozen while health care costs have been rising, PFDPF has continued to absorb an ever increasing percentage of total costs. In its 35-year forecast study, the Wyatt Company calculated that in 1990 pre-65 retirees picked up approximately 9% of the cost of the plan through the deductible and co-insurance requirements. By the year 2025, the Wyatt Company estimated that pre-65 retirees will pay for less than 2% of the cost of the plan *if the out-of-pocket maximum remains at its current level.*

Recommendation No. 8 - That the PFDPF board charge retired members a premium for *all* dependents covered under the health care plan, and that the premium charges for pre-65 retirees reflect the increased health care costs associated with the normal retirement age of 48 established under Am. Sub. H.B. 389 in 1988.

Rationale - There is an increasing recognition among the state pension funds and other private employer health care plans that retirees need to share in the cost of health care. Requiring contributions from retirees achieves the following objectives:

- Provides an additional source of revenue to help finance rising health care costs while avoiding abrupt and severe long-term changes to the health care plan.

- Spreads the cost sharing over a greater population than simply those who utilize health care services.

- Promotes intergenerational equity between current and future retirees.

- Encourages retirees to act as reasonable and informed consumers of health care services.

- Provides a potential incentive for covered individuals who are employed to enroll in their employer's health care plan.

The retiree premium cost sharing recently adopted by the PFDPF board effective July 1, 1992 exempts spouses over age 65 and dependent children under age 18 from health care contributions. One of the recommendations adopted by this Commission regarding premium cost sharing is that spouses and dependents should bear a greater proportion of the premium costs than retirees. Varying the premium costs between retirees and dependents recognizes that with limited available resources the primary obligation of PFDPF is to the individual retiree.

Another recommendation adopted by this Commission is that pre-65 retirees should bear a greater proportion of the premium costs than post-65 retirees who are generally eligible for Medicare. Varying the premium cost according to Medicare eligibility recognizes that the plan cost for Non-Medicare eligible persons is three to four times higher than for Medicare eligible persons.

The normal retirement age of 48 established by Am. Sub. H.B. 389 in 1988 exposes the PFDPF health care plan to significant medical costs for up to 17 years before Medicare becomes the primary insurer. The premiums charged to individuals who retire at earlier ages should reflect this increased cost to PFDPF. Segregating the assets available for health care benefits, together with capping health care costs at 6.5% of payroll, will likely require greater contributions from pre-65 retirees than the current monthly premium charge of $10.

Recommendation No. 9 - That the statutory payment schedule for the employers' frozen initial liability be accelerated to provide seed money for PFDPF's health care fund in an amount equal to six months' medical claims and expenses.

Rationale - The employers' frozen initial liability provides a source of income that is owed to PFDPF as a result of the consolidation of 454 local police and firemen relief and pension funds. Initially, employers were given 20 years to pay off their respective indebtedness to the fund; this was later extended to 59 years and then to 67 years to accommodate the financial concerns of employers.

The creation of a separate health care fund within PFDPF requires some seed money to meet unexpected revenue shortfalls on a short-term basis and to give the board sufficient time to anticipate changes and to make any necessary modifications to the health care plan in a responsible and orderly manner. Accelerating the payment of the employers' frozen initial liability provides a means of satisfying this requirement.

Recommendation No. 10 - That the employee contribution rate be increased from 10% to 11% of payroll.

Rationale - The employee contribution rates for police and firemen are among the lowest of the state pension funds when expressed as a percent of the total employee and employer contribution rate.

The employee rates as a percent of total rates for each of the state pension funds are as follows:

		Total Rate	Employee Rate as % of Total Rate
PERS	Law Enforcement	25.00%	36.00%
HPRS		35.03%	30.00%
PFDPF	Police	29.50%	33.90%
	Firemen	34.00%	29.40%
PERS	State	21.81%	39.00%
	Local	22.05%	38.50%
STRS		23.25%	39.80%
SERS		23.00%	39.10%

If police and firemen paid a rate comparable to that of state workers, teachers and school employees, they would pay at a minimum 11.50% and 13.25%, respectively.

Recommendation No. 11 - That the legislative freeze on the employer contribution rates be lifted upon the adoption of **all** of the foregoing recommendations.

Rationale - Freezing contribution rates by statute is basically unsound because it assumes that benefit costs are fixed and certain. They are not. They fluctuate due to differences between actuarial assumptions and actual experience, benefit changes, assumption changes and variations in post-retirement medical expenses.

The employer contribution rates have been fixed by statute at the 1986 level. Since 1986 PFDPF has experienced an increase in benefit costs of 11.22% of payroll for police and 10.83% of payroll for firemen due to several benefit improvements enacted by the legislature. It has also experienced an increase in health care costs of 1.67% of payroll as retiree health care costs continued to rise faster than payroll.

While favorable actuarial experience and changes in actuarial assumptions have covered some of these increased costs, a deficit still remains. This deficit financing means a steady build-up of unfunded liabilities, and has long-term ramifications to future generations of taxpayers who will be required to pay for promised benefits when they become due through ever increasing contribution rates.

CONCLUSION

Ohio law provides that the primary legal and financial obligation of PFDPF is to provide pension benefits. These benefits are defined by statute and become vested upon retirement. It is thus incumbent upon PFDPF to accumulate and maintain the necessary pension reserves to pay for these vested benefits when they become due.

Ohio law also grants the PFDPF board discretionary authority to provide health care benefits to retired members and their dependents. These benefits are neither defined by statute nor vested upon retirement, thereby permitting the board to change the level of medical coverage and the costs paid by retired members at any time.

This report documents that with the current levels of pension, disability and health care benefits, together with expected future growth in medical costs, the statutory contribution rates are inadequate to maintain the actuarial soundness of PFDPF, and that without either an increase in contributions *or* a reduction in benefits *or* some combination thereof there is likely to be a steady erosion of PFDPF's pension reserves, thereby requiring ever increasing contribution rates in the future to pay for the level of pension benefits mandated by statute.

The recommendations included herein are designed to maintain the actuarial soundness of PFDPF. Their primary objective is to secure the proper funding of future pension benefits. The recommendations suggest that the legislature, employers, members and plan administrators share in the responsibility of ensuring the long-term financial solvency of PFDPF, and not shirk that responsibility to future generations.

ORSC ACTION

At its meeting of August 19, 1992 the Ohio Retirement Study Commission voted to accept the report and to submit it to the Ohio General Assembly as required by section 742.311 of the Ohio Revised Code.

Glenn Kacic - Contact Person
(614) 228-1346

APPENDIX

Scenario Assumptions

Scenario No. 1 - Assumes assets earn 8.25% each year except for stocks, which earn 14.9% for 1990 through 1993, medical costs remain at a constant 6.5% of payroll, which allows for an increase of about 5% per year, and no mortality improvements occur. (See Appendix Table 1)

Scenario No. 2 - Same assumptions as *first* scenario except increased life expectancy of 2.5 years for service retirees and 1 year for disabled retirees. (See Appendix Table 2)

Scenario No. 3 - Same assumptions as *first* scenario except increased life expectancy of 4 years for service retirees and 2 years for disabled retirees. (See Appendix Table 3)

Scenario No. 4 - Same assumptions as *first* scenario except medical costs for pre-65 retirees increase at 14.4% in 1991 and gradually decrease to an ultimate level of 5.5%. Medical costs for post-65 retirees increase at 6.0% in 1991, rise to 9.6% in 1993, and then gradually decrease to 5.5%. (See Appendix Table 4)

Scenario No. 5 - Same assumptions as *fourth* scenario except medical costs are calculated assuming the deductible and out-of-pocket maximum are indexed to the previous year's percentage rise in health care costs. (See Appendix Table 5)

Scenario No. 6 - Same assumptions as *fourth* scenario except medical costs are calculated assuming certain percentages of medical costs are paid for by future retirees according to the following table: (See Appendix Table 6)

Type of Retirement	Retiree	Spouse	Child
Service (48 & 25 YOS)	0%	50%	50%
Service (62 & 15 YOS)	0%	50%	50%
Disability (20 YOS)	0%	60%	60%
Disability (15 - 19 YOS)	0%	70%	70%
Disability (0 - 14 YOS)	0%	75%	75%
Deferred (20 YOS)	50%	60%	60%
Deferred (15 - 19 YOS)	50%	70%	70%

Scenario No. 7 - Same as *fourth* scenario except assets earn 10.25%. (See Appendix Table 7)

Summary of Tables

Appendix Table 1 - If, over the 35-year forecast period, no mortality improvements occur, annual medical costs are limited to 6.5% of payroll, and assets earn 8.25% each year (except stock portfolio achieves an annual rate of return of 14.9% from 1990 through 1993), then the actuarially determined contribution rates are projected to decrease gradually from 34.28% in 1990 to 25.90% in 2025 for police, and from 35.60% to 12.97% over the same period for firemen. The statutory rates are presently 29.50% for police and 34.00% for firemen.

