The Town of Smithfield

Fire Department Pension Plan

Actuarial Valuation Report

Plan Year July 1, 2016 – June 30, 2017

November 2016

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November 4, 2016

Mr. Randy R. Rossi
Finance Director
Town of Smithfield
64 Farnum Pike
Smithfield, RI 02917

Dear Randy:

Buck Consultants was retained to complete this actuarial valuation of the Town of Smithfield Fire Department Pension Plan. This report presents the results of the valuation for the plan year and the fiscal year ending June 30, 2017, including the recommended contribution.

Purpose of this Report

The plan sponsor may use this report to determine plan contributions. The report may also be used to prepare the plan's and the plan sponsor's audited financial statements.

Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, Buck recommends requesting it to perform an advance review of any statement, document, or filing based on information contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

Where presented, references to "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities As noted in the presentation of actuarial assumptions, the only difference between actuarial and market value of assets is that for the former the IPG contract is valued at book value.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Buck performed no analysis of the potential range of such future differences other than the sensitivity to possible changes in the discount rate, as an analysis of the potential range of such future differences is beyond the scope of this valuation.

Recent Guidance

This report reflects information required as part of GASB Statements Nos. 67 and 68, which were issued in 2012. These standards came into effect for the prior fiscal year and will continue to be implemented for fiscal years beginning after June 15, 2014.

Data Used

Buck performed the valuation using participant and financial data supplied by the Town and John Hancock Life Insurance Company. Buck did not audit the data, although they were reviewed for reasonableness and consistency with the prior year data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

Actuarial Certification

The actuarial assumptions used to value the plan for funding purposes were selected by David Driscoll and are, individually and in the aggregate, reasonable and in combination represent his best estimate of anticipated experience under the plan.

The plan sponsor selected the assumptions used for the accounting results in the report with our advice. We believe that these assumptions are reasonable and comply with the requirements of GASB Statements Nos. 67 and 68. We prepared this report's accounting exhibits in accordance with the requirements of these standards.

Based on the individually reasonable assumptions used in the preparation of this report, and on the data furnished us, we certify that projection of the costs under this plan has been made using generally accepted actuarial principles and practices, and that our recommended contributions make adequate provision for the funding of future benefits.

The report was prepared under the supervision of David L. Driscoll. We are members of the Society of Actuaries and of the American Academy of Actuaries. We meet the Qualification Standards of the Academy to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

BUCK CONSULTANTS, LLC

David L. Driscoll

David L. Driscoll, FSA, EA, MAAA
Principal, Consulting Actuary

Jonathan E. Dobbs, ASA, EA, MAAA
Director, Retirement Actuary

DD/JED/jac

cc: Mr. Dennis Finlay

Table of Contents

Section 1 – Summary

This report presents the results of the actuarial valuation of the Town of Smithfield Fire Department Pension Plan for the plan year beginning July 1, 2016. In summary, the following is a comparison of the recommended contributions, expenses, assets, liabilities, and participant data for the plan year beginning July 1, 2016, and the prior plan year.

	2015 Plan Year	2016 Plan Year
Normal Cost	$ 293,773	$ 396,171
Accrual Rate	12.96%	17.25%
Valuation Payroll	$ 2,266,764	$ 2,296,642
Recommended Employer Contributions		
Recommended Employer Contribution	$ 1,294,057	$ 1,481,677
% of Valuation Payroll	57.09%	64.51%
Minimum Recommended Employer Contribution	$ 1,030,435	$ 1,171,221
% of Valuation Payroll	45.46%	51.00%
Actuarial Value of Assets	$ 20,259,031	$ 20,150,193
Unfunded Actuarial Accrued Liability	$ 8,686,072	$ 9,129,787
Present Value of Future Benefits	$ 33,432,149	$ 34,600,584
	June 30, 2015	**June 30, 2016**
GASB 67 and 68 Information		
Discount rate	6.88%	6.16%
Total pension liability	$ 35,615,775	$ 41,247,109
Fiduciary net position	$ 20,313,875	$ 20,275,092
Net pension liability	$ 15,301,900	$ 20,972,017
Pension expense	$ 359,485	$ 1,325,229

Section 1 – Summary (continued)

Recommended Contribution

The recommended contribution for the 2016 year has been developed using the Frozen Initial Liability Actuarial Cost Method, which develops contributions that are expected to remain approximately level as a percentage of covered pay assuming that actual experience is in line with expected experience. The net result of 2015 plan experience and assumption changes was an increase in the normal cost rate, expressed as a percentage of compensation, from 12.96% to 17.25%.

The plan is expected to be funded through Town and member contributions based on a negotiated percentage of pay per the collective bargaining agreement for the period July 1, 2016 to June 30, 2019. The agreement indicates that the negotiated percentage of payroll during the period is as follows:

Period	Town	Member
July 1, 2016 – June 30, 2017	22.6%	10%
July 1, 2017 – June 30, 2018	23.6%	10%
July 1, 2018 – June 30, 2019	24.6%	10%

The valuation indicates that such contributions will not be sufficient to fund the future benefit accruals and the existing unfunded liability.

