_______________________ moves the approval of a change to the actuarial assumption for mortality used in the actuarial valuations of the Spring Lake Park Firefighters' Relief Association, effective beginning with the valuation as of January 1, 2022, as requested by the executive director of the Public Employees Retirement Association (PERA), in the attached letter dated March 31, 2022, and as recommended by PERA's actuary, GRS Consulting, in the attached actuarial valuation report as of January 1, 2021. The executive director requests and GRS recommends that the mortality assumption be set to automatically change as necessary to remain the same as the mortality assumption set forth in the most recent actuarial valuation report for the Public Employees Police and Fire Retirement Plan.

LCPR Staff note:

The foregoing motion approves a change in an actuarial assumption pursuant to Minnesota Statutes, Section 356.215, subdivision 18:

> Subd. 18.**Establishment of actuarial assumptions.**
>
> (a) The actuarial assumptions used for the preparation of actuarial valuations under this section that are other than the interest rate may be changed only with the approval of the Legislative Commission on Pensions and Retirement or after a period of one year has elapsed since the date on which the proposed assumption change or changes were received by the Legislative Commission on Pensions and Retirement without commission action.
>
> (b) A change in the applicable actuarial assumptions may be proposed by the governing board of the applicable pension fund or relief association, by an actuary retained under section 356.214 or by the actuary retained by a local relief association governed by sections 424A.091 to 424A.096 or by Laws 2013, chapter 111, article 5, sections 31 to 42, if one is retained.

March 31, 2022

Susan Lenczewski, Executive Director
Legislative Commission on Pensions and Retirement
State Office Building, Room 55
100 Rev. Dr. Martin Luther King Jr. Boulevard
St. Paul, MN 55155

Re: Spring Lake Park Firefighters' Relief Association

Dear Ms. Lenczewski,

GRS Consulting serves as the consulting actuary for PERA. The January 1, 2021 actuarial valuation performed by GRS Consulting for the Spring Lake Park Firefighters' Relief Association included a recommendation that the mortality assumption used for future valuations mirror the assumption used by the PERA Police & Fire Plan (see page A-5 of the January 1, 2021 actuarial valuation report).

The PERA Police & Fire Plan mortality assumption was approved by the LCPR on February 23, 2021. That assumption was based on the results of an Experience Study that covered the four year period from July 1, 2015 through June 30, 2019. Specifically, the assumption changed the base mortality rate table to the PUB-2010 public safety mortality table with future improvement projected using scale MP-2019. The 2021 Police & Fire Plan actuarial valuation reflected an additional update to use scale MP-2020 in accordance with MN Statutes 356.215 Subdivision 9(b).

The impact of the mortality rate change increases plan liabilities by approximately 3% as demonstrated in the attached letter from GRS Consulting dated April 10, 2019. Due to the significantly overfunded status of the Spring Lake Park Firefighters' Relief Association Plan, the change is not expected to result in a Minimum Annual Contribution Requirement in 2022.

Minnesota Statutes Section 356.215, states that actuarial assumptions used for the preparation of actuarial valuations, other than the assumed rate of return, may only be changed with the approval of the LCPR or after a period of one year has elapsed since the date on which the proposed assumption change or changes were received by the LCPR without commission action.

PERA respectfully requests that the LCPR approve the recommendation of GRS Consulting for the Spring Lake Park Firefighters' Relief Association to have its mortality assumption mirror the assumption used for the PERA Police & Fire Plan.

Sincerely,

Doug Anderson

Doug Anderson, EA, ASA, MAAA
Executive Director

Cc: Amy Strenge, Policy Coordinator

Spring Lake Park Firefighters' Relief Association

Annual Actuarial Valuation Report as of January 1, 2021

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June 21, 2021

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

Dear Doug:

The results of the January 1, 2021 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) of Minnesota 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, 2021 according to the prescribed assumptions. Note that we have not attempted to quantify the impact of GASB Statements No. 67 and No. 68 in this report.

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.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in the Valuation Procedures of this report. This report includes risk metrics on pages A-6 and A-7, but does not include a more robust assessment of the risks of future experience differing materially from the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

The valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this Plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through December 31, 2020. 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.