The funded status of PFDPF is also projected to improve from just over 50% in 1990 to 72.28% in 2025 for police and 90.59% for firemen. On a combined basis, PFDPF will be approximately 81% funded, meaning that 81% of the present value of future pension and disability benefits will be covered by assets in the year 2025.

Appendix Table 2 - If the life expectancies for future service and disability retirees improve by 2.5 years and and 1 year, respectively, then the actuarially determined contribution rates are projected to remain between 33% and 36% over the 35-year period for police, and to decrease gradually to just under 22% for firemen in 2025. Under this scenario, the funded status of PFDPF will continue to improve to 61.57% for police and 80.08% for firemen by the the year 2025. On a combined basis, PFDPF will be approximately 70% funded.

Appendix Table 3 - If the life expectancies for future service and disability retirees improve by 4 years and 2 years, respectively, then the actuarially determined contribution rate for police will remain at approximately 36% for the first 15 years, and then steadily increase to 41.26% in the year 2025. The actuarial rate for firemen will continue to decrease, albeit at a much slower rate, to 27.54% by 2025.

The funded status of PFDPF will continue to improve, again at a much slower rate, to approximately 64% by the year 2025.

Appendix Table 4 - If the expected trend in health care costs occurs, PFDPF is projected to become financially insolvent during the year 2024; that is, PFDPF will have *negative* assets of $834.6 million as of January 1, 2025. Under this scenario, the actuarially determined contribution rates will increase rapidly over the 35-year period to over 100% of payroll for police, and 88.49% of payroll for firemen in the year 2025.

Health care costs alone are projected to increase from the actual rate of 7.3% of payroll in 1991 to nearly 20% of payroll by the year 2005, and to over 22% of payroll by the year 2011 and thereafter.

Appendix Table 5 - If the deductible and out-of-pocket maximum is indexed to the previous year's rise in health care costs, this, in and of itself, will not significantly affect the long-term financial soundness of PFDPF. Actuarial contribution rates are still projected to rise rapidly over the 35-year period to approximately 98% for police and 85% for firemen. PFDPF will continue to become steadily disfunded by the year 2025, resulting in total assets of $309.6 million as of January 1, 2025. While cash outlays for health care costs would be lower, the health care contribution rate as a percent of payroll is still projected to reach 21% for much of the 35-year period.

Appendix Table 6 - If future retirees are charged a certain percentage of their dependents' health care premiums, the health care contribution rate as a percent of payroll is projected to peak at nearly 16% in about 20 years and gradually decline to around 14% by the year 2025 (as opposed to 22% without the retiree premium charge). The total actuarial contribution rates are still projected to increase over the 35-year period, albeit at a somewhat slower rate, to 70.53% for police and 59.60% for firemen. Also, PFDPF is still projected to become steadily disfunded over the 35-year period, again at a slower rate; the overall funded status of PFDPF will be around 28% by the year 2025, and decreasing.

Appendix Table 7 - If assets earn an additional 2% each year over the 35-year period, the overall funded status of PFDPF is projected to improve to approximately 73%. However, the actuarial contribution rate for police will steadily increase to 49.89% by the year 2025, which is significantly higher than the current statutory rate of 29.5%. For firemen, the actuarial rate will peak at 36.62% in 2007 and gradually decline to 31.35% in 2025 which is less than the current statutory rate of 34%.

Appendix Table 1

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (8.25%; 6.5% Medical)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,201.5	$ 2,636.4	$ 1,807.1	$ 1,437.1	56.45%	54.51%	$212.2	$195.4	$ 4,434.6	$ 3,686.7	26.86%	27.43%	$ 804.0	$ 52.3	6.50%	33.36%	33.93%
1992	3,394.0	2,780.1	1,977.5	1,571.5	58.26	56.53	210.4	193.7	4,851.9	3,855.0	26.12	26.52	838.4	54.5	6.50	32.62	33.02
1993	3,595.8	2,931.0	2,160.9	1,717.8	60.10	58.61	208.8	192.0	4,868.4	4,035.6	25.28	25.49	877.5	57.0	6.50	31.78	31.99
1994	3,807.5	3,089.2	2,359.0	1,877.5	61.96	60.78	206.7	190.2	5,146.0	4,228.4	24.31	24.35	920.3	59.8	6.50	30.81	30.85
1995	4,027.3	3,254.2	2,521.1	2,010.8	62.60	61.79	204.7	188.4	5,412.4	4,421.7	24.23	24.04	966.6	62.9	6.50	30.73	30.54
1996	4,258.9	3,427.9	2,689.1	2,152.0	63.14	62.78	202.6	188.5	5,711.6	4,629.4	24.12	23.71	1,015.3	66.0	6.50	30.62	30.21
1997	4,499.9	3,610.5	2,862.6	2,301.7	63.62	63.75	200.5	184.6	6,032.1	4,849.7	23.99	23.35	1,066.1	69.3	6.50	30.49	29.85
1998	4,749.9	3,801.9	3,042.2	2,460.3	64.05	64.71	198.2	182.5	6,371.9	5,080.8	23.87	22.98	1,118.6	72.7	6.50	30.37	29.48
1999	5,009.7	4,003.4	3,226.6	2,628.1	64.41	65.65	195.9	180.4	6,738.9	5,328.3	23.73	22.59	1,175.2	76.4	6.50	30.23	29.09
2000	5,277.8	4,215.3	3,416.7	2,805.2	64.74	66.55	193.5	176.2	7,123.1	5,595.3	23.59	22.16	1,233.6	80.2	6.50	30.09	28.66
2001	5,554.0	4,437.0	3,613.2	2,992.2	65.06	67.44	191.0	175.9	7,516.6	5,878.7	23.45	21.75	1,295.8	84.2	6.50	29.95	28.25
2002	5,839.4	4,667.2	3,817.4	3,190.1	65.37	68.35	188.5	173.5	7,920.1	6,161.7	23.32	21.32	1,361.9	88.5	6.50	29.82	27.82
2003	6,135.4	4,907.2	4,030.0	3,400.2	65.68	69.29	185.6	171.0	8,336.7	6,453.0	23.19	20.88	1,431.3	93.0	6.50	29.69	27.38
2004	6,444.9	5,161.0	4,250.5	3,622.4	65.95	70.19	182.9	168.4	8,791.1	6,772.9	23.05	20.38	1,503.2	97.7	6.50	29.55	26.88
2005	6,766.2	5,426.6	4,479.5	3,857.5	66.20	71.08	180.0	165.7	9,285.6	7,110.9	22.91	19.89	1,578.9	102.7	6.50	29.41	26.39
2006	7,101.3	5,706.1	4,716.9	4,106.0	66.42	71.96	177.0	162.9	9,773.4	7,474.2	22.76	19.37	1,658.1	107.7	6.50	29.26	25.87
2007	7,449.5	6,001.7	4,963.3	4,367.5	66.63	72.77	173.6	160.0	10,306.1	7,861.6	22.60	18.84	1,740.7	113.2	6.50	29.10	25.34
2008	7,811.4	6,311.2	5,219.5	4,642.2	66.82	73.55	170.5	157.0	10,670.1	8,322.2	22.44	18.30	1,827.8	118.8	6.50	28.94	24.80
2009	8,165.3	6,631.3	5,467.5	4,931.8	67.04	74.37	167.1	153.8	11,437.6	8,772.0	22.29	17.75	1,920.9	124.8	6.50	28.79	24.25
2010	8,573.6	6,964.1	5,769.6	5,237.9	67.29	75.21	163.5	150.5	12,013.6	9,237.4	22.15	17.19	2,019.9	131.3	6.50	28.65	23.69
2011	8,980.2	7,314.0	6,067.2	5,561.1	67.56	76.03	159.6	147.1	12,610.5	9,742.0	22.00	16.61	2,123.6	138.0	6.50	28.50	23.11
2012	9,405.6	7,680.0	6,382.0	5,902.4	67.85	76.85	155.9	143.5	13,226.1	10,279.1	21.85	16.02	2,233.1	145.2	6.50	28.35	22.52
2013	9,853.2	8,058.9	6,715.5	6,264.6	68.16	77.74	151.6	139.8	13,886.6	10,820.6	21.69	15.40	2,349.5	152.8	6.50	28.19	21.90
2014	10,323.9	8,457.0	7,069.6	6,650.0	68.48	78.63	147.6	135.9	14,535.0	11,393.4	21.53	14.78	2,473.5	160.8	6.50	28.03	21.28
2015	10,822.6	8,881.9	7,447.0	7,060.3	68.81	79.49	143.2	131.8	15,241.4	12,033.2	21.37	14.15	2,606.5	169.5	6.50	27.87	20.65
2016	11,351.0	9,332.0	7,848.4	7,497.5	69.14	80.34	138.6	127.6	15,992.3	12,728.0	21.19	13.51	2,747.2	178.6	6.50	27.69	20.01
2017	11,906.6	9,800.2	8,274.6	7,964.0	69.49	81.26	133.9	123.2	16,760.6	13,432.5	21.01	12.85	2,893.3	188.1	6.50	27.51	19.35
2018	12,498.2	10,287.9	8,726.9	8,462.0	69.84	82.25	128.9	118.6	17,609.9	14,150.1	20.83	12.16	3,045.3	197.9	6.50	27.33	18.66
2019	13,115.0	10,797.0	9,205.4	8,993.6	70.19	83.30	123.7	113.9	18,482.8	14,883.6	20.64	11.44	3,203.6	208.2	6.50	27.14	17.94
2020	13,766.0	11,328.6	9,711.2	9,561.9	70.54	84.40	118.3	108.9	19,401.4	15,834.3	20.44	10.68	3,368.4	219.0	6.50	26.94	17.18
2021	14,450.7	11,864.9	10,245.4	10,169.2	70.90	85.58	112.7	103.7	20,370.2	16,406.1	20.24	9.90	3,540.4	230.2	6.50	26.74	16.40
2022	15,170.6	12,469.3	10,809.0	10,816.3	71.25	86.77	108.8	98.4	21,393.1	17,205.7	20.04	9.09	3,720.0	241.8	6.50	26.54	15.59
2023	15,927.2	13,080.6	11,403.3	11,512.2	71.60	88.01	100.6	92.8	22,474.4	18,038.0	19.83	8.24	3,907.6	254.0	6.50	26.33	14.74
2024	16,721.6	13,724.4	12,029.4	12,253.9	71.94	89.29	94.4	86.9	23,616.4	18,907.3	19.62	7.37	4,104.3	266.8	6.50	26.12	13.87
2025	17,558.1	14,401.4	12,688.6	13,046.6	72.28	90.59	87.9	80.9	24,821.6	19,819.5	19.40	6.47	4,310.0	280.2	6.50	25.90	12.97

