

***CITY OF WARWICK, RHODE ISLAND FIREFIGHTERS / POLICE I
PENSION FUND***
ACTUARIAL VALUATION AS OF JULY 1, 2014

TABLE OF CONTENTS

DISCUSSION		<u>Page</u>
I.	Purpose and Summary	1
II.	Membership Data	1
III.	Plan Provisions	1
IV.	Assets	2
V.	Actuarial Methods and Assumptions	2
VI.	Funding Policy	4
VII.	Analysis of Changes	4
VIII.	Future Expectations	5
TABLES		
1	Valuation Results	
	A Combined Firefighters and Police I	6
	B Police I	7
	C Firefighters	8
2	Summary of Amortization Bases.....	9
3	Asset Information.....	10-12
4	Development of Contribution Levels	13
5	Distribution of Plan Members as of July 1, 2014	
	A Police I.....	14
	B Firefighters	15
	C Combined Firefighters and Police I	16
6	History of Investment Return Rates	17
7	Near Term Outlook	18
8	Schedule of Funding Progress	19
9	Actuarial Methods and Assumptions	20
10	Outline of Principal Plan Provisions	25

DISCUSSION

I. Purpose and Summary

This report presents the results of our July 1, 2014 actuarial valuation of the City of Warwick, Rhode Island Firefighters/Police I Pension Fund. The valuation was performed at the request of the City of Warwick to determine the City's annual contribution for the fiscal year beginning July 1, 2015 under the City's funding ordinance.

The City's contribution level is \$16,987,253 for 2015-2016, as shown on Table 4.

The development of the valuation results is shown in Tables 1 through 10 and is described in more detail on the following pages.

II. Membership Data

The City furnished data for active and retired members as of December 31, 2013. The data was projected to July 1, 2014 for valuation purposes reflecting age, salary and benefit increases, with adjustments of data due to data questions response. Although we did not audit this data, we did review it for reasonableness and consistency with the data collected in the previous valuation (prepared as of July 1, 2013). Tables 5A, 5B and 5C provide distributions by age and service for active members. Tables 1A, 1B, and 1C provide information about the retirees and inactive members.

III. Plan Provisions

A summary of the principal plan provisions recognized for purposes of the valuation is provided in Table 10. There were no changes to this plan adopted since the last actuarial valuation.

IV. Assets

The City of Warwick furnished audited financial statements for the fiscal years ending June 30, 2013 and 2014. Tables 3a, 3b, and 3c provide information about the composition of plan assets and the development of valuation assets.

The asset value used in the determination of the annual contribution level is set equal to the market value of assets, adjusted to phase in the difference between actual and expected investment return over five years, at 20% per year. As shown in Table 3c, the market value of assets on July 1, 2014 was \$71,622,345 while the valuation assets were \$66,348,673, or 92.6% of the market value.

As shown in Table 3b, the dollar-weighted rates of return on the market value of assets for FY 2014 was 15.30%. These returns are net of all investment and administrative expenses.

V. Actuarial Methods and Assumptions

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods.

There were several changes to the assumptions and methods since the last actuarial valuation. Earlier last year, GRS performed an assumption review for the Employees' Retirement System of Rhode Island (ERSRI), which included a review of the economic and demographic experience of the Rhode Island Municipal Employees' Retirement System (MERS). The study examined the assumptions used for expected investment rate, inflation rate, retirement, mortality, termination, disability, salary increases, payroll growth, and other miscellaneous assumptions. ERSRI has adopted updated assumptions as a result of this analysis. While the City of Warwick Plans were not included in this analysis, we believe that the future experience of these plans, with regard termination, mortality, and compensation increases will be similar to those expected in other municipal retirement systems in Rhode Island.

Summary of Assumption Changes

- We recommend reducing the productivity component of the salary scale assumption by 0.25%, from 1.50% to 1.25%, above inflation. This recommendation reflects a reduction in the spread between inflation and salary increases experienced in the overall economy and

the expectation of lower future salary increases due to continued budgetary constraints for employers.

