

**SPRING LAKE PARK FIREFIGHTERS' RELIEF ASSOCIATION
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

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July 19, 2017

Mr. Doug Anderson
Executive Director
Public Employees Retirement Association of MN
60 Empire Drive, Suite 200
Saint Paul, Minnesota 55103

Dear Doug:

The results of the January 1, 2017 actuarial valuation of the Spring Lake Park Firefighters' Relief Association are presented in this report. This report was prepared at the request of the Public Employees Retirement Association (PERA) and is intended for use by PERA and those designated or approved by PERA. This report may be provided to parties other than the Plan only in its entirety. GRS is not responsible for the unauthorized use of this report.

The purpose of the valuation is to measure the Plan's funding progress and to determine the minimum annual contribution requirements of the Plan for the plan years commencing January 1, 2017 and January 1, 2018.

The valuation was based upon information furnished by PERA concerning benefits, financial transactions, plan provisions, and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by PERA.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the Legislative Commission on Pensions and Retirement (LCPR), and the Trustees. These parties are responsible for selecting the Plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the Valuation Procedures section of this report. PERA is solely responsible for communicating to GRS any changes required thereto.

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

Mr. Doug Anderson
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This report should not be relied on for any purpose other than the purpose described herein. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

Bonita J. Wurst and Brian B. Murphy are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. In addition, Mr. Murphy meets the requirements of "approved actuary" under Minnesota Statutes Section 356.215, Subdivision 1, Paragraph (c).

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge and belief the information contained in this report is accurate and fairly presents the actuarial position of the City of Spring Lake Park Firefighters' Relief Association Pension Plan as of the valuation date and was performed in accordance with the requirements of Minnesota Statutes Section 356.215, and the requirements of the Standards for Actuarial Work established by the LCPR. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

We are available to answer any questions or provide further details.

Respectfully submitted,



Bonita J. Wurst, ASA, EA, FCA, MAAA
Senior Consultant



Brian B. Murphy, FSA, EA, FCA, MAAA
Senior Consultant

cc: Dave Andrews – PERA
Sheri Christensen – GRS

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if there are no changes in benefits or contributions and all actuarial assumptions are met (including the assumption of the plan earning 6.0% on the actuarial value of assets), it is expected that:

- (1) The funding ratio of the plan will remain over 100%.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words, of transferring the obligations to an unrelated third party in an arm's length market value type transaction.
- (2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

Limitations of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

SECTION A
VALUATION RESULTS

SUMMARY OF ACTUARIAL VALUATION RESULTS

		<u>1/1/2016 Results</u>	<u>1/1/2017 Results</u>
Employee	Number of Active Firefighters	63	58
Data	Number of Retirees and Survivors	79	80
	Number of Terminated Deferred Firefighters	7	8
	TOTAL	<u>149</u>	<u>146</u>
Plan	Annual Normal Cost	\$ 173,473	\$ 159,881
Liabilities			
	Actuarial Accrued Liability		
	Active Firefighters	\$ 2,054,165	\$ 2,037,964
	Retirees and Survivors	7,150,247	7,243,306
	Terminated Deferred	539,665	524,474
	TOTAL	<u>\$ 9,744,077</u>	<u>\$ 9,805,744</u>
	Assets (Market Value)	\$ 13,391,402	\$ 14,514,552
	Unfunded (Overfunded) Actuarial Accrued Liability	\$ (3,647,325)	\$ (4,708,808)
	Funded Position of Plan's Actuarial Accrued Liability*	137.4 %	148.0 %

* Equals the ratio of assets to the total actuarial accrued liability.

SUMMARY OF ACTUARIAL VALUATION RESULTS (CONCLUDED)

In accordance with Minnesota State Statutes (Chapters 69, 353G, 356, and 424A), the contribution level for any given year is a contribution of the Normal Cost for the year, a provision for anticipated administration expenses, and an amount to reduce the Unfunded Actuarial Accrued Liability. The minimum annual contribution requirement is shown below.

	<u>Plan Year 2016</u>	<u>Plan Year 2017</u>
A) Net Annual Normal Cost	\$ 173,473	\$ 159,881
B) Annual Amortization Payments for Funding Unfunded Actuarial Accrued Liability *	(364,733)	(470,881)
C) Expense allowance including refund of member dues: (Prior Year actual expenses x 1.035)	<u>29,396</u>	<u>67,885</u> **
D) Total Minimum Annual Contribution Requirement: (D = A + B + C, not less than \$0)	<u>\$ 0</u>	<u>\$ 0</u>

* Amounts shown are equal to one-tenth of the assets in excess of liabilities, based on Minnesota Statute 424A. Minnesota Statute 353G is silent on the amortization calculation when a plan has surplus assets. See the Comments and Analysis section of this report for additional detail.

** Actual 2015 expenses were not available at the time the 2016 report was issued; expenses shown in this exhibit were estimated based on calendar year 2014 expenses increased by 1.035.