Appendix Table 2

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (8.25%; 6.5% Medical - Mortality Improvement I)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,310.6	$ 2,712.1	$ 1,807.2	$ 1,437.0	54.59%	52.98%	$212.2	$195.4	$ 4,457.8	$ 3,686.7	29.18%	29.51%	$ 804.1	$ 52.3	6.50%	35.68%	36.01%
1992	3,514.7	2,864.0	1,977.7	1,571.5	56.27	54.87	210.4	193.7	4,674.8	3,854.9	28.59	28.72	838.5	54.5	6.50	35.09	35.22
1993	3,729.0	3,023.7	2,161.4	1,717.7	57.96	56.81	208.6	182.0	4,909.0	4,035.8	27.89	27.81	877.8	57.0	6.50	34.39	34.31
1994	3,954.9	3,191.8	2,359.6	1,877.3	59.66	58.82	206.7	190.2	5,188.3	4,226.3	27.07	26.80	920.8	59.8	6.50	33.57	33.30
1995	4,188.9	3,367.0	2,521.7	2,010.4	60.19	59.71	204.7	188.4	5,434.3	4,421.6	27.13	26.62	967.1	62.9	6.50	33.63	33.12
1996	4,438.0	3,552.1	2,689.7	2,151.3	60.61	60.56	202.6	168.5	5,733.4	4,629.3	27.16	26.43	1,015.8	66.0	6.50	33.66	32.93
1997	4,698.0	3,747.1	2,863.1	2,300.5	60.96	61.39	200.5	164.6	6,053.7	4,849.7	27.18	26.22	1,086.5	69.3	6.50	33.68	32.72
1998	4,966.4	3,952.0	3,041.9	2,458.5	61.25	62.21	198.2	162.5	6,393.5	5,060.7	27.20	26.00	1,120.0	72.8	6.50	33.70	32.50
1999	5,247.3	4,168.0	3,225.5	2,625.4	61.47	62.99	195.9	160.4	6,761.0	5,326.2	27.21	25.76	1,175.8	76.4	6.50	33.71	32.26
2000	5,538.0	4,385.8	3,414.0	2,801.4	61.65	63.73	193.5	178.2	7,145.8	5,595.2	27.22	25.50	1,234.2	80.2	6.50	33.72	32.00
2001	5,638.1	4,634.2	3,608.4	2,986.6	61.81	64.45	191.0	175.9	7,539.6	5,876.6	27.24	25.23	1,298.2	84.3	6.50	33.74	31.73
2002	6,148.8	4,882.5	3,809.6	3,162.9	61.96	65.19	186.5	173.5	7,943.7	6,161.8	27.27	24.96	1,362.3	88.5	6.50	33.77	31.46
2003	6,471.9	5,141.7	4,016.6	3,390.3	62.09	65.94	185.8	171.0	8,363.0	6,453.0	27.32	24.67	1,431.7	93.0	6.50	33.82	31.17
2004	6,810.3	5,416.2	4,234.3	3,609.3	62.17	66.64	182.9	168.4	8,818.8	6,772.8	27.35	24.37	1,503.8	97.7	6.50	33.85	30.87
2005	7,162.6	5,704.1	4,457.3	3,840.5	62.23	67.33	180.0	165.7	9,282.8	7,110.8	27.38	24.06	1,578.2	102.7	6.50	33.88	30.56
2006	7,530.6	6,007.0	4,687.2	4,084.1	62.24	67.99	177.0	162.9	9,802.7	7,474.1	27.40	23.72	1,658.5	107.6	6.50	33.90	30.22
2007	7,913.8	6,327.8	4,924.4	4,338.6	62.23	68.58	173.8	160.0	10,340.1	7,861.4	27.43	23.37	1,741.0	113.2	6.50	33.93	29.87
2008	8,312.3	6,664.2	5,169.2	4,607.2	62.19	69.13	170.5	157.0	10,805.1	8,322.0	27.46	23.00	1,828.1	118.8	6.50	33.96	29.50
2009	8,724.6	7,012.7	5,423.8	4,866.1	62.16	69.70	167.1	153.8	11,475.6	8,771.9	27.52	22.64	1,921.2	124.8	6.50	34.02	29.14
2010	9,153.6	7,375.3	5,689.5	5,183.9	62.16	70.29	163.5	150.5	12,054.7	9,237.3	27.59	22.26	2,020.1	131.3	6.50	34.09	28.76
2011	9,602.3	7,756.7	5,967.8	5,494.8	62.15	70.84	159.6	147.1	12,654.7	9,741.9	27.66	21.87	2,123.9	138.0	6.50	34.16	28.37
2012	10,072.0	8,156.0	6,259.9	5,821.6	62.15	71.38	155.9	143.5	13,273.7	10,279.0	27.75	21.47	2,233.3	145.2	6.50	34.25	27.97
2013	10,565.8	8,569.6	6,566.9	6,166.6	62.15	71.96	151.8	139.8	13,919.8	10,820.5	27.84	21.07	2,349.7	152.8	6.50	34.34	27.57
2014	11,084.9	9,004.2	6,890.3	6,532.2	62.16	72.55	147.6	135.9	14,589.8	11,383.3	27.95	20.86	2,473.8	160.8	6.50	34.45	27.16
2015	11,634.3	9,467.8	7,231.8	6,919.4	62.16	73.09	143.2	131.8	15,300.3	12,033.0	28.05	20.23	2,608.8	169.5	6.50	34.55	26.73
2016	12,215.7	9,958.3	7,592.2	7,329.8	62.15	73.60	138.6	127.8	16,055.3	12,727.8	28.14	19.80	2,747.6	178.6	6.50	34.64	26.30
2017	12,828.3	10,488.5	7,971.5	7,785.4	62.14	74.18	133.9	123.2	16,847.3	13,432.3	28.24	19.35	2,893.8	188.1	6.50	34.74	25.85
2018	13,473.2	10,999.9	8,368.9	8,227.9	62.12	74.80	128.9	118.6	17,679.8	14,149.9	28.35	18.89	3,046.0	198.0	6.50	34.85	25.39
2019	14,151.8	11,554.3	8,787.2	8,719.0	62.09	75.46	123.7	113.9	18,555.4	14,883.4	28.46	18.42	3,204.4	208.2	6.50	34.96	24.92
2020	14,864.4	12,133.0	9,223.7	9,240.9	62.05	76.18	118.3	108.9	19,476.6	15,634.1	28.57	17.94	3,369.3	219.0	6.50	35.07	24.44
2021	15,613.3	12,737.9	9,679.6	9,795.5	62.00	76.90	112.7	103.7	20,447.9	16,405.8	28.68	17.43	3,541.5	230.2	6.50	35.18	23.93
2022	16,389.9	13,371.8	10,154.9	10,385.1	61.92	77.66	106.8	98.4	21,473.4	17,205.5	28.80	16.91	3,721.2	241.9	6.50	35.30	23.41
2023	17,225.9	14,038.5	10,650.0	11,011.6	61.83	78.45	100.8	92.8	22,557.4	18,037.7	28.92	16.38	3,909.0	254.1	6.50	35.42	22.88
2024	18,092.6	14,734.4	11,164.9	11,678.0	61.71	79.26	94.4	86.9	23,702.5	18,907.0	29.05	15.82	4,105.8	266.9	6.50	35.55	22.32
2025	19,001.6	15,467.8	11,699.9	12,388.1	61.57	80.08	87.9	80.9	24,911.4	19,819.2	29.18	15.25	4,311.4	280.2	6.50	35.68	21.75