Details regarding the recommended contribution are shown in Section 2.

Plan Assets

John Hancock furnished the financial data. The actuarial value of plan assets decreased from $20,259,031 as of June 30, 2015 to $20,150,193 as of June 30, 2016.

Details regarding plan assets are shown in Section 3, Statement of Fiduciary Net Position.

Plan Participants

The plan sponsor and John Hancock provided the data concerning plan participants as of the valuation date.

VALUATION DATE	July 1, 2015	July 1, 2016
Number of Participants		
Active	44	43
Terminated Vested	3	3
Disabled	5	5
Retirees and Beneficiaries	30	31
Total	82	82
Active Participant Demographics (averages)		
Attained Age	41.8	42.4
Hire Age	27.2	27.3
Participation Entry Age	27.2	27.3

A reconciliation of the plan participants and a summary of participant characteristics are included in Section 5 of this report.

Section 1 – Summary (continued)

Actuarial Assumptions and Methods

The economic and demographic assumptions used in this actuarial valuation are based upon a review of the existing portfolio and current economic conditions as well as the experience study that was performed in 2015 and published in May, 2015.

The discount rate assumption used for GASB 67 and 68 purposes has been changed from 6.88% to 6.16%.

The rest of the actuarial assumptions and methods are the same as those used in the prior actuarial valuation.

Section 6 contains a summary of the actuarial assumptions and methods used in this actuarial valuation.

Plan Provisions

The actuarial valuation results contained in this report are based on the plan provisions in effect on July 1, 2016, which reflect the change to the member contribution rate from 9% to 10% per the current collective bargaining agreement. Other than that change, these plan provisions are the same as those used in the prior actuarial valuation.

A summary of the plan provisions is in Section 7.

Plan Experience

Plan experience in the 2015-2016 plan year was less favorable than that anticipated under the funding assumptions used in the valuation, which led to the development of an overall experience loss for the year.

The primary source of the loss was unfavorable investment experience. These losses were offset somewhat by fewer-than-expected retirements during the year and salary increases that were lower than anticipated. The plan experienced a rate of return on the actuarial value of assets of approximately 2.02%, compared to the assumed 8.50%. Thus, the value of the actuarial value of assets at July 1, 2016 is $1,294,480 lower than expected.

The following table quantifies the various sources of gains and losses.

Section 1 – Summary (continued)

Source (positive numbers indicate a gain, negative numbers a loss)	**Effect on Employer Liability**	**Effect on NC Rate**
Demographic		
• Inactive mortality	$ (121,911)	0.60%
• Active mortality	6,929	(0.03%)
• Retirement	153,257	(0.77%)
• Termination	(29,789)	0.15%
• Disability	27,194	(0.14%)
• Other (e.g., data changes)	(28,668)	0.15%
• Total	$ 7,012	(0.04%)
Salary growth	217,935	(1.09%)
Investment growth	(1,294,480)	6.36%
Total experience gain/(loss)	$ (1,069,533)	5.23%

Section 2 – Recommended Contribution

Development of the Unfunded Actuarial Accrued Liability	July 1, 2015	July 1, 2016
1. Unfunded Actuarial Accrued Liability at beginning of prior year	$ 8,505,808	$ 8,686,072
2. Normal Cost for the prior plan year	375,878	293,773
3. Interest on (1) and (2) to end of plan year	754,943	763,287
4. Employer Contributions for the prior plan year	(556,062)	(590,143)
5. Interest on Contributions to the end of plan year	(23,151)	(24,570)
6. Additional Unfunded Actuarial Accrued Liability at valuation date due to plan amendment	0	1,368
7. Additional Unfunded Actuarial Accrued Liability at valuation date due to assumption changes	(371,344)	0
8. Additional Unfunded Actuarial Accrued Liability at valuation date due to change in funding method	0	0
9. Unfunded Actuarial Liability at valuation date: Sum of (1) through (8), not less than zero	$ 8,686,072	$ 9,129,787

Development of the Normal Cost Under the Frozen Initial Liability Actuarial Cost Method	July 1, 2015	July 1, 2016
1. Present value of future benefits:		
a. Retired participants and beneficiaries	$ 13,325,344	$ 14,292,922
b. Non-contributing and terminated participants entitled to deferred vested pensions	130,256	141,388
c. Disabled participants	2,821,856	2,864,400
d. Contributing active participants	17,154,693	17,301,874
e. Total present value of future benefits	$ 33,432,149	$ 34,600,584
2. Present value of future employee contributions	$ 1,781,425	$ 1,886,288
3. Actuarial value of assets	$ 20,259,031	$ 20,150,193
4. Unfunded Actuarial Liability	$ 8,686,072	$ 9,129,787
5. Present value of future normal costs (1e) – (2) – (3) – (4)	$ 2,705,621	$ 3,434,316
6. Present value of future compensation	$ 20,870,085	$ 19,905,978
7. Normal cost accrual rate (5) ÷ (6)	12.96%	17.25%
8. Annual covered payroll	$ 2,266,764	$ 2,296,642
9. Normal cost (7) × (8)	$ 293,773	$ 396,171