FINANCIAL AND ACTUARIAL STATUS ON JANUARY 1, 2017

***Market Value of Assets as
of January 1, 2016***

	\$ 13,391,402
Contributions, Municipality	294,739
Contributions, Other	427,661
Asset transfer	139,040
Benefit payments	(603,070)
Administrative Expenses	(65,589)
Investment return	928,340
Other	2,029
Total	<u>\$ 1,123,150</u>

***Market Value of Assets as
of December 31, 2016***

\$ 14,514,552

***Normal Cost as of
January 1, 2017***

Service Retirement	\$ 150,675
Non-Service Related Disability	2,166
Service Related Disability	1,277
Withdrawal	3,576
Survivor	2,187
Total	<u>\$ 159,881</u>

***Actuarial Liability as of
January 1, 2017***

Active Participant Liability	
Service Retirement	\$ 1,979,151
Non-Service Related Disability	20,145
Service Related Disability	7,818
Withdrawal	19,614
Survivor	11,236
Total Active Liability	<u>\$ 2,037,964</u>

Inactive Liability

Retirees and Survivors	\$ 7,243,306
Terminated Deferred	524,474
Total Inactive Liability	<u>\$ 7,767,780</u>

Total Liability \$ 9,805,744

COMMENTS AND ANALYSIS

The Spring Lake Park Firefighters' Relief Association joined the Statewide Volunteer Firefighter Retirement Plan (SVFRP) effective January of 2016. The SVFRP is administered by the Public Employees Retirement Association (PERA). Per Minnesota Statute 353G.08, an actuarial valuation must be completed by PERA's actuary and should be based on an interest rate of 6.0%. These valuation results are analyzed and discussed in the following paragraphs.

This plan remains well funded. The funded ratio, defined as the ratio of assets to actuarial liabilities, increased from 137.4% as of January 1, 2016, to 148.0% as of January 1, 2017. The primary reasons for the increase in the funded ratio are the contribution of \$722,000 and the greater than expected return on assets. Plan assets earned 8.0% and were expected to earn 6.0%.

The minimum annual contribution is equal to normal cost for the year, a provision for anticipated administrative expenses, and an amount to recognize the unfunded actuarial accrued liability. Minnesota Statute 353G.08 Subd. 1a. specifies amortization periods for unfunded liability attributable to benefit increases, assumption or method changes, or investment losses. As discussed with PERA, statutes do not address methodology for plans with surplus assets, and do not specify how to set up initial balances when a plan transitions to the SVFRP. Additional clarification is requested.

As directed by PERA, in this valuation, we show an amortization amount equal to one-tenth of surplus assets. The resulting minimum annual contribution is \$0. The basis for this interpretation is Minnesota Statutes 424A, which applies to relief associations before joining the SVFRP. Other interpretations are reasonable and possible. Due to the well-funded nature of this plan, based on the interest assumption of 6%, all other amortization periods would also result in a minimum contribution of \$0 for Plan Year 2017.

We would typically recommend the minimum contribution be at least equal to the normal cost, even for plans that are well-funded. While the annual minimum contribution for this plan has equaled \$0 for the past several years, contributions to this plan have continued to be made, from both the state and municipal sponsors.

Our valuation was based on the plan provisions as described in the bylaws provided by PERA and summarized in Section B.

COMMENTS AND ANALYSIS (CONCLUDED)

The Actuarial Standards of Practice (ASOP) No. 35 Disclosure Section 4.1.1 states *“The disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision made for future mortality improvement. If the actuary assumes zero mortality improvement after the measurement date, the actuary should state that no provision was made for future mortality improvement.”* **In our judgment, there is no provision for future mortality improvement in the current prescribed mortality assumption. We recommend that the mortality assumption be revised to include margin for future mortality improvements.**

There is not enough plan-specific data to make a reasonable analysis of the mortality assumption. For most plans, standard mortality tables represent the best estimate of future events. Our recommendation is that the mortality assumption for this plan mirror the assumptions used for the Minnesota Public Employees Police & Fire Retirement Fund (PEPFF). Our understanding is that PERA would first take action on our recommendation, and then submit the requested change to the Legislative Commission on Pensions and Retirement (LCPR). If the LCPR doesn't take action within one year, the requested assumption change is automatically approved. Evaluating the impact of a mortality assumption change on the valuation results is outside the scope of our current assignment.

SECTION B

BENEFIT PROVISIONS AND VALUATION DATA

BRIEF SUMMARY OF PLAN PROVISIONS (JANUARY 1, 2017)

<i>Plan</i>	Spring Lake Park Firefighters' Relief Association
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<i>Effective Date</i>	Last Amended Effective: August 27, 2015
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Normal Retirement Benefit	Eligible upon attainment of age 50 and completion of 20 years of service.
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Monthly life annuity benefit of \$38 per year of service. No maximum monthly benefit.

Vesting Schedule	Employees who have completed 10 years of service are 60% vested in their benefit. The vesting percentage increases by 4% for each additional completed year of service to a maximum of 100% with 20 years of service.
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Early Retirement Benefit	Eligible upon attainment of age 50 and completion of 10 years of service.
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Monthly life annuity benefit of \$38 per year of service, subject to the Vesting Schedule.