Appendix Table 3

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (6.25%; 6.5% Medical - Mortality Improvement II)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,371.7	$ 2,761.9	$ 1,807.2	$ 1,437.0	53.80%	52.03%	$212.2	$195.4	$ 4,457.8	$ 3,686.7	30.56%	30.67%	$ 604.1	$ 52.3	6.50%	37.06%	37.37%
1992	3,582.4	2,919.0	1,977.7	1,571.5	55.21	53.64	210.4	193.7	4,674.8	3,855.0	30.05	30.15	638.5	54.5	6.50	36.55	36.65
1993	3,803.9	3,084.6	2,161.3	1,717.6	56.82	55.68	208.6	192.0	4,909.0	4,035.6	29.43	29.33	677.8	57.0	6.50	35.93	35.83
1994	4,037.8	3,258.8	2,359.4	1,877.2	58.43	57.60	206.7	190.2	5,168.3	4,226.4	28.69	28.40	920.6	59.8	6.50	35.19	34.90
1995	4,281.4	3,441.2	2,521.4	2,010.2	58.89	58.42	204.7	188.4	5,434.3	4,421.7	28.63	28.31	967.1	62.9	6.50	35.33	34.81
1996	4,536.9	3,633.6	2,689.1	2,150.9	59.25	59.19	202.6	186.5	5,733.4	4,629.4	28.95	28.21	1,015.6	66.0	6.50	35.45	34.71
1997	4,808.0	3,837.0	2,862.2	2,299.9	59.53	59.94	200.5	184.6	6,053.7	4,849.7	29.05	28.10	1,066.5	69.3	6.50	35.55	34.60
1998	5,086.5	4,050.6	3,040.6	2,457.5	59.75	60.67	198.2	182.5	6,393.5	5,080.6	29.15	27.98	1,120.0	72.8	6.50	35.65	34.48
1999	5,381.3	4,276.4	3,223.5	2,623.9	59.90	61.38	195.9	180.4	6,761.0	5,326.3	29.24	27.84	1,175.6	76.4	6.50	35.74	34.34
2000	5,684.6	4,514.5	3,411.1	2,799.2	60.00	62.00	193.5	178.2	7,145.8	5,595.3	29.33	27.68	1,234.2	80.2	6.50	35.83	34.18
2001	5,998.5	4,764.3	3,604.3	2,983.7	60.09	62.83	191.0	175.9	7,539.8	5,876.7	29.44	27.51	1,296.2	84.3	6.50	35.94	34.01
2002	6,323.9	5,024.6	3,804.1	3,178.5	60.15	63.28	188.5	173.5	7,943.7	6,161.7	29.57	27.35	1,362.3	88.5	6.50	36.07	33.85
2003	6,662.5	5,296.7	4,011.0	3,384.5	60.20	63.90	185.8	171.0	8,363.0	6,453.0	29.70	27.19	1,431.7	93.0	6.50	36.20	33.69
2004	7,017.8	5,565.0	4,224.3	3,601.7	60.19	64.40	182.9	168.4	8,816.8	6,772.9	29.83	27.00	1,503.8	97.7	6.50	36.33	33.50
2005	7,386.0	5,867.7	4,444.2	3,830.8	60.15	65.08	180.0	165.7	9,282.9	7,110.9	29.96	26.80	1,579.2	102.7	6.50	36.46	33.30
2006	7,775.3	6,206.5	4,670.4	4,071.3	60.07	65.60	177.0	162.9	9,802.7	7,474.2	30.09	26.59	1,656.5	107.8	6.50	36.59	33.09
2007	8,178.8	6,544.4	4,903.2	4,323.4	59.95	66.06	173.8	160.0	10,340.1	7,881.6	30.22	26.35	1,741.0	113.2	6.50	36.72	32.85
2008	8,598.3	6,898.9	5,142.6	4,586.7	59.80	66.48	170.5	157.0	10,905.1	8,322.2	30.36	26.09	1,828.1	118.8	6.50	36.86	32.59
2009	9,034.6	7,266.7	5,390.5	4,862.6	59.66	66.92	167.1	153.8	11,475.8	8,772.0	30.53	25.85	1,921.2	124.8	6.50	37.03	32.35
2010	9,487.9	7,649.7	5,646.8	5,152.2	59.53	67.35	163.5	150.5	12,054.7	9,237.4	30.72	25.60	2,020.1	131.3	6.50	37.22	32.10
2011	9,962.2	8,052.7	5,917.7	5,455.8	59.40	67.75	159.8	147.1	12,654.7	9,742.0	30.93	25.34	2,123.9	138.0	6.50	37.43	31.84
2012	10,456.9	8,474.6	6,199.0	5,774.0	59.27	68.13	155.9	143.5	13,273.7	10,279.1	31.15	25.07	2,233.3	145.2	6.50	37.65	31.57
2013	10,961.1	8,912.4	6,493.2	6,109.1	59.13	68.55	151.8	139.8	13,919.6	10,820.6	31.36	24.80	2,349.7	152.8	6.50	37.88	31.30
2014	11,530.2	9,372.2	6,801.6	6,462.6	58.99	68.95	147.6	135.9	14,569.6	11,393.4	31.63	24.53	2,473.6	160.8	6.50	38.13	31.03
2015	12,111.1	9,862.3	7,125.9	6,835.9	58.84	69.31	143.2	131.8	15,300.3	12,033.2	31.88	24.24	2,606.8	169.5	6.50	38.38	30.74
2016	12,725.6	10,381.2	7,466.1	7,230.2	58.67	69.65	138.6	127.6	16,055.3	12,728.0	32.13	23.93	2,747.6	178.6	6.50	38.63	30.43
2017	13,372.9	10,920.6	7,822.3	7,647.2	58.49	70.02	133.9	123.2	16,847.3	13,432.5	32.39	23.63	2,893.6	188.1	6.50	38.89	30.13
2018	14,054.0	11,483.0	8,193.8	8,088.2	58.30	70.44	128.9	118.6	17,679.8	14,150.1	32.66	23.33	3,046.0	198.0	6.50	39.16	29.83
2019	14,770.1	12,069.3	8,580.5	8,554.7	58.09	70.86	123.7	113.9	18,555.4	14,883.8	32.94	23.02	3,204.4	208.2	6.50	39.44	29.52
2020	15,522.3	12,681.2	8,981.9	9,048.4	57.88	71.35	118.3	108.9	19,478.6	15,634.3	33.22	22.71	3,369.3	219.0	6.50	39.72	29.21
2021	16,312.2	13,320.8	9,397.7	9,570.9	57.61	71.65	112.7	103.7	20,447.9	16,406.1	33.51	22.39	3,541.5	230.2	6.50	40.01	28.89
2022	17,141.4	13,990.5	9,827.7	10,123.8	57.33	72.36	106.8	98.4	21,473.4	17,205.7	33.81	22.07	3,721.2	241.9	6.50	40.31	28.57
2023	18,011.5	14,692.6	10,271.3	10,709.1	57.03	72.69	100.6	92.8	22,557.4	18,038.0	34.12	21.73	3,909.0	254.1	6.50	40.62	28.23
2024	18,924.1	15,429.2	10,728.1	11,326.5	56.69	73.42	94.4	86.9	23,702.5	18,907.3	34.44	21.39	4,105.6	266.9	6.50	40.94	27.89
2025	19,880.6	16,202.8	11,197.8	11,983.9	56.32	73.96	87.9	80.9	24,911.4	19,819.5	34.76	21.04	4,311.4	280.2	6.50	41.26	27.54