Section 2 – Recommended Contribution (continued)

Recommended Employer Contribution	July 1, 2015	July 1, 2016
1. Normal cost	$ 293,773	$ 396,171
2. Expected expenses	$ 15,000	$ 13,000
3. 15-year (16 years for prior year) amortization of unfunded actuarial liability	$ 933,561	$ 1,013,284
4. Recommended employer contribution (1.) + (2.) + (3.)	$ 1,242,334	$ 1,422,455
5. Adjustment for interest to mid-year	$ 51,723	$ 59,222
6. Total recommended employer contribution: (4.) + (5.)	$ 1,294,057	$ 1,481,677

Minimum Recommended Employer Contribution	July 1, 2015	July 1, 2016
1. Normal cost	$ 293,773	$ 396,171
2. Expected expenses	$ 15,000	$ 13,000
3. Interest on unfunded actuarial liability, discounted to beginning of year	$ 680,476	$ 715,237
4. Minimum recommended employer contribution (1.) + (2.) + (3.)	$ 989,249	$ 1,124,408
5. Adjustment for interest to mid-year	$ 41,186	$ 46,813
6. Total minimum recommended employer contribution (4.) + (5.)	$ 1,030,435	$ 1,171,221

Employee Contributions	July 1, 2015	July 1, 2016
Estimated employee contributions	$ 203,004	$ 209,893

Section 3 – Statement of Fiduciary Net Position

Reconciliation of Actuarial Value of Assets

	IPG Contract	S&P 500 Stock Index Fund 1A	Diversified Stock Fund 1K	Total
1. Assets as of July 1, 2015				
a. Fund assets as of July 1, 2015	$ 1,255,008	$ 9,805,156	$ 9,122,611	$ 20,182,775
b. Receivables (employer)	0	26,535	26,535	53,070
c. Receivables (employee)	0	11,593	11,593	23,186
d. Actuarial Value of assets	$ 1,255,008	$ 9,843,284	$ 9,160,739	$ 20,259,031
2. Income				
a. Employer Contributions	$ 0	$ 268,330	$ 268,329	$ 536,659
b. Employee Contributions	0	111,804	111,804	223,608
c. Investment Return	97,080	350,487	30,984	478,551
d. Transfers	800,000	(400,000)	(400,000)	0
e. Total	$ 897,080	$ 330,621	$ 11,117	$ 1,238,818
3. Expenses				
a. Benefit Payments	$ 1,335,349	$ 0	$ 0	$ 1,335,349
b. Administrative Expense	12,497	0	0	12,497
c. Investment Expense	0	19,665	55,914	75,579
d. Total	$ 1,347,846	$ 19,665	$ 55,914	$ 1,423,425
4. Assets as of June 30, 2016				
a. Fund assets (1d. + 2e. - 3d.)	$ 804,242	$ 10,154,240	$ 9,115,942	$ 20,074,424
b. Receivables (employer)	0	26,742	26,742	53,484
c. Receivables (employee)	0	11,143	11,142	22,285
d. Actuarial Value of assets	$ 804,242	$ 10,192,125	$ 9,153,826	$ 20,150,193

Determination of Market Value of Assets

	IPG Contract Book Value	Market Value Adjustment for IPG	IPG Contract Market Value	Separate Stock Funds	Total Market Value
	(a)	(b)	(c) = (a) x [1 + (b)]	(d)	(c) + (d)
1. Assets as of July 1, 2015	$ 1,255,008	4.37%	$ 1,309,852	$19,004,023	$ 20,313,875
2. Assets as of July 1, 2016	$ 804,242	15.53%	$ 929,141	$19,345,951	$ 20,275,092

Section 3 – Statement of Fiduciary Net Position (continued)

Statement of Changes in Fiduciary Net Position		2016
Additions		
Contributions		
Employer	$	590,143
Member		245,893
Total contributions	$	836,036
Net investment income		473,027
Other		0
Total additions	$	1,309,063
Deductions		
Benefit payments	$	1,335,349
Administrative expense		12,497
Other		0
Total deductions	$	1,347,846
Net increase in net position	$	(38,783)
Net position restricted for pensions		
Beginning of the year	$	20,313,875
End of the year	$	20,275,092

Section 4 – GASB 67 and 68 Information (continued)

A. Summary of Significant Accounting Policies

Method used to value investments

Investments are reported at fair value.

Actuarial cost method

Entry age normal, with individual normal costs developed as a level percentage of pay.

B. Plan Description

Plan administration

The Town of Smithfield, Rhode Island administers the Town of Smithfield Fire Department Pension Plan (Plan), a single-employer defined benefit pension plan that provides pensions for members of the Fire Department. The plan was closed to new entrants as of December 31, 2010.

Plan membership

At June 30, 2016, pension plan membership consisted of the following:

Membership Status	Count	Total Expected Future Working Lifetime	Average Expected Future Working Lifetime
Inactive plan members or beneficiaries currently receiving	36	0	
Inactive plan members entitled to but not yet receiving	3	0	
Active plan members	43	411	
Total	82	411	5.01

Benefits provided

Please see Section 7 of the report for a summary of plan provisions.