277 Coon Rapids Boulevard | Suite 212 | Coon Rapids, Minnesota 55433-2629

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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

This report reflects COVID-19 pandemic experience through December 31, 2020. We continue to monitor the impact of the pandemic, especially with regard to demographic and investment experience, and the impact on the Plan.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

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

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

Brian B. Murphy

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

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 market value of assets), it is expected that:

- 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

		1/1/2019 Results	1/1/2021 Results
Employee Data	Number of Active Firefighters	56	49
	Number of Retirees and Survivors	83	88
	Number of Terminated Deferred Firefighters	8	8
	TOTAL	147	145
Plan Liabilities	Annual Normal Cost	$ 170,960	$ 164,368
	Actuarial Accrued Liability		
	Active Firefighters	$ 1,988,127	$ 2,297,764
	Retirees and Survivors	8,166,361	9,346,186
	Terminated Deferred	599,319	543,312
	TOTAL	$ 10,753,807	$ 12,187,262
	Assets (Market Value)	$ 16,032,178	$ 21,688,904
	Unfunded (Overfunded) Actuarial Accrued Liability	$ (5,278,371)	$ (9,501,642)
	Funded Position of Plan's Actuarial Accrued Liability*	149.1 %	178.0 %

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

.

Summary of Actuarial Valuation Results

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:

			Plan Year 2019	Plan Year 2021
Minimum Annual Contribution Requirements	A)	Net Annual Normal Cost	$ 170,960	$ 164,368
	B)	Annual Amortization Payments for Funding Unfunded Actuarial Accrued Liability *	(527,837)	(950,164)
	C)	Expense allowance including refund of member dues: (Prior Year actual expenses x 1.035)	5,502	6,022
	D)	Total Minimum Annual Contribution Requirement: (D = A + B + C, not less than $0)	$ 0	$ 0

* *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.*

Financial and Actuarial Status as of January 1, 2021

Market Value of Assets as of January 1, 2020		$ 18,693,255
	Contributions, Municipality	500,460
	Contributions, Other	506,337
	Asset transfer	381
	Benefit payments	(794,753)
	Administrative Expenses	(5,818)
	Investment return	2,789,042
	Other	0
	Total	$ 2,995,649
Market Value of Assets as of December 31, 2020		$ 21,688,904

Normal Cost as of January 1, 2021	Service Retirement	$ 153,761
	Non-Service Related Disability	2,440
	Service Related Disability	1,262
	Withdrawal	4,737
	Survivor	2,168
	Total	$ 164,368

Actuarial Liability as of January 1, 2021	Active Participant Liability	
	Service Retirement	$ 2,217,580
	Non-Service Related Disability	28,855
	Service Related Disability	10,718
	Withdrawal	26,617
	Survivor	13,994
	Total Active Liability	$ 2,297,764
	Inactive Liability	
	Retirees and Survivors	$ 9,346,186
	Terminated Deferred	543,312
	Total Inactive Liability	$ 9,889,498
	Total Liability	$ 12,187,262

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 149.1% as of January 1, 2019, to 178.0% as of January 1, 2021.

Benefits were increased for all members from $42 per month per year of service to $46 per month per year of service. This change increased the Actuarial Liability by approximately $1.1 million.

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 2021.

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.

The assumptions in this valuation are prescribed by Minnesota Statute 353G. Other than the statutory rate of investment return of 6%, the prescribed assumptions 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.

Comments and Analysis

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. As we have in the past, we continue to 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. As we have in the past, we continue to recommend that the mortality assumption for this plan mirror the assumptions used for the Minnesota Public Employees Police & Fire Retirement Fund. 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 does not 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. However, we studied the impact of using the Minnesota Public Employees Police & Fire Retirement Fund's mortality assumption on the Spring Lake Park Firefighters' Relief Association January 1, 2019 valuation and found the actuarial accrued liability increased 3%. Please see our letter dated April 10, 2019 for additional information.

Comments and Analysis

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
5. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

Comments and Analysis (Concluded)

The Minimum Contribution shown on page A-2 may be considered as a minimum contribution rate that complies with Minnesota Statutes and the requirements of the Standards for Actuarial Work published by the LCPR. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	2019	2021
Ratio of actives to retirees and beneficiaries	0.67	0.56
Ratio of net cash flow to market value of assets	1.0%	1.0%

Ratio of actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means benefits and expenses exceed contributions, and existing funds may be used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

SECTION B

BENEFIT PROVISIONS AND VALUATION DATA

Brief Summary of Plan Provisions
(January 1, 2021)

Plan	Spring Lake Park Firefighters' Relief Association	
Effective Date	Last Amended Effective:	December 11, 2019

Normal Retirement Benefit	Eligible upon attainment of age 50 and completion of 20 years of service. Monthly life annuity benefit of $46 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.
Early Retirement Benefit	Eligible upon attainment of age 50 and completion of 10 years of service. Monthly life annuity benefit of $46 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. Monthly life annuity benefit of $46 per year of service, subject to the Vesting Schedule.
Ordinary Disability Benefit	Short-term disability benefit of $25 per day for 26 weeks. Long-term disability benefit of $46 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. Long-term disability benefit of $46 per year of service. Payable at age 50.