Appendix Table 4

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (8.25%; FAS 106 Medical)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,201.5	$ 2,636.4	$ 1,804.4	$ 1,429.3	56.36%	54.21%	$212.2	$195.4	$ 4,434.6	$ 3,686.7	26.92%	27.65%	$ 804.0	$ 69.1	8.59%	35.51%	36.24%
1992	3,394.0	2,780.1	1,868.0	1,552.2	57.88	55.83	210.4	193.7	4,651.9	3,855.0	26.33	27.03	838.3	78.0	9.30	35.63	36.33
1993	3,595.6	2,931.0	2,140.1	1,682.8	59.52	57.41	208.6	192.0	4,886.4	4,035.6	25.71	26.37	877.5	88.1	10.04	35.75	36.41
1994	3,807.5	3,089.2	2,321.5	1,822.2	60.97	56.98	206.7	190.2	5,146.0	4,226.4	25.05	25.67	920.3	99.0	10.76	35.81	36.43
1995	4,027.3	3,254.2	2,460.7	1,929.7	61.10	59.30	204.7	188.4	5,412.4	4,421.7	25.35	25.89	966.8	111.1	11.49	36.84	37.38
1996	4,256.9	3,427.9	2,596.3	2,039.3	61.01	59.49	202.6	186.5	5,711.6	4,629.4	25.72	26.16	1,015.3	124.8	12.27	37.99	38.43
1997	4,499.9	3,610.5	2,732.5	2,150.5	60.72	59.56	200.5	184.6	6,032.1	4,849.7	26.17	26.50	1,066.1	140.3	13.16	39.33	39.66
1998	4,749.9	3,801.9	2,661.3	2,262.3	60.24	59.50	198.2	182.5	6,371.9	5,080.8	26.73	26.91	1,119.6	156.2	14.13	40.88	41.04
1999	5,009.7	4,003.4	2,982.1	2,373.3	59.53	59.28	195.9	180.4	6,736.9	5,328.3	27.38	27.41	1,175.3	176.3	15.00	42.38	42.41
2000	5,277.9	4,215.3	3,093.2	2,483.7	58.61	58.92	193.5	176.2	7,123.1	5,585.3	28.16	27.97	1,233.8	196.3	15.91	44.07	43.88
2001	5,554.0	4,437.0	3,194.0	2,591.8	57.51	58.42	191.0	175.9	7,516.6	5,876.7	29.07	28.62	1,295.6	218.1	16.83	45.80	45.45
2002	5,839.4	4,667.2	3,283.5	2,697.0	56.23	57.79	186.5	173.5	7,920.1	6,161.7	30.12	29.36	1,361.8	239.8	17.59	47.71	46.97
2003	6,135.4	4,907.2	3,361.1	2,799.5	54.78	57.05	185.6	171.0	8,336.7	6,453.0	31.27	30.24	1,431.3	262.3	18.33	49.60	48.57
2004	6,444.9	5,161.0	3,423.6	2,896.2	53.12	56.16	182.9	168.4	8,791.1	6,772.9	32.53	31.16	1,503.2	286.1	19.17	51.70	50.33
2005	6,766.2	5,426.6	3,468.2	2,990.6	51.28	55.11	180.0	165.7	9,265.6	7,110.9	33.90	32.17	1,578.9	312.7	19.80	53.70	51.97
2006	7,101.3	5,706.1	3,493.4	3,077.1	49.19	53.93	177.0	162.9	9,773.4	7,474.2	35.37	33.24	1,658.1	339.1	20.45	55.82	53.69
2007	7,449.5	6,001.7	3,498.5	3,154.5	46.94	52.56	173.6	160.0	10,308.1	7,861.6	36.94	34.35	1,740.6	365.7	21.01	57.95	55.36
2008	7,811.4	6,311.2	3,476.6	3,220.4	44.51	51.03	170.5	157.0	10,870.1	8,322.2	38.60	35.52	1,827.6	388.5	21.26	59.86	56.76
2009	8,185.3	6,631.3	3,434.6	3,276.9	41.96	49.42	167.1	153.8	11,437.6	8,772.0	40.37	36.78	1,920.9	416.9	21.70	62.07	58.46
2010	8,573.6	6,964.1	3,367.6	3,321.3	39.28	47.69	163.5	150.5	12,013.6	9,237.4	42.29	38.09	2,019.9	443.7	21.97	64.26	60.06
2011	8,980.2	7,314.0	3,277.4	3,349.7	36.50	45.80	159.6	147.1	12,610.5	9,742.0	44.28	39.46	2,123.7	472.7	22.26	66.55	61.74
2012	9,405.8	7,680.0	3,159.0	3,382.0	33.59	43.76	155.9	143.5	13,226.1	10,279.1	46.40	40.92	2,233.0	493.5	22.10	68.50	63.02
2013	9,853.2	8,058.9	3,015.6	3,381.6	30.61	41.71	151.6	139.8	13,868.6	10,820.8	48.57	42.43	2,348.5	522.6	22.24	70.81	64.67
2014	10,323.9	8,457.0	2,844.7	3,341.0	27.55	39.51	147.6	135.9	14,535.0	11,393.4	50.82	44.04	2,473.5	553.6	22.38	73.20	66.42
2015	10,822.6	8,881.9	2,642.2	3,299.2	24.41	37.15	143.2	131.8	15,241.4	12,033.2	53.13	45.84	2,606.5	578.8	22.21	75.34	67.85
2016	11,351.0	9,332.0	2,409.0	3,236.8	21.22	34.68	138.6	127.8	15,992.3	12,728.0	55.46	47.24	2,747.2	609.2	22.18	77.64	69.42
2017	11,906.6	9,800.2	2,136.0	3,152.5	17.94	32.17	133.9	123.2	16,780.6	13,432.5	57.87	48.94	2,893.3	636.5	22.00	79.87	70.94
2018	12,496.2	10,287.9	1,823.3	3,043.3	14.58	29.58	128.9	118.6	17,609.9	14,150.1	60.32	50.74	3,045.4	672.2	22.07	82.39	72.81
2019	13,115.0	10,797.0	1,463.0	2,901.6	11.16	26.88	123.7	113.9	18,482.8	14,883.6	62.84	52.67	3,203.8	706.2	22.04	84.88	74.71
2020	13,768.0	11,328.6	1,045.5	2,731.8	7.58	24.11	118.3	108.9	19,401.4	15,634.3	65.44	54.70	3,368.4	739.1	21.94	87.38	76.64
2021	14,450.7	11,884.9	568.9	2,527.8	3.94	21.27	112.7	103.7	20,370.2	16,406.1	68.10	56.82	3,540.4	760.8	22.05	90.15	78.87
2022	15,170.6	12,468.3	22.6	2,282.9	0.15	18.31	106.8	98.4	21,393.1	17,205.7	70.84	59.07	3,720.0	816.7	21.95	92.79	81.02
2023	15,927.2	13,080.6	(600.4)	1,999.4	(3.77)	15.28	100.8	92.8	22,474.4	18,038.0	73.64	61.36	3,907.8	862.3	22.07	95.71	83.45
2024	16,721.8	13,724.4	(1,310.1)	1,668.4	(7.83)	12.14	94.4	86.9	23,616.4	18,907.3	76.52	63.79	4,104.3	907.2	22.10	98.62	85.89
2025	17,556.1	14,401.4	(2,118.6)	1,284.0	(12.07)	8.92	87.9	80.9	24,821.8	19,819.5	79.50	66.27	4,310.1	957.5	22.22	101.72	88.49