Contributions

The plan is expected to be funded through Town and member contributions based on a negotiated percentage of pay per the collective bargaining agreement for the period July 1, 2016 to June 30, 2019. The agreement indicates that the negotiated percentage of payroll during the period is as follows:

Period	Town	Member
July 1, 2016 – June 30, 2017	22.6%	10%
July 1, 2017 – June 30, 2018	23.6%	10%
July 1, 2018 – June 30, 2019	24.6%	10%

An actuarially determined contribution is developed using the Frozen Initial Liability Actuarial Cost Method, which develops contributions that are expected to remain approximately level as a percentage of covered pay assuming that actual experience is in line with expected experience. For the year ended June 30, 2016, the Town contributed $590,143 to the plan.

Section 4 – GASB 67 and 68 Information (continued)

C. Investments

For the year ended June 30, 2016, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 2.36%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

D. Receivables

Employer and employee contributions made for the month of June that are actually paid in July are counted as receivables for purposes of this valuation.

E. Net Pension Liability

The components of the net pension liability at June 30, 2016, were as follows:

Components of Net Pension Liability	
Total pension liability	$ 41,247,109
Plan fiduciary net position	(20,275,092)
Net pension liability	$ 20,972,017
Plan fiduciary net position as a percentage of the total pension liability	49.16%

F. Pension Expense as of June 30, 2016

Pension Expense	Fiscal Year Ending June 30, 2016
Service Cost	$ 755,471
Interest Cost on Total Pension Liability	2,457,170
Differences between Expected and Actual Experience	(64,386)
Change of Benefit Terms	1,368
Changes of Assumptions	(203,912)
Contributions-Member	(245,893)
Projected Earnings on Plan Investments	(1,705,252)
Differences between Projected and Actual Earnings	318,166
Administrative Expenses	12,497
Other	0
Total Pension Expense	$ 1,325,229

The difference between projected and actual investment earnings is recognized over five years, in accordance with the provisions of GASB 68. Differences due to assumption changes and experience are amortized over the expected future working lifetime of all participants which is 5.01 years.

Section 4 – GASB 67 and 68 Information (continued)

G. Actuarial assumptions

The total pension liability was determined by an actuarial valuation as of June 30, 2016, using the following actuarial assumptions, applied to all periods included in the measurement:

Actuarial Assumptions	
Inflation	3.00%
Salary increases	4.00%
Investment rate of return	8.50%, net of pension plan investment expenses. This is based on an average inflation rate of 3.00% and a real rate of return of 5.50%.

The mortality assumption is as follows: for male annuitants and non-annuitants, 115% of RP-2000 Combined Healthy for Males with White Collar adjustments, projected generationally with Scale AA from 2000, and for female annuitants and non-annuitants, 95% of RP-2000 Combined Healthy for Females with White Collar adjustments, projected generationally with Scale AA from 2000.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2016 are summarized in the following table (note that the rates shown below include the inflation component):

Asset Class	Long-Term Expected Rate of Return
Domestic equity	12.2%
International equity	10.5%
Fixed income	5.7%
Real estate	9.9%
Cash	4.1%

Discount rate

The discount rate used to measure the total pension liability was 6.16%. The projection of cash flows used to determine the discount rate assumed that Town contributions will continue to follow the pattern of contributions observed over the last five years. During that period, the Town contributed 37.6% of the cumulative recommended contribution level. Accordingly, the fiduciary net position was projected assuming that 37.6% of future recommended contribution levels will be contributed. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members until the year 2059. A municipal bond rate of 2.71% was used in the development of the blended GASB discount rate after that point. The 2.71% was the yield to maturity of the S&P Municipal Bond 20 Year High Grade Rate Index as of June 30, 2016. Based on the long-term rate of return of 8.50% and the municipal bond rate of 2.71%, the blended GASB discount rate is 6.16%.

Section 4 – GASB 67 and 68 Information (continued)

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability, calculated using the discount rate of 6.16%, as well as what the Town's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.16%) or 1-percentage-point higher (7.16%) than the current rate:

	1% Decrease (5.16%)	Current Discount Rate (6.16%)	1% Increase (7.16%)
Net Pension Liability	$27,740,105	$ 20,972,017	$15,600,668

Section 4 – GASB 67 and 68 Information (continued)

Schedules of Required Supplementary Information

Schedule of Changes in Town's Net Pension Liability and Related Ratios

	2016
Total pension liability	
Service cost	$ 755,471
Interest	2,457,170
Changes of benefit terms	1,368
Changes of assumptions	3,986,007
Differences between expected and actual experience	(233,333)
Benefit payments	(1,335,349)
Net change in total pension liability	$ 5,631,334
Total pension liability-beginning	$ 35,615,775
Total pension liability-ending (a)	$ 41,247,109
Plan fiduciary net pension	
Contributions-employer	$ 590,143
Contributions-employee	245,893
Net investment income	473,027
Benefit payments, including refunds of employee contributions	(1,335,349)
Administrative expense	(12,497)
Other	0
Net change in plan fiduciary net position	$ (38,783)
Plan fiduciary net position-beginning	$ 20,313,875
Plan fiduciary net position-ending (b)	$ 20,275,092
Net pension liability-ending (a)-(b)	$ 20,972,017
Plan fiduciary net position as a percentage of the total pension liability	49.16%
Covered-employee payroll	$ 2,296,642
Net pension liability as a percentage of covered-employee payroll	913.16%

Notes to Schedule:

A. Benefit changes

The total pension liability reflects the negotiated change in member contributions from 9% to 10% of pay.