- In accordance with the observed experience, we are recommending small adjustments in the service-based promotional/longevity component of the salary scale for all employee groups
- In accordance with the observed experience, we are recommending small adjustments in the service-based promotional/longevity component of the salary scale for all employee groups.
- We recommend lowering the future COLA assumption for members of the Firefighters/Police I Plan who receive increases equal to the base salary increase of active members from 4.0% per year to 3.0% per year.
- We recommend lowering the current marriage assumption from 95% to 80%.
- We recommend a small change to the asset smoothing method and the amortization policy to allow for the direct offsetting of gains and losses. This change will materially decrease the annual volatility in the contribution rates and allow for a more consistent liability measurement.

The net impact of the new assumptions decreased the UAAL by \$26 million and the contribution requirement for FY2016 by \$847,281. However, the resetting of the amortization schedule to decrease the rate of future contribution growth increased the FY2016 contribution by \$2.7 million.

We believe the assumptions are internally consistent and are reasonable, based on the actual experience of the City of Warwick, Rhode Island Firefighters/Police I Pension Fund.

VI. Funding Policy

The plan is funded on an actuarially determined basis in accordance with the City’s pension ordinances. We recommended a small change to the asset smoothing method and the amortization policy to allow for the direct offsetting of gains and losses. This change will materially decrease the annual volatility in the contribution rates and allow for a more consistent liability measurement. Starting this year, a 21-year amortization of the unfunded actuarial accrued liability as of July 1, 2014, amortized as a level percentage of payroll, anticipated to grow 2.75% annually.

The contribution amount determined by the July 1, 2014 valuation is projected with assumed base pay increases (2.75%) to determine the statutory contribution level for the 2015-2016 fiscal year.

VII. Analysis of Changes

The UAAL decreased from \$247 million to \$211 million since last year, mainly due to the changes in assumptions but also due to favorable actuarial experience.

The following shows a reconciliation of the actual FY 2015 contribution determined by the prior valuation and the FY 2016 contribution set by this valuation.

Contribution for FY 2015	\$ 15,645,428
Expected 3.75% increase (prior assumption)	586,704
Decrease in the number of active members	(311,047)
Fresh start of amortization schedule at 2.75% annual growth rate	2,742,747
Assumptions change	(847,281)
Demographic and payroll changes	(587,039)
Asset loss/(gain)	<u>(242,259)</u>
Contribution set by current valuation for FY 2016	\$ 16,987,253

VIII. Future Expectations

With the changes in assumption, we recommended and Board approved the consolidation of all prior amortization bases into one single base that will be amortized over the same 21 year time period as the largest remaining base from the prior methodology. The new schedule reduces the rate of growth in the annual payment from 3.75% to 2.75%. While this process increases the City's contribution over the short term, it dramatically decreases the longer term contributions and removes all of the "spikes" that were anticipated in the prior methodologies.

The undersigned are available to answer any questions in connection with this valuation of the plan or the information presented in this report.



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant
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TABLES

Valuation Results

Combined FireFighters and Police I

	July 1, 2014	July 1, 2013
A. Membership Data		
1. Active members		
a. Number	45	50
b. Expected covered payroll	\$ 4,154,657	\$ 4,535,879
c. Average pay	\$ 92,326	\$ 90,718
d. Average attained age	52.1	51.1
e. Average past service	26.9	26.0
2. Retired members and beneficiaries		
a. Number	402	403
b. Average benefit	\$ 49,113	\$ 49,211
c. Average attained age	69.2	68.8
3. Inactive members		
a. Number	-	1
b. Refund	\$ -	\$ 24,354
B. Liabilities		
1. Normal cost with interest		
a. Dollar amount	\$ 1,005,457	\$ 1,276,922
b. % of covered payroll	24.20%	28.15%
2. Actuarial accrued liability		
a. Active members	\$ 37,092,252	\$ 45,384,774
b. Retired members and beneficiaries	240,087,143	264,365,451
c. Inactive	-	24,354
d. Total	\$ 277,179,395	\$ 309,774,579
3. Valuation assets	\$ 66,348,673	\$ 62,796,555
4. Unfunded actuarial accrued liability [2(d) - (3)]	\$ 210,830,722	\$ 246,978,024
5. Funded Ratio	23.94%	20.27%