Appendix Table 5

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (8.25%; FAS 106 Medical Alternate I)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,201.5	$ 2,636.4	$ 1,804.4	$ 1,429.3	56.36%	54.21%	$212.2	$195.4	$ 4,434.6	$ 3,686.7	26.92%	27.65%	$ 604.0	$ 69.0	8.58%	35.50%	36.23%
1992	3,394.0	2,780.1	1,968.0	1,552.2	57.98	55.83	210.4	193.7	4,651.9	3,855.0	26.33	27.03	838.3	77.9	9.29	35.62	36.32
1993	3,595.8	2,931.0	2,140.2	1,682.9	59.52	57.42	208.6	192.0	4,866.4	4,035.6	25.71	26.37	877.5	87.8	10.01	35.72	36.38
1994	3,807.5	3,089.2	2,321.6	1,622.4	60.96	58.99	206.7	190.2	5,146.0	4,226.4	25.04	25.86	920.3	98.6	10.71	35.75	36.37
1995	4,027.3	3,254.2	2,461.2	1,930.1	61.11	59.31	204.7	186.4	5,412.4	4,421.7	25.34	25.88	966.8	110.5	11.43	36.77	37.31
1996	4,258.9	3,427.9	2,598.2	2,040.0	61.03	59.51	202.6	166.5	5,711.8	4,629.4	25.70	26.15	1,015.3	123.7	12.16	37.86	38.33
1997	4,499.9	3,610.5	2,734.0	2,151.7	60.76	59.60	200.5	184.8	6,032.1	4,849.7	26.15	26.47	1,066.1	139.0	13.04	39.19	39.51
1998	4,749.9	3,801.9	2,863.8	2,264.1	60.29	59.55	198.2	162.5	6,371.9	5,080.8	26.69	26.87	1,119.8	158.3	13.96	40.65	40.83
1999	5,009.7	4,003.4	2,985.9	2,376.1	59.60	59.35	195.9	180.4	6,738.9	5,328.3	27.33	27.38	1,125.3	173.8	14.79	42.12	42.15
2000	5,277.9	4,215.3	3,098.9	2,487.9	58.71	59.02	193.5	176.2	7,123.1	5,595.3	28.08	27.90	1,233.8	193.1	15.65	43.73	43.55
2001	5,554.0	4,437.0	3,202.0	2,597.8	57.65	58.55	191.0	175.9	7,516.6	5,876.7	28.97	28.52	1,295.6	214.1	16.52	45.49	45.04
2002	5,839.4	4,667.2	3,294.7	2,705.2	56.42	57.96	188.5	173.5	7,920.1	6,161.7	29.97	29.24	1,361.8	234.7	17.23	47.20	46.47
2003	6,135.4	4,907.2	3,376.2	2,810.4	55.03	57.27	185.8	171.0	8,336.7	6,453.0	31.09	30.07	1,431.3	256.4	17.91	49.00	47.98
2004	6,444.9	5,161.0	3,443.8	2,912.5	53.43	56.43	182.9	168.4	8,791.1	6,772.9	32.30	30.94	1,503.2	281.1	18.70	51.00	49.64
2005	6,766.2	5,428.8	3,494.1	3,009.3	51.64	55.45	180.0	165.7	9,265.6	7,110.9	33.62	31.90	1,578.9	304.5	19.29	52.91	51.19
2006	7,101.3	5,706.1	3,526.4	3,100.6	49.66	54.34	177.0	162.9	9,773.4	7,474.2	35.03	32.93	1,658.1	329.7	19.86	54.81	52.81
2007	7,449.5	6,001.7	3,538.1	3,184.0	47.49	53.05	173.8	160.0	10,306.1	7,861.6	36.53	33.97	1,740.8	354.9	20.38	56.92	54.38
2008	7,811.4	6,311.2	3,526.2	3,256.9	45.17	51.61	170.5	157.0	10,870.1	8,322.2	38.12	35.08	1,827.8	376.5	20.60	58.72	55.88
2009	8,185.3	6,631.3	3,498.1	3,321.7	42.74	50.09	167.1	153.8	11,437.6	8,772.0	39.82	36.25	1,920.9	403.5	21.01	60.63	57.26
2010	8,573.6	6,964.1	3,444.4	3,375.5	40.17	48.47	163.5	150.5	12,013.6	9,237.4	41.65	37.50	2,019.9	426.7	21.22	62.87	58.72
2011	8,960.2	7,314.0	3,369.8	3,414.9	37.52	46.69	159.6	147.1	12,610.5	9,742.0	43.55	38.80	2,123.7	456.2	21.46	65.03	60.28
2012	9,405.8	7,860.0	3,288.9	3,439.8	34.75	44.79	155.9	143.5	13,226.1	10,279.1	45.56	40.15	2,233.0	475.6	21.30	66.66	61.45
2013	9,853.2	8,058.9	3,145.4	3,453.7	31.92	42.86	151.8	139.8	13,868.8	10,820.8	47.63	41.58	2,349.5	503.0	21.41	69.04	62.99
2014	10,323.9	8,457.0	2,997.0	3,449.5	29.03	40.79	147.6	135.9	14,535.0	11,393.4	49.76	43.08	2,473.5	531.9	21.50	71.26	64.58
2015	10,822.6	8,881.9	2,819.9	3,428.4	26.06	38.58	143.2	131.8	15,241.4	12,033.2	51.85	44.57	2,606.5	555.0	21.29	73.24	65.86
2016	11,351.0	9,332.0	2,615.4	3,365.1	23.04	36.27	138.6	127.6	15,992.3	12,728.0	54.16	46.06	2,747.2	583.3	21.23	75.39	67.29
2017	11,908.6	9,800.2	2,374.6	3,325.0	19.94	33.93	133.9	123.2	16,780.6	13,432.5	56.44	47.64	2,893.3	609.1	21.05	77.49	68.69
2018	12,496.2	10,267.9	2,097.5	3,242.8	16.79	31.52	128.9	118.8	17,609.9	14,150.1	58.78	49.32	3,045.4	643.0	21.11	79.87	70.43
2019	13,115.0	10,797.0	1,776.8	3,131.4	13.55	29.00	123.7	113.9	18,482.8	14,983.8	61.13	51.12	3,203.8	675.0	21.07	82.20	72.19
2020	13,766.0	11,328.8	1,403.2	2,994.8	10.19	28.44	118.3	108.9	19,401.4	15,634.3	63.58	53.00	3,368.4	708.1	20.98	84.54	73.98
2021	14,450.7	11,864.9	975.3	2,828.0	6.75	23.79	112.7	103.7	20,370.2	16,408.1	66.09	54.96	3,540.4	745.8	21.08	87.15	76.04
2022	15,170.6	12,488.3	462.9	2,624.2	3.16	21.05	106.8	98.4	21,393.1	17,205.7	68.67	57.07	3,720.0	779.5	20.95	89.82	78.02
2023	15,927.2	13,080.8	(80.7)	2,366.3	(0.51)	18.24	100.6	92.8	22,474.4	18,038.0	71.31	59.22	3,907.6	822.7	21.05	92.38	80.27
2024	16,721.8	13,724.4	(724.7)	2,103.7	(4.33)	15.33	94.4	86.9	23,618.4	18,907.3	74.03	61.48	4,104.3	865.1	21.08	95.11	82.54
2025	17,558.1	14,401.4	(1,460.4)	1,777.0	(8.32)	12.34	87.9	80.9	24,621.6	19,819.5	76.83	63.76	4,310.1	912.8	21.18	98.01	84.94