B. Changes of assumptions

In 2016, amounts reported as changes of assumptions resulted from the change in discount rate from 6.88% to 6.16%.

Schedules of Required Supplementary Information (continued)

Schedule of Town Contributions

	2016
Actuarially determined contribution	$ 1,294,057
Contributions related to the actuarially determined contribution	590,143
Contribution deficiency (excess)	$ 703,914

Notes to Schedule:

A. Valuation date

Actuarially determined contribution rates are calculated as of July 1, in the fiscal year in which contributions are reported. That is, the contribution calculated as of July 1, 2016 will be made during the fiscal year ended June 30, 2017.

B. Methods and assumptions used to determine contribution rates:

Actuarial cost method

Frozen Initial Liability

Amortization method

Level dollar

Amortization period

20 years beginning in 2011

Asset valuation method

The book value of the IPG assets and the market value of all other assets.

Inflation

3.00% per annum.

Salary increases

4.00% per annum.

Investment rate of return

8.50%, net of pension plan investment expenses. This is based on an average inflation rate of 3.00% and a real rate of return of 5.50%.

Retirement age

25% assumed to retire upon the attainment of 20 years of service and the remainder at 25 years.

Mortality

For male annuitants and non-annuitants, 115% of RP-2000 Combined Healthy for Males with White Collar adjustments, projected generationally with Scale AA from 2000, and for female annuitants and non-annuitants, 95% of RP-2000 Combined Healthy for Females with White Collar adjustments, projected generationally with Scale AA from 2000.

Other information

Please see Section 7 of the report.

Schedule of Investment Returns

	2016
Annual money-weighted rate of return, net of investment expenses	2.36%

Section 4 – GASB 67 and 68 Information (continued)

Table 1 – Projection of Fiduciary Net Position (000’s omitted)

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Net Position
2017	$ 20,275	$ 228	$ 557	$ 1,689	$ 13	$ 1,676	$ 21,035
2018	21,035	225	598	1,780	13	1,729	21,794
2019	21,794	221	644	1,879	14	1,784	22,551
2020	22,551	226	701	1,928	14	1,845	23,380
2021	23,380	233	768	1,970	15	1,917	24,313
2022	24,313	234	841	2,050	15	2,000	25,322
2023	25,322	232	926	2,141	16	2,091	26,414
2024	26,414	220	1,022	2,291	16	2,188	27,537
2025	27,537	220	1,143	2,370	16	2,291	28,805
2026	28,805	221	1,301	2,447	17	2,406	30,269
2027	30,269	209	1,500	2,589	17	2,534	31,906
2028	31,906	191	1,773	2,765	18	2,677	33,765
2029	33,765	151	2,178	3,069	19	2,838	35,845
2030	35,845	146	2,936	3,178	19	3,042	38,771
2031	38,771	111	4,899	3,450	20	3,360	43,670
2032	43,670	65	41	3,781	20	3,558	43,534
2033	43,534	37	22	4,007	21	3,535	43,101
2034	43,101	25	12	4,142	21	3,492	42,466
2035	42,466	13	9	4,272	22	3,432	41,626
2036	41,626	7	9	4,367	23	3,356	40,609
2037	40,609	-	568	4,465	23	3,289	39,977
2038	39,977	-	590	4,519	24	3,234	39,258
2039	39,258	-	614	4,567	25	3,171	38,451
2040	38,451	-	638	4,612	26	3,102	37,552
2041	37,552	-	662	4,657	26	3,025	36,556

Section 4 – GASB 67 and 68 Information (continued)

Table 1 – Projection of Fiduciary Net Position (000's omitted)