Deferred Vested Benefit	On termination, after completion of 10 years of service, payable at age 50.
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Monthly life annuity benefit of \$38 per year of service, subject to the Vesting Schedule.

Ordinary Disability Benefit	Short-term disability benefit of \$25 per day for 26 weeks.
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Long-term disability benefit of \$38 per year of service, subject to the Vesting Schedule. Payable at age 50.

Duty Disability Benefit	Short-term disability benefit of \$25 per day for 26 weeks.
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Long-term disability benefit of \$38 per year of service. Payable at age 50.

BRIEF SUMMARY OF PLAN PROVISIONS
(JANUARY 1, 2017) (CONCLUDED)

Death Benefit

Upon the death of an active participant, 100% of the member's accrued, unreduced benefit, is payable immediately to the surviving spouse.

Upon the death of a deferred or retired member, 75% of the member's accrued benefit is payable to the surviving spouse. The benefit is payable immediately to the surviving spouse of a retired member and is payable at the date the member would have been 50 to the surviving spouse of a deferred member.

ACTIVE MEMBERS AS OF JANUARY 1, 2017
BY AGE AND YEARS OF SERVICE

Age	<u>Years of Service to Valuation Date</u>						Over 30	Totals
	0-4	5-9	10-14	15-19	20-24	25-29		
Under 20								
20-24	2							2
25-29	5							5
30-34	4	4						8
35-39	10	5	3	1				19
40-44	3	1	2	1	1			8
45-49		3	6	2		1		12
50-54				1				1
55-59		1						1
Over 60		1		1				2
Total	24	15	11	6	1	1	0	58

Average Age 38.9

Average Service 7.4

MEMBER DATA AS OF JANUARY 1, 2017

Inactive Members

	<u>Number</u>	<u>Average Monthly Benefit</u>	<u>Average Age</u>
Retirees*	71	\$655	64.1
Widows	9	497	74.1
Terminated Deferred	8	456	46.6
Total	88	\$620	63.5

* Includes 4 Alternate Payees.

SECTION C
VALUATION PROCEDURES

ACTUARIAL METHOD

Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using the *individual entry-age actuarial cost method* having the following characteristics:

- the annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement; and
- the annual normal costs for each individual are level dollar amounts spread evenly over the participant's career.

The contribution and benefit values of the Plan are calculated by applying actuarial assumptions to the benefit provisions and the demographic information furnished, using the actuarial cost method described above.

The principal areas of financial risk which require assumptions about future experiences are:

- long-term rates of investment return to be generated by the assets of the Plan
- rates of mortality among members, retirees and beneficiaries
- rates of withdrawal of active members
- rates of disability among members
- the age patterns of actual retirement

Actual experience of the Plan will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations).

VALUATION ASSUMPTIONS

The assumptions in this valuation are prescribed by Minnesota Statute 353G.05. The statutes require the assumed rate of investment return to be 6%. The other assumptions prescribed are based on the valuation report as of January 1, 2015, prepared by a former actuary. We are unable to judge the reasonableness of these assumptions without performing a substantial amount of additional work beyond the scope of the assignment.

The assumed rate of investment return used was 6.00%, net of expenses, annually.

The mortality table used to measure retirement mortality was the RP2000 Combined Healthy Annuitant Mortality Table projected to 2017 with scale AA. This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement.

Sample Attained Ages	Single Life Retirement Values			
	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$168.68	\$171.79	32.48	34.48
55	157.86	161.77	27.77	29.74
60	144.64	149.66	23.22	25.17
65	129.30	135.67	18.94	20.88
70	112.27	120.15	15.02	16.94
75	93.28	103.22	11.44	13.36
80	73.62	85.06	8.32	10.15

VALUATION ASSUMPTIONS (CONTINUED)

Rates of separation from active membership are represented by the following table (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members terminating employment.

Age	Employee Withdrawal Rate Per 1,000 Employees	
	Males	Females
20	60.0	60.0
25	48.0	48.0
30	36.0	36.0
35	24.0	24.0
40	12.0	12.0
45	0.0	0.0
50 and Over	0.0	0.0

Sample Rates of Disability were as follows:

Age	Employee Disablement Rate Per 1,000 Employees	
	Male	Female
20	0.8	0.8
25	0.8	0.8
30	0.8	0.8
35	1.4	1.4
40	2.0	2.0
45	3.5	3.5
50	4.9	4.9
55	8.9	8.9

25% of all disabilities assumed to be in the line of duty.

VALUATION ASSUMPTIONS (CONCLUDED)

<i>Rate of Retirement:</i>	Active firefighters assumed to retire at the later of age 50 and 10 years of service.
<i>Spouse Age:</i>	Spouse assumed to be same age as member for actives and inactives.
<i>Percentage Married:</i>	85% of all active and terminated members are assumed to be married. Actual marital status is used for retired members.
<i>Decrement Timing:</i>	All decrements are assumed to occur mid-year.
<i>Expenses:</i>	Prior year expenses increased by 3.5%.
<i>Commencement of Deferred Benefits:</i>	Members eligible for deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 50.