Appendix Table 6

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (8.25%; FAS 106 Medical Alternate II)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,201.5	$ 2,636.4	$ 1,804.7	$ 1,429.5	56.37%	54.22%	$212.2	$195.4	$ 4,434.6	$ 3,686.7	26.91%	27.64%	$ 804.0	$ 67.4	8.38%	35.29%	36.02%
1992	3,394.0	2,760.1	1,968.3	1,553.2	58.02	55.87	210.4	193.7	4,651.9	3,855.0	26.30	27.00	838.3	74.6	8.92	35.22	35.92
1993	3,595.6	2,931.0	2,143.4	1,685.3	59.61	57.50	208.6	182.0	4,886.4	4,035.6	25.64	26.31	877.5	83.0	9.46	35.10	35.77
1994	3,807.5	3,089.2	2,328.2	1,827.2	61.15	59.15	206.7	180.2	5,146.0	4,226.4	24.92	25.55	920.3	91.6	9.85	34.87	35.50
1995	4,027.3	3,254.2	2,472.3	1,938.4	61.39	59.57	204.7	188.4	5,412.4	4,421.7	25.14	25.88	966.8	100.9	10.44	35.58	36.13
1996	4,256.9	3,427.9	2,617.1	2,053.1	61.45	59.89	202.6	186.5	5,711.6	4,628.4	25.39	25.86	1,015.3	110.9	10.92	36.31	36.78
1997	4,489.8	3,610.5	2,761.1	2,171.5	61.36	60.14	200.5	184.6	6,032.1	4,849.7	25.69	26.06	1,066.1	122.5	11.49	37.18	37.55
1998	4,749.9	3,801.9	2,903.2	2,282.7	61.12	60.30	198.2	182.5	6,371.9	5,080.8	26.07	26.31	1,118.8	135.4	12.08	38.16	38.40
1999	5,009.7	4,003.4	3,041.4	2,416.1	60.71	60.35	195.9	180.4	6,736.9	5,328.3	26.50	26.60	1,175.3	148.0	12.59	39.09	39.19
2000	5,277.9	4,215.3	3,174.9	2,542.2	60.15	60.31	193.5	178.2	7,123.1	5,595.3	27.01	26.92	1,233.6	161.7	13.11	40.12	40.03
2001	5,554.0	4,437.0	3,303.8	2,669.9	59.49	60.17	191.0	175.9	7,516.6	5,876.7	27.60	27.28	1,295.8	176.5	13.62	41.22	40.90
2002	5,839.4	4,667.2	3,428.0	2,798.3	58.70	59.96	188.5	173.5	7,920.1	6,161.7	28.26	27.71	1,361.6	191.0	14.03	42.31	41.74
2003	6,135.4	4,907.2	3,547.6	2,930.9	57.82	59.73	185.6	171.0	8,338.7	6,453.0	28.02	28.19	1,431.3	205.6	14.38	43.38	42.55
2004	6,444.9	5,161.0	3,660.6	3,064.8	56.80	59.38	182.9	168.4	8,791.1	6,772.9	29.81	28.66	1,503.2	222.3	14.79	44.60	43.47
2005	6,766.2	5,428.6	3,765.5	3,198.9	55.65	58.95	180.0	165.7	9,265.6	7,110.9	30.67	29.22	1,578.9	237.6	15.06	45.73	44.28
2006	7,101.3	5,706.1	3,861.8	3,334.3	54.38	58.43	177.0	162.9	9,773.4	7,474.2	31.57	29.78	1,658.1	254.8	15.37	46.94	45.15
2007	7,449.5	6,001.7	3,947.4	3,466.5	52.99	57.78	173.6	160.0	10,308.1	7,881.6	32.53	30.34	1,740.6	271.2	15.56	48.11	45.82
2008	7,811.4	6,311.2	4,023.3	3,600.4	51.51	57.05	170.5	157.0	10,870.1	8,322.2	33.53	30.92	1,827.6	284.6	15.57	49.10	46.49
2009	8,165.3	6,631.3	4,091.1	3,732.4	49.98	56.28	167.1	153.8	11,437.6	8,772.0	34.59	31.53	1,920.9	302.3	15.74	50.33	47.27
2010	8,573.8	6,984.1	4,149.1	3,863.1	48.39	55.47	163.5	150.5	12,013.6	9,237.4	35.74	32.16	2,019.9	316.8	15.76	51.52	47.96
2011	8,980.2	7,314.0	4,200.2	3,989.8	46.77	54.55	159.8	147.1	12,610.5	9,742.0	36.91	32.88	2,123.7	337.6	15.81	52.82	48.77
2012	9,405.6	7,680.0	4,240.6	4,112.9	45.08	53.55	155.9	143.5	13,228.1	10,279.1	38.18	33.56	2,233.0	347.9	15.58	53.74	49.14
2013	9,853.2	8,058.9	4,276.4	4,238.9	43.40	52.57	151.8	139.6	13,868.6	10,820.8	39.41	34.28	2,349.5	365.0	15.54	54.95	49.82
2014	10,323.9	8,457.0	4,305.2	4,357.5	41.70	51.53	147.6	135.9	14,535.0	11,393.4	40.70	35.05	2,473.5	382.2	15.45	56.15	50.50
2015	10,822.8	8,881.9	4,326.6	4,474.6	39.98	50.38	143.2	131.6	15,241.4	12,033.2	41.99	35.80	2,606.5	398.6	15.29	57.28	51.09
2016	11,351.0	9,332.0	4,341.1	4,589.0	38.24	49.17	138.6	127.6	15,992.3	12,728.0	43.29	36.53	2,747.2	416.2	15.15	58.44	51.68
2017	11,906.8	9,800.2	4,343.1	4,702.4	36.47	47.98	133.9	123.2	16,780.8	13,432.5	44.62	37.31	2,893.3	432.2	14.94	59.56	52.25
2018	12,498.2	10,287.9	4,333.9	4,813.2	34.68	46.79	128.9	118.6	17,609.9	14,150.1	45.96	38.14	3,045.4	452.5	14.86	60.82	53.00
2019	13,115.0	10,797.0	4,310.2	4,917.8	32.86	45.55	123.7	113.9	18,482.8	14,883.6	47.32	39.03	3,203.6	472.3	14.74	62.06	53.77
2020	13,768.0	11,328.6	4,268.8	5,019.5	30.99	44.31	118.3	108.9	19,401.4	15,634.3	48.72	39.96	3,388.4	480.8	14.56	63.28	54.52
2021	14,450.7	11,884.9	4,203.1	5,116.7	29.09	43.05	112.7	103.7	20,370.2	16,406.1	50.13	40.93	3,540.4	515.9	14.57	64.70	55.50
2022	15,170.8	12,466.3	4,112.6	5,208.0	27.11	41.75	106.6	98.4	21,393.1	17,205.7	51.57	41.95	3,720.0	538.0	14.41	65.88	56.36
2023	15,927.2	13,080.8	3,992.8	5,291.1	25.07	40.45	100.8	92.8	22,474.4	18,038.0	53.05	42.99	3,907.8	564.7	14.45	67.50	57.44
2024	16,721.8	13,724.4	3,837.5	5,365.1	22.95	39.09	94.4	86.9	23,616.4	18,907.3	54.58	44.08	4,104.3	589.8	14.37	68.83	58.45
2025	17,556.1	14,401.4	3,641.6	5,431.7	20.74	37.72	87.9	80.9	24,821.6	19,819.5	56.12	45.19	4,310.1	621.2	14.41	70.53	59.60

Appendix Table 7

THE POLICE AND FIREMEN'S DISABILITY
AND PENSION FUND OF OHIO

35-Year Forecast Study

Estimated Evaluation Results (10.25%; FAS 106 Medical)
(In Millions)