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Net Position
2042	36,556	-	688	4,695	27	2,939	35,462
2043	35,462	-	715	4,728	28	2,846	34,267
2044	34,267	-	743	4,756	29	2,744	32,969
2045	32,969	-	772	4,779	30	2,634	31,565
2046	31,565	-	802	4,796	31	2,515	30,056
2047	30,056	-	830	4,806	32	2,388	28,435
2048	28,435	-	862	4,809	32	2,251	26,708
2049	26,708	-	896	4,804	33	2,106	24,873
2050	24,873	-	931	4,791	34	1,952	22,931
2051	22,931	-	968	4,769	36	1,789	20,884
2052	20,884	-	1,006	4,738	37	1,618	18,733
2053	18,733	-	1,046	4,697	38	1,439	16,482
2054	16,482	-	1,087	4,645	39	1,251	14,136
2055	14,136	-	1,129	4,584	40	1,056	11,697
2056	11,697	-	1,174	4,513	41	854	9,170
2057	9,170	-	1,220	4,433	42	644	6,559
2058	6,559	-	1,268	4,344	44	428	3,866
2059	3,866	-	1,315	4,245	39	205	1,103
2060	1,103	-	1,356	4,137	11	1,689	-
2061	-	-	1,330	4,021	-	2,691	-
2062	-	-	1,260	3,896	-	2,636	-
2063	-	-	1,189	3,763	-	2,574	-
2064	-	-	1,118	3,624	-	2,506	-
2065	-	-	1,048	3,480	-	2,432	-
2066	-	-	978	3,331	-	2,353	-

Section 4 – GASB 67 and 68 Information (continued)

Table 1 – Projection of Fiduciary Net Position (000's omitted)

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Net Position
2067	-	-	909	3,177	-	2,268	-
2068	-	-	842	3,019	-	2,178	-
2069	-	-	775	2,858	-	2,083	-
2070	-	-	711	2,694	-	1,983	-
2071	-	-	648	2,527	-	1,879	-
2072	-	-	588	2,359	-	1,771	-
2073	-	-	530	2,191	-	1,661	-
2074	-	-	475	2,024	-	1,549	-

Section 4 – GASB 67 and 68 Information (continued)

Table 2 – Actuarial Present Values of Projected Benefit Payments (000's omitted)

			Benefit Payments		Present Value of Benefit Payments		
Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments	Funded Portion	Unfunded Portion	Funded Portion at 8.50%	Unfunded Portion at 2.71%	Using a Single Discount Rate of 6.16%
2017	20,275	1,689	1,689	-	1,621	-	1,639
2018	21,035	1,780	1,780	-	1,575	-	1,628
2019	21,794	1,879	1,879	-	1,532	-	1,618
2020	22,551	1,928	1,928	-	1,449	-	1,564
2021	23,380	1,970	1,970	-	1,365	-	1,505
2022	24,313	2,050	2,050	-	1,309	-	1,476
2023	25,322	2,141	2,141	-	1,260	-	1,452
2024	26,414	2,291	2,291	-	1,242	-	1,463
2025	27,537	2,370	2,370	-	1,185	-	1,426
2026	28,805	2,447	2,447	-	1,127	-	1,387
2027	30,269	2,589	2,589	-	1,099	-	1,382
2028	31,906	2,765	2,765	-	1,082	-	1,390
2029	33,765	3,069	3,069	-	1,107	-	1,454
2030	35,845	3,178	3,178	-	1,057	-	1,418
2031	38,771	3,450	3,450	-	1,057	-	1,450
2032	43,670	3,781	3,781	-	1,068	-	1,497
2033	43,534	4,007	4,007	-	1,043	-	1,494
2034	43,101	4,142	4,142	-	994	-	1,455
2035	42,466	4,272	4,272	-	944	-	1,414
2036	41,626	4,367	4,367	-	890	-	1,361
2037	40,609	4,465	4,465	-	839	-	1,311
2038	39,977	4,519	4,519	-	782	-	1,250
2039	39,258	4,567	4,567	-	729	-	1,190

Section 4 – GASB 67 and 68 Information (continued)

Table 2 – Actuarial Present Values of Projected Benefit Payments (000's omitted)

			Benefit Payments		Present Value of Benefit Payments		
Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments	Funded Portion	Unfunded Portion	Funded Portion at 8.50%	Unfunded Portion at 2.71%	Using a Single Discount Rate of 6.16%
2040	38,451	4,612	4,612	-	678	-	1,132
2041	37,552	4,657	4,657	-	631	-	1,077
2042	36,556	4,695	4,695	-	586	-	1,022
2043	35,462	4,728	4,728	-	544	-	970
2044	34,267	4,756	4,756	-	505	-	919
2045	32,969	4,779	4,779	-	467	-	870
2046	31,565	4,796	4,796	-	432	-	822
2047	30,056	4,806	4,806	-	399	-	776
2048	28,435	4,809	4,809	-	368	-	732
2049	26,708	4,804	4,804	-	339	-	688
2050	24,873	4,791	4,791	-	312	-	647
2051	22,931	4,769	4,769	-	286	-	606
2052	20,884	4,738	4,738	-	262	-	568
2053	18,733	4,697	4,697	-	239	-	530
2054	16,482	4,645	4,645	-	218	-	494
2055	14,136	4,584	4,584	-	198	-	459
2056	11,697	4,513	4,513	-	180	-	426
2057	9,170	4,433	4,433	-	163	-	394
2058	6,559	4,344	4,344	-	147	-	364
2059	3,866	4,245	-	4,245	-	1,362	335
2060	1,103	4,137	-	4,137	-	1,293	307
2061	-	4,021	-	4,021	-	1,223	281
2062	-	3,896	-	3,896	-	1,154	257

Table 2 – Actuarial Present Values of Projected Benefit Payments (000's omitted)