Valuation Results

Police I Only

	July 1, 2014	July 1, 2013
A. Membership Data		
1. Active members		
a. Number	1	1
b. Expected covered payroll	\$ 86,569	\$ 86,762
c. Average pay	\$ 86,569	\$ 86,762
d. Average attained age	71.1	70.1
e. Average past service	48.0	47.0
2. Retired members and beneficiaries		
a. Number	108	109
b. Average benefit	\$ 42,176	\$ 43,092
c. Average attained age	74.4	74.9
3. Inactive members		
a. Number	-	-
b. Refund	\$ -	\$ -
B. Liabilities		
1. Normal cost with interest		
a. Dollar amount	\$ -	\$ -
b. % of covered payroll	0.00%	0.00%
2. Actuarial accrued liability		
a. Active members	\$ 642,670	\$ 722,503
b. Retired members and beneficiaries	46,722,231	52,434,945
c. Total	\$ 47,364,901	\$ 53,157,448

Valuation Results

FireFighters Only

	July 1, 2014	July 1, 2013
A. Membership Data		
1. Active members		
a. Number	44	49
b. Expected covered payroll	\$ 4,068,088	\$ 4,449,117
c. Average pay	\$ 92,457	\$ 90,798
d. Average attained age	51.6	50.7
e. Average past service	26.4	25.6
2. Retired members and beneficiaries		
a. Number	294	294
b. Average benefit	\$ 51,661	\$ 51,480
c. Average attained age	67.3	66.5
3. Inactive members (Non-Vesting)		
a. Number	-	1
b. Refund	\$ -	\$ 24,354
B. Liabilities		
1. Normal cost with interest		
a. Dollar amount	\$ 1,005,457	\$ 1,276,922
b. % of covered payroll	24.72%	28.70%
2. Actuarial accrued liability		
a. Active members	\$ 36,449,582	\$ 44,662,271
b. Retired members and beneficiaries	193,364,912	211,930,506
c. Inactive	-	24,354
d. Total	\$ 229,814,494	\$ 256,617,131

Summary of Amortization Bases

Date Established	Purpose	Initial Amount	Remaining Balance as of July 1, 2014	2014 - 2015 Amortization Payment *	Years Remaining as of July 1, 2014
7/14	Fresh Start, Offsetting of Prior Bases at 2.75% Growth Rate	\$ 210,830,722	<u>\$ 210,830,722</u>	<u>\$ 15,756,149</u>	21
	Total		\$ 210,830,722	\$ 15,756,149	

* Assuming payment made at the middle of the year.

Asset Information
Composition of Fund as of June 30, 2014

	Market Value	Percentage of Total
1. Cash and equivalents	\$ (236,463)	-0.3%
2. Equities, including index funds	34,940,861	48.8%
3. Fixed income investments	35,961,368	50.2%
4. Receivables less payables	<u>956,579</u>	<u>1.3%</u>
5. Total	\$ 71,622,345	100.0%

Asset Information
Asset Reconciliation and Expected Returns

	FY 2011	FY 2012	FY 2013	FY 2014
1. Beginning of year market value	61,290,094	69,242,530	63,762,219	65,991,960
2. Contributions				
a. City	12,984,595	13,503,973	14,276,546	15,206,485
b. Member	407,932	393,072	350,536	321,061
c. Total	<u>13,392,527</u>	<u>13,897,045</u>	<u>14,627,082</u>	<u>15,527,546</u>
3. Benefits paid	(18,532,731)	(19,330,851)	(19,691,440)	(19,675,904)
4. Net return	13,092,640	(46,505)	7,294,099	9,778,743
5. End of year market value	69,242,530	63,762,219	65,991,960	71,622,345
6. Net market return	22.30%	-0.07%	11.91%	15.30%
7. Expected market value				
a. Beginning of year	61,290,094	69,242,530	63,762,219	65,991,960
b. Net cash flow	(5,140,204)	(5,433,806)	(5,064,358)	(4,148,358)
c. Earnings assumption	8.00%	7.50%	7.50%	7.50%
d. Expected earnings	4,697,599	4,989,422	4,592,253	4,793,834
e. Excess/(shortfall)	8,395,041	(5,035,927)	2,701,846	4,984,909