Year	Actuarial Present Value of Future Benefits		Valuation Assets		Funded Status		Employer Accrued Liability		Present of Value Future Compensation		Current Rate for Pension & Disability Benefits		Estimated Payroll	Medical Payments	Medical Rate	Total Rate	
	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen	Police	Firemen				Police	Firemen
1991	$ 3,201.5	$ 2,638.4	$ 1,827.9	$ 1,447.9	57.10%	54.92%	$212.2	$195.4	$ 4,434.6	$ 3,686.7	26.39%	27.14%	$ 804.0	$ 68.1	8.59%	34.98%	35.73%
1992	3,394.0	2,760.1	2,019.0	1,582.5	59.49	57.28	210.4	193.7	4,651.9	3,855.0	25.22	25.98	838.3	78.0	9.30	34.52	35.28
1993	3,585.6	2,931.0	2,223.1	1,746.1	61.83	59.64	208.6	192.0	4,886.4	4,035.6	24.00	24.74	877.5	88.1	10.04	34.04	34.78
1994	3,807.5	3,089.2	2,441.2	1,918.3	64.12	62.03	206.7	190.2	5,146.0	4,226.4	22.70	23.43	920.3	99.0	10.76	33.46	34.19
1995	4,027.3	3,254.2	2,638.4	2,069.2	65.51	63.59	204.7	188.4	5,412.4	4,421.7	22.04	22.71	966.8	111.1	11.49	33.53	34.20
1996	4,256.9	3,427.9	2,842.4	2,230.9	66.74	65.08	202.6	186.5	5,711.8	4,629.4	21.41	21.99	1,015.3	124.6	12.27	33.68	34.26
1997	4,499.9	3,610.5	3,052.4	2,401.7	67.83	66.52	200.5	184.6	6,032.1	4,849.7	20.83	21.28	1,066.1	140.3	13.16	33.99	34.44
1998	4,748.9	3,801.9	3,267.4	2,581.3	68.79	67.89	198.2	182.5	6,371.9	5,080.8	20.31	20.59	1,119.8	158.2	14.13	34.44	34.72
1999	5,009.7	4,003.4	3,485.5	2,789.2	69.58	69.17	195.9	180.4	6,738.9	5,328.3	19.86	19.93	1,175.3	176.3	15.00	34.86	34.93
2000	5,277.9	4,215.3	3,706.1	2,966.5	70.22	70.37	193.5	178.2	7,123.1	5,585.3	19.49	19.28	1,233.8	196.3	15.91	35.40	35.19
2001	5,554.0	4,437.0	3,929.6	3,172.6	70.75	71.50	191.0	175.9	7,518.6	5,876.7	19.21	18.86	1,295.8	216.1	16.83	36.04	35.49
2002	5,839.4	4,667.2	4,156.3	3,387.6	71.18	72.58	188.5	173.5	7,920.1	6,161.7	19.01	18.09	1,361.6	239.8	17.59	36.60	35.68
2003	6,135.4	4,907.2	4,388.7	3,613.2	71.50	73.63	185.6	171.0	8,338.7	6,453.0	18.88	17.53	1,431.3	262.3	18.33	37.21	35.86
2004	6,444.8	5,161.0	4,618.9	3,849.5	71.67	74.59	182.9	168.4	8,791.1	6,772.9	18.83	17.00	1,503.2	288.1	19.17	38.00	36.17
2005	6,766.2	5,428.6	4,851.6	4,095.7	71.70	75.47	180.0	165.7	9,285.8	7,110.9	18.86	16.51	1,578.9	312.7	19.80	38.66	36.31
2006	7,101.3	5,708.1	5,084.8	4,353.1	71.60	76.29	177.0	162.9	9,773.4	7,474.2	18.96	16.04	1,658.1	339.1	20.45	39.41	36.49
2007	7,449.5	6,001.7	5,317.4	4,620.8	71.38	76.99	173.8	160.0	10,308.1	7,881.6	19.14	15.61	1,740.8	365.7	21.01	40.15	36.62
2008	7,811.4	6,311.2	5,550.4	4,897.4	71.08	77.60	170.5	157.0	10,870.1	8,322.2	19.38	15.22	1,827.6	388.5	21.26	40.84	36.48
2009	8,185.3	6,631.3	5,786.6	5,187.7	70.70	78.23	167.1	153.8	11,437.6	8,772.0	19.66	14.81	1,920.9	418.9	21.70	41.36	36.51
2010	8,573.8	6,964.1	6,025.2	5,490.7	70.27	78.64	163.5	150.5	12,013.8	9,237.4	20.00	14.43	2,019.9	443.7	21.97	41.87	36.40
2011	8,980.2	7,314.0	6,270.4	5,804.8	69.82	79.37	159.6	147.1	12,810.5	9,742.0	20.37	14.09	2,123.7	472.7	22.26	42.63	36.35
2012	9,405.6	7,680.0	6,519.7	6,132.8	69.32	79.85	155.9	143.5	13,228.1	10,279.1	20.80	13.76	2,233.0	493.5	22.10	42.90	35.88
2013	9,853.2	8,058.9	6,779.2	6,480.0	68.80	80.41	151.6	139.8	13,868.6	10,820.6	21.23	13.40	2,349.5	522.8	22.24	43.47	35.64
2014	10,323.9	8,457.0	7,049.4	6,842.8	68.28	80.91	147.6	135.9	14,535.0	11,393.4	21.67	13.07	2,473.5	553.8	22.38	44.05	35.45
2015	10,822.8	8,861.9	7,329.5	7,222.7	67.72	81.32	143.2	131.8	15,241.4	12,033.2	22.14	12.79	2,606.5	578.8	22.21	44.35	35.00
2016	11,351.0	9,332.0	7,624.2	7,624.2	67.17	81.70	136.6	127.8	15,982.3	12,728.0	22.61	12.51	2,747.2	609.2	22.18	44.79	34.69
2017	11,908.6	9,800.2	7,928.3	8,050.2	66.58	82.14	133.9	123.2	16,760.8	13,432.5	23.09	12.20	2,893.3	638.5	22.00	45.09	34.20
2018	12,496.2	10,267.9	8,246.2	8,501.7	65.99	82.64	128.9	116.8	17,609.9	14,150.1	23.56	11.87	3,045.4	672.2	22.07	45.65	33.94
2019	13,115.0	10,797.0	8,574.6	8,975.7	65.38	83.13	123.7	113.9	18,482.6	14,883.6	24.08	11.58	3,203.6	708.2	22.04	46.12	33.80
2020	13,766.0	11,328.6	8,908.8	9,461.4	64.72	83.89	118.3	108.9	19,401.4	15,834.3	24.61	11.20	3,368.4	739.1	21.94	46.55	33.14
2021	14,450.7	11,864.9	9,252.4	10,018.6	64.03	84.30	112.7	103.7	20,370.2	16,406.1	25.15	10.82	3,540.4	780.8	22.05	47.20	32.87
2022	15,170.6	12,468.3	9,600.5	10,586.6	63.28	84.81	108.6	98.4	21,393.1	17,205.7	25.73	10.44	3,720.0	818.7	21.95	47.68	32.39
2023	15,927.2	13,080.8	9,952.1	11,194.1	62.48	85.58	100.8	92.6	22,474.4	18,036.0	26.33	10.02	3,907.8	862.3	22.07	48.40	32.09
2024	16,721.6	13,724.4	10,304.2	11,837.5	61.62	86.25	94.4	86.9	23,618.4	18,907.3	26.96	9.59	4,104.3	907.2	22.10	49.06	31.69
2025	17,556.1	14,401.4	10,851.8	12,524.7	60.67	86.97	87.8	80.9	24,821.6	19,819.5	27.67	9.13	4,310.1	957.5	22.22	49.89	31.35

The Police and Firemen's Disability and Pension Fund

230 East Town Street / Columbus, Ohio 43215 / (614) 228-2975

L. PAUL ROSS, *Executive Secretary*

TO: MUNICIPAL FISCAL OFFICERS AND TOWNSHIP CLERKS

RE: CERTIFICATION OF EMPLOYER'S RATE FOR 1986

This will certify that beginning January 1, 1986 the "Employer's Contribution Rate" for municipalities or townships employing full-time police officers and fire fighters shall be as follows:

POLICE Employer's Contribution Rate: 19.50% of earnings

FIREMEN Employer's Contribution Rate: 24.00% of earnings

Pursuant to Sections 742.33 and 742.34, R.C., these rates of employer contribution have been set by the Police and Firemen's Disability and Pension Board on the basis of an evaluation made by the Fund actuary.

The actuary recommended a total rate per cent for future service funding (exclusive of State of Ohio appropriations which fund the increases in benefits enacted by the 108th and 109th General Assemblies) of 29.17% of payroll for police and 33.67% of payroll for fire fighters. The employer's rates, herewith certified, are derived as follows:

	Police	Firemen
Gross Rate:	29.17%	33.67%
Less Member's Statutory Rate:	(8.50)	(8.50)
Less State Contribution:	(1.17)	(1.17)
EMPLOYER'S RATES:	19.50%	24.00%

The new rates take effect with the first payroll period in 1986.

Very truly yours,

L. Paul Ross

L. Paul Ross
Executive Secretary

July 1985