			Benefit Payments		Present Value of Benefit Payments		
Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments	Funded Portion	Unfunded Portion	Funded Portion at 8.50%	Unfunded Portion at 2.71%	Using a Single Discount Rate of 6.16%
2063	-	3,763	-	3,763	-	1,085	234
2064	-	3,624	-	3,624	-	1,018	212
2065	-	3,480	-	3,480	-	951	192
2066	-	3,331	-	3,331	-	887	173
2067	-	3,177	-	3,177	-	823	155
2068	-	3,019	-	3,019	-	762	139
2069	-	2,858	-	2,858	-	702	124
2070	-	2,694	-	2,694	-	644	110
2071	-	2,527	-	2,527	-	589	97
2072	-	2,359	-	2,359	-	535	85
2073	-	2,191	-	2,191	-	484	75
2074	-	2,024	-	2,024	-	435	65

Section 5 – Plan Participant Data

A. Reconciliation of Participant Data

	Actives	Terminated Vesteds	Retirees and Beneficiaries	Disabled Participants	Total
Participants as of July 1, 2015	44	3	30	5	82
New entrants	0	0	0	0	0
Rehires	0	0	0	0	0
Vested terminations	0	0	0	0	0
Non-vested terminations	0	0	0	0	0
Lump sum distributions	0	0	0	0	0
Retirements	(1)	0	1	0	0
Deaths	0	0	0	0	0
New beneficiaries	0	0	0	0	0
New alternate payees per QDRO	0	0	0	0	0
Benefits expired	0	0	0	0	0
Data corrections	0	0	0	0	0
Participants as of July 1, 2016	43	3	31	5	82

B. Inactive Participant Statistics – Average Annual Benefits

	July 1, 2015	July 1, 2016
Terminated Vested Participants[1]	$ 11,295	$ 11,295
Retirees	43,154	44,894
Beneficiaries	12,374	12,585
Disabled Participants	39,430	40,613

[1] Stated average for 2015 is for one participant entitled to annuity benefits in the future and for 2016 is for one participant entitled to annuity benefits in the future. There are two others in 2015 and in 2016 who are entitled only to a refund of employee contributions.

Section 6 – Actuarial Assumptions and Methods

Actuarial Assumptions

Interest rate for funding

8.50% per annum.

Interest rate for accounting

6.16% per year, compounded annually. Projected benefit payments that are expected to be paid from available plan assets are discounted at the valuation interest rate of 8.50%. After the point where plan assets are not available to pay benefits, projected benefit payments are discounted at the municipal bond rate. The valuation rate for accounting purposes is the effective rate resulting from this process.

Municipal bond rate

2.71%. This rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index.

Salary increases

4.00% per annum.

Mortality

For male annuitants, 115% of RP-2000 Combined Healthy for Males with White Collar adjustments, projected generationally with Scale AA from 2000, and for female annuitants, 95% of RP-2000 Combined Healthy for Females with White Collar adjustments, projected generationally with Scale AA from 2000.

Withdrawal

50% of Sarason Table T-1

Disability

200% of United Auto Workers 1955 Table. All disablements assumed to be duty-related.

Loading for expenses

Prior year's administrative expenses increased by 4%, rounded to the nearest thousand.

Retirement age

25% assumed to retire upon the attainment of 20 years of service and the remainder at 25 years.

Asset valuation method

For purposes of determining the recommended contribution level, the actuarial value of assets consists of the book value of the IPG assets and the market value of all other assets.

For accounting purposes, the fair value of assets is used.

Form of payment

Joint and 67.5% survivor annuity.

Married participants

90% of males and 75% of females are married, with males four years older than their female spouse.

Section 6 – Actuarial Assumptions and Methods

Changes from prior valuation

The interest rate for accounting was changed from 6.88% to 6.16%.

Actuarial Cost Method

For purposes of determining the recommended contribution level, the Frozen Initial Liability is used.

The Entry Age Normal method is required to be used for GASB accounting results.

Normal Cost

At each valuation date the excess of the Actuarial Present Value of Projected Benefits of eligible employees over the sum of the Actuarial Value of Assets plus the Unfunded Actuarial Accrued Liability, is allocated on a level basis over the compensation of active employees between the valuation date and the assumed date they leave active employment. This allocation by year is performed for the group as a whole, not as a sum of individual allocations. The Initial Actuarial Accrued Liability is determined using the Entry Age Normal Actuarial Cost Method. The portion of the Actuarial Present Value allocated to a valuation year is called the Normal Cost.

Unfunded Actuarial Accrued Liability

The Unfunded Actuarial Accrued Liability at plan inception, and each subsequent increase or decrease in the Unfunded Actuarial Accrued Liability, is determined using the Entry Age Normal Actuarial Cost Method.

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated as a level percent of compensation between date of hire and assumed date they cease active employment. The portion of this Actuarial Present Value not provided for at the valuation date by the Actuarial Present Value of Future Entry Age Normal Cost is called the Accrued Liability.