Asset Information
Development of Valuation Assets

1.	Market value as of June 30, 2014		\$ 71,622,345
2.	Adjustment for investment gain/(loss) to be recognized:		
	Period	Investment Gain/(Loss) Different than Expected	Gain/(Loss) Not Yet Recognized
			Adjustment
	07/01/13-06/30/14	\$ 4,984,909	80% \$ 3,987,927
	07/01/12-06/30/13	2,701,846	60% 1,621,108
	07/01/11-06/30/12	(5,035,927)	40% (2,014,371)
	07/01/10-06/30/11	8,395,041	20% <u>1,679,008</u>
	Total		\$ 5,273,672
3.	Valuation assets [(1) - (2)]		\$ 66,348,673
4.	Actuarial value as a percentage of market		92.6%

Development of Contribution Levels

	Valuation Results 2014 - 2015	Statutory Contribution for 2015 - 2016
1. Gross normal cost	\$ 1,005,457	
2. Anticipated employee contributions	(229,000)	
3. Net normal cost [(1) - (2)]	\$ 776,457	\$ 797,810
4. Sum of amortization amounts	15,756,149	16,189,443
5. Total [(3) + (4)]	\$ 16,532,606	\$ 16,987,253

**Distribution of Active Members by Age and by Years of Service (Police I)
 As of July 1, 2014**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$86,569	1 \$86,569
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$86,569	1 \$86,569

**Distribution of Active Members by Age and by Years of Service (Fire I)
 As of July 1, 2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$83,654	0 \$0	0 \$0	0 \$0	1 \$83,654
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	7 \$86,117	8 \$92,859	0 \$0	0 \$0	15 \$89,713
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8 \$82,658	8 \$94,192	1 \$118,960	0 \$0	17 \$90,221
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$90,417	6 \$99,034	1 \$103,741	0 \$0	8 \$98,545
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$103,741	1 \$128,475	1 \$84,398	3 \$105,538
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	17 \$84,598	23 \$95,407	3 \$117,059	1 \$84,398	44 \$92,457

**Distribution of Active Members by Age and by Years of Service (Police I and Fire I)
 As of July 1, 2014**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$83,654	0 \$0	0 \$0	0 \$0	1 \$83,654
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	7 \$86,117	8 \$92,859	0 \$0	0 \$0	15 \$89,713
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8 \$82,658	8 \$94,192	1 \$118,960	0 \$0	17 \$90,221
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$90,417	6 \$99,034	1 \$103,741	0 \$0	8 \$98,545
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$103,741	1 \$128,475	1 \$84,398	3 \$105,538
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$86,569	1 \$86,569
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	17 \$84,598	23 \$95,407	3 \$117,059	2 \$85,484	45 \$92,326

History of Investment Return Rates

Year Ending June 30 of	Market
(1)	(2)
2000	20.61%
2001	-18.81%
2002	-6.79%
2003	3.40%
2004	16.63%
2005	9.25%
2006	8.24%
2007	14.79%
2008	-4.12%
2009	-16.88%
2010	14.27%
2011	22.30%
2012	-0.07%
2013	11.91%
2014	15.30%
Average Returns:	
Last 5 Years	12.50%
Last 10 Years	6.90%

Near Term Outlook

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Market Value of Fund (in 000s)	For Fiscal Year Ending June 30,	Covered Compensation	Employer Contributions	Employee Contributions	Benefit Payments and Refunds	Net External Cash Flow
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2014	\$ 210,830,722	23.9%	\$ 71,622,345	2014	\$ 4,154,657	\$ 15,624,663	\$ 290,826	\$ 20,313,316	\$(4,397,826)
2015	208,579,259	25.0%	72,434,258	2015	3,332,692	16,987,456	183,883	20,983,731	(3,812,392)
2016	206,497,124	25.7%	73,914,055	2016	2,678,407	17,139,861	145,831	21,570,405	(4,284,713)
2017	202,999,547	26.7%	75,015,124	2017	2,124,148	17,373,213	113,748	22,078,404	(4,591,444)
2018	199,540,414	27.6%	75,880,749	2018	1,656,830	17,559,011	82,650	22,550,960	(4,909,300)
2019	196,591,428	28.0%	76,481,735	2019	1,203,859	17,802,823	58,329	22,930,445	(5,069,293)

These projections are based on the current funding policy and assumes that all current assumptions are met each year in the future.

Schedule of Funding Progress

Date	Actuarial Value	Actuarial Accrued	Unfunded Actuarial	Funded Ratio	Annual	UAAL as % of
	of Assets (AVA)	Liability (AAL)	Accrued Liability	(2)/(3)	Benefits *	Benefits (4)/(6)
(1)	(2)	(3)	(UAAL) (3) - (2)	(5)	(6)	(7)
July 1, 2009	\$ 76,142,283	\$ 286,514,010	\$ 210,371,727	26.6%	\$17,787,184	1182.7%
July 1, 2011	69,580,218	311,707,868	242,127,650	22.3%	18,532,731	1306.5%
July 1, 2013	62,796,555	309,774,579	246,978,024	20.3%	19,691,440	1254.2%
July 1, 2014	66,348,673	277,179,395	210,830,722	23.9%	19,675,904	1071.5%

* Due to closed plan, exhibit was modified to compare the UAAL to the Annual Benefits

Actuarial Methods and Assumptions

Actuarial Cost Method:

Entry Age Normal actuarial cost method: Under this method, the normal cost is the amount calculated as the level percentage of pay necessary to fully fund each active member's prospective benefit from entry age to retirement age. The total actuarial accrued liability, which is redetermined for each individual member as of each valuation date, represents the theoretical accumulation of all prior years' normal costs for the active members as if the present plan had always been in effect, plus the liability for any retirees, beneficiaries, or inactive members. The unfunded actuarial accrued liability represents the excess of the total actuarial accrued liability over the valuation assets.

Amortization Policy:

The amortization of the UAAL is determined as a level percentage of payroll over a closed period using the process of “laddering”. Bases that existed prior to this valuation continue to be amortized on their original schedule. New experience losses are amortized over individual periods of either 20 years or the remaining average remaining life expectancy of the group, whichever is lesser. New gains are offset against and amortized over the same period as the current largest outstanding loss which in turn decreases contribution rate volatility.

Asset Valuation Method:

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

Actuarial Assumptions:

1. *Interest* 7.50% per year, net of investment and administrative expenses.
2. *Salary Increases* The sum of (i) a 4.00% wage inflation assumption (composed of a 2.75% price inflation assumption and a 1.25% additional general increase), and (ii) a service-related component as shown below:

Police/Fire Employees		
Years of Service	Service-Related Component	Total Increase
1	10.00%	14.00%
2	9.00	13.00
3	7.00	11.00
4	4.00	8.00
5	2.50	6.50
6	3.00	7.00
7	0.50	4.50
8	0.50	4.50
9 or more	0.00	4.00

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period year following the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption. For employees with less than one year of service, the reported rate of pay is used rather than the fiscal year salary paid.