Section 7 – Summary of Plan Provisions

Eligibility

Plan participation commences on the first day of the month following the date the employee is hired. Employees hired after January 1, 2011 will not be eligible to participate in this plan.

Final Average Salary

Average annual salary for the three consecutive years producing the highest such average in the last ten years preceding Normal Retirement Date. Includes base pay only.

Normal Retirement

Eligibility

The first day of the month coincident with or next following the earlier of the attainment of age 65 or completion of 20 years of service.

Benefit

(a) plus (b), but not more than (c), where:

- (a) 2.5% of Final Average Salary multiplied by service up to 20 years
- (b) 2.0% of Final Average Salary multiplied by service in excess of 20 years
- (c) 75% of Final Average Salary

Late Retirement

Eligibility

Continued employment beyond normal retirement date.

Benefit

Accrued benefit at late retirement date.

Disability Benefit

Eligibility

Completion of seven years of service, if the total and permanent disability is not due to occupational causes. If the participant becomes totally and permanently disabled due to occupational causes, no age or service requirement applies.

Benefit

If disability is not due to occupational causes, the benefit is 50% of Final Average Salary. Benefit is adjusted to the accrued benefit once the Normal Retirement Date is reached.

If disability is due to occupational causes, the benefit is 66-2/3% of Final Average Salary. Benefit is not adjusted at Normal Retirement Date.

Pre-Retirement Spouse's Benefit

Eligibility

Death occurs while employee is still in the service of the employer.

Benefit

40% of Final Average Salary to the surviving spouse plus 10% of Final Average Salary for any dependent children under age 18, with a maximum of 50% of Final Average Salary. If no spouse, 15% of Final Average Salary for each dependent child under age 18 with maximum of 45% of Final Average Salary.

Lump Sum Death Benefit

Active or disabled employees: greater of

(a) accumulated contributions or

(b) 400 times years of service (minimum 2,000, maximum 8,000)

Retired employees who were active or disabled immediately prior to retirement: greater of

(a) excess of accumulated contributions over benefits received, or

(b) 400 times years of service (minimum 2,000, maximum 8,000), reduced 25% per year retired, but not less than 2,000.

Terminated vested employees (Pre- and post-retirement): accumulated contributions in excess of benefits received.

Vesting

100% vested upon the completion of ten years of service.

Employee Contributions

10% of annual base earnings, not including overtime pay.

Employee contributions for all participants are credited with interest at the rate of 5.50% per year.

Normal Form of Payment

Contingent annuitant form, which provides continuation to surviving spouses at 67½% of the original annuity amount. This benefit is fully subsidized, so there is no reduction to the initial amount to reflect this coverage. Applies to Disability as well as Retirement benefits.

Cost-of-Living Adjustments

Employees retiring or becoming disabled after July 1, 1988 shall receive an increase of 3% in their benefit on each anniversary date of retirement. Pre-retirement survivor beneficiaries are eligible for these increases also.

Section 8 – Deferred Outflows/Inflows

Schedule of Difference Between Actual and Expected Experience	Outflows	Inflows	Total
Amount Recognized			
2015	0	(17,780)	(17,780)
2016	0	(64,386)	(64,386)
2017	0	(64,386)	(64,386)
2018	0	(64,386)	(64,386)
2019	0	(64,386)	(64,386)
2020	0	(53,681)	(53,681)
2021	0	(303)	(303)
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0
Deferred Balance			
2015	0	(78,195)	(78,195)
2016	0	(247,142)	(247,142)
2017	0	(182,756)	(182,756)
2018	0	(118,370)	(118,370)
2019	0	(53,984)	(53,984)
2020	0	(303)	(303)
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0

Section 8 – Deferred Outflows/Inflows

Schedule of Changes in Assumptions	Outflows	Inflows	Total
Amount Recognized			
2015	0	(1,000,084)	(1,000,084)
2016	796,172	(1,000,084)	(203,912)
2017	796,172	(1,000,084)	(203,912)
2018	796,172	(1,000,084)	(203,912)
2019	796,172	(1,000,084)	(203,912)
2020	796,172	(397,838)	398,334
2021	5,147	0	5,147
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0
Deferred Balance			
2015	0	(4,398,174)	(4,398,174)
2016	3,189,835	(3,398,090)	(208,255)
2017	2,393,663	(2,398,006)	(4,343)
2018	1,597,491	(1,397,922)	199,569
2019	801,319	(397,838)	403,481
2020	5,147	0	5,147
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0

Section 8 – Deferred Outflows/Inflows

Schedule of Difference Between Projected and Actual Earnings	Outflows	Inflows	Total
Amount Recognized			
2015	71,721	0	71,721
2016	318,166	0	318,166
2017	318,166	0	318,166
2018	318,166	0	318,166
2019	318,165	0	318,165
2020	246,445	0	246,445
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0
Deferred Balance			
2015	286,883	0	286,883
2016	1,200,942	0	1,200,942
2017	882,776	0	882,776
2018	564,610	0	564,610
2019	246,445	0	246,445
2020	0	0	0
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
2026	0	0	0
2027	0	0	0