3. Mortality

A. Pre-retirement mortality (combined ordinary and duty):

- a. Male employees: 115% of the RP-2000 Combined Healthy for Males with White Collar adjustments, projected with Scale AA.
- b. Female employees: 95% of the RP-2000 Combined Healthy for Females with White Collar adjustments, projected with Scale AA.
- c. Disabled males – 60% of the PBGC Table Va for disabled males eligible for Social Security disability benefits.
- d. Disabled females – 60% of the PBGC Table VIa for disabled females eligible for Social Security disability benefits.

B. Pre-retirement mortality (combined ordinary and duty):

- a. Male employees: 75% of RP-2000 Combined Healthy for Males with White Collar adjustments.
- b. Female employees: 75% of RP-2000 Combined Healthy for Females with White Collar adjustments.

Sample rates are shown below:

Number of Deaths per 100		
Age	Males	Females
25	0.03	0.02
30	0.03	0.02
35	0.04	0.03
40	0.07	0.05
45	0.10	0.08
50	0.15	0.12
55	0.25	0.19
60	0.42	0.35
65	0.83	0.65
70	1.45	1.14

4. Disability

Sample rates per 1,000 active members are shown below. Ordinary disability rates are not applied to members eligible for retirement.

Age	Number of Disabilities per 1,000	
	Ordinary, Males and Females	Accidental, Males and Females
25	0.26	2.55
30	0.33	3.30
35	0.44	4.35
40	0.66	6.60
45	1.08	10.80
50	1.82	18.15
55	1.82	18.15
60	1.82	18.15
65	1.82	18.15

5 . Termination:

Termination rates (for causes other than death, disability, or retirement) are a function of the member’s service. Termination rates are not applied to members eligible for retirement. Rates are shown below:

Service	Termination Rate	Service	Termination Rate
1	0.100000	11	0.012761
2	0.047300	12	0.011332
3	0.036903	13	0.010026
4	0.030821	14	0.008826
5	0.026506	15	0.007714
6	0.023158	16	0.006679
7	0.020424	17	0.005711
8	0.018111	18	0.004802
9	0.016108	19	0.003944
10	0.014342	20+	0.000000

6. **Retirement Age** Rates of retirement are based on an employee’s length of service, as follows:

Fire II Members	
Service	Retirement Election
25	50.0%
26	16.0%
27	18.0%
28	20.0%
29	20.0%
30+	35.0%

7. **Benefit and Compensation Limits** Benefit limits under Section 415 and compensation limits under Section 401(a)(17) of the Internal Revenue Code are assumed to have no impact on benefits earned under this plan.
8. **Marriage / Dependents** 80% of active employees are assumed to be married at retirement or death, with two children ages 11 and 13. Wives are assumed to be three years younger than their husbands. No remarriage is assumed.
9. **Service Purchase** None assumed.
10. **Election of Fire II Program by Retiring Firefighters** We assume members who retire with 28 or more years of service will elect the Fire II plan.
11. **Administrative and Investment Expenses** None. The 7.50% investment return assumption represents the assumed return net of all investment and administrative expenses.

Outline of Principal Plan Provisions

A. FIREFIGHTERS

1. *Effective Dates*

- a. Original Plan May 7, 1953.
- b. Most Recent Amendment July 23, 1996.

2. *Eligibility*

All permanent members of the fire department hired prior to May 29, 1992.

3. *Retirement*

- a. Eligibility Members who have completed 20 years of service may retire.
- b. Benefit Formula The annual benefit at retirement is equal to 50% of highest annual salary, plus 1% of salary for each year of service in excess of 20 (maximum 10). For pension purposes, annual salary includes regular, holiday, and longevity pay. Members may also select the benefit formula for the Firefighters II Pension Fund. The Firefighter II benefit formula is 50% of the final year's compensation, plus 2% for each year of service from 20 to 25 years, plus 3% for each year of service from 25 to 30 years with a fixed 3% compound cost of living adjustment.
- c. Commencement Date Retirement benefits commence as of the first payroll period after retirement.
- d. Form of Payment The annual benefit calculated in accordance with the formula in (b) above is payable semi-monthly for the remainder of the retired member's life, with 67.5% of the member's benefit payable for the lifetime of his surviving spouse.

4. Vested Termination

- | | |
|----------------------|--|
| a. Eligibility | Upon termination of employment after 10 years of service, a member is eligible for a benefit deferred to retirement age. |
| b. Benefit Formula | 2.5% of highest annual salary multiplied by full years of service at termination. |
| c. Commencement Date | 20th anniversary of employment. |
| d. Form of Payment | Same as retirement. |

5. Disability Retirement

- | | |
|----------------------|---|
| a. Eligibility | A member who is unable to perform active duty as a result of disability which the Board of Public Safety finds to be permanently incapacitating is eligible to receive disability retirement benefits. |
| b. Benefit Formula | <u>Service-Related (and involving heart, lung, cancer or other Social Security disabilities)</u> . $66\frac{2}{3}\%$ of highest annual salary, reduced for each dollar of earned income in excess of the salary the member would earn as an active employee, to a minimum of 50% of salary.

<u>Other Service Related and Non-Service Related</u> . 50% of highest annual salary. |
| c. Commencement Date | Benefits commence as of the first payroll period after disability. |
| d. Form of Payment | Same as retirement. |

6. Non-vested Termination of Employment

A member who leaves employment prior to completing 10 years of service will receive a lump sum payment of his accumulated contributions without interest.

**7. Death Before Retirement
 -- Survivor Annuity
 Benefits**

- | | |
|----------------------------------|---|
| a. Eligibility | Death while actively employed. |
| b. Benefit Formula | |
| (1) Surviving Spouse | <p><u>Service Related.</u> The annual benefit is 50% of the deceased member's highest annual salary, payable to the surviving spouse until death or earlier remarriage.</p> <p><u>Non-Service Related.</u> 30% of the deceased member's highest annual salary, payable to the surviving spouse until death or earlier remarriage.</p> |
| (2) Surviving Children | 10% of the deceased member's highest annual salary, payable to each surviving child until his 18th birthday (or for life if such child is permanently disabled prior to the member's death). |
| (3) Maximum Family Death Benefit | <p><u>Service-Related.</u> 75% of deceased's highest annual salary.</p> <p><u>Non-Service Related.</u> 50% of deceased's highest annual salary.</p> |
| c. Commencement Date | Benefits commence as of the first payroll period after death. |
| d. Form of Payment | Surviving spouse's and children's benefits are payable semi-monthly. |

**8. Death Before Retirement
 -- Lump Sum Refund of
 Contributions**

A lump sum payment equal to the member's accumulated contributions without interest shall be paid to the estate of any active member who dies with no surviving spouse or children.

9. Retiree Cost-of-Living Increases	All benefits in pay status are indexed in accordance with the base salary increases provided to active employees. We have assumed 4.0% per annum in this valuation.
10. Service Purchase	An active employee eligible to retire who has served in the U.S. armed forces may "purchase" additional years of service up to his number of years of military service, but no more than four years. A member may also purchase up to four years of prior civilian employment time with the City of Warwick. Either purchase would require the employee to contribute to the fund, at retirement, an amount which represents the actuarial equivalent value of the benefit increase purchased.
11. Employee Contributions	Active members contribute 7% of their covered earnings (regular, holiday, and longevity).
12. Optional Retirement Under Fire II Program	Any firefighter retiring after July 23, 1996 may irrevocably elect to have his or her pension calculated under the City's Fire II program, including final year's compensation, a benefit multiplier increasing from 50% of pay after 20 years of service to 75% of pay after 30 years of service, and a fixed 3.0% annual cost-of-living increase.
B. POLICE I	
1. Eligibility	Active and retired Police hired before February 1, 1971 are covered under this program.
2. Benefits	Benefits provided to remaining active police are in accordance with the proposed City's Code of Ordinances. Retirement, death, and disability benefits payable to retired members and beneficiaries are indexed in accordance with the base salary increases provided to active members of the police force.
3. Employee Contributions	Active members contribute 7% of their covered earnings (regular, holiday, and longevity).