Brief Summary of Plan Provisions
(January 1, 2021) (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.
Changes in Plan Provisions Since the Prior Valuation	The benefit was increased from $42 to $46 per year of service.

Active Members as of January 1, 2021
by Age and Years of Service

	Years of Service to Valuation Date							
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**Over 30**	**Totals**
Under 20								
20-24	4							**4**
25-29	1	2						**3**
30-34	4	6	1					**11**
35-39	2	2	3					**7**
40-44	1	7	4	3		1		**16**
45-49	1	2	1	2	1			**7**
50-54			1					**1**
55-59								
Over 60								
Total	**13**	**19**	**10**	**5**	**1**	**1**	**0**	**49**

Average Age	37.9 years
Average Service	8.2 years

Member Data as of January 1, 2021

Inactive Members

	Number	Average Monthly Benefit	Average Age
Retirees*	80	$763	64.3
Widows	8	656	80.5
Terminated Deferred	8	449	45.6
Total	96	$728	64.1

* *Includes 5 Alternate Payees.*

Member Reconciliation as of January 1, 2021

	Active	Deferred	Retirees and Survivors	Total
Members as of January 1, 2019	**56**	**8**	**83**	**147**
New Members	5			5
Terminated non-vested				0
Retirement	(5)	(4)	9	0
Terminated deferred	(4)	4		0
Terminated non-vested	(3)			(3)
Deaths			(6)	(6)
New beneficiary			2	2
Disabled				0
Data correction				0
Net change	(7)	0	5	(2)
Members as of January 1, 2021	**49**	**8**	**88**	**145**

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; and
- 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. 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 RP-2000 Combined Healthy Annuitant Mortality Table projected to the valuation date 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.

	Single Life Retirement Values			
Sample Attained Ages	Present Value of $1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
50	#NAME?	#NAME?	#NAME?	#NAME?
55	#NAME?	#NAME?	#NAME?	#NAME?
60	#NAME?	#NAME?	#NAME?	#NAME?
65	#NAME?	#NAME?	#NAME?	#NAME?
70	#NAME?	#NAME?	#NAME?	#NAME?
75	#NAME?	#NAME?	#NAME?	#NAME?
80	#NAME?	#NAME?	#NAME?	#NAME?

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.

	Employee Withdrawal Rate Per 1,000 Employees	
Age	**Male**	**Female**
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:

Employee Disablement Rate Per 1,000 Employees		
Age	**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)

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

GRS Retirement Consulting

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April 10, 2019

CONFIDENTIAL

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

Re: Impact of Benefit Level Change for the Spring Lake Park Firefighters' Relief Association

Dear Doug:

The Spring Lake Park Firefighters' Relief Association (SLPFRA) has requested analysis of the impact of a possible benefit level change. The current monthly life annuity benefit, per year of service, is $42. SLPFRA has requested information for a benefit level increase to $46. We assumed the short-term disability benefit would also increase by a proportionate amount.

This report is intended to describe the financial effect of the proposed provision change on the plan. We recently provided a valuation of the plan as of January 1, 2019. For informational purposes, the financial impact was determined as if the proposed change in benefit level was effective January 1, 2019.

As described in the valuation report, the current prescribed mortality assumption has no provision for future mortality improvement. **We recommend the mortality assumption be revised to the same as the PERA Police and Fire Plan.** For informational purposes, this report also shows the impact of using the PERA Police and Fire mortality assumption.

Results as of January 1, 2019, based on the current and proposed plan provisions, are shown below. We assumed the benefit increase is applied to all pensioners and future pensioners.

		January 1, 2019			
	Mortality Basis:	**Current**	**Updated**	**Current**	**Updated**
	Benefit Rate:	**$42**	**$42**	**$46**	**$46**
Employee Data	Number of Active Firefighters	56	56	56	56
	Number of Retirees and Survivors	83	83	83	83
	Number of Terminated Deferred Firefighters	8	8	8	8
	TOTAL	147	147	147	147
Plan Liabilities	Annual Normal Cost	$ 170,960	$ 174,592	$ 187,242	$ 191,220
	Actuarial Accrued Liability				
	Active Firefighters	$ 1,988,127	$ 2,024,152	$ 2,177,472	$ 2,216,928
	Retirees and Survivors	8,166,361	8,460,437	8,944,110	9,266,192
	Terminated Deferred	599,319	607,452	656,397	665,305
	TOTAL	$ 10,753,807	$ 11,092,041	$ 11,777,979	$ 12,148,425
	Assets (Market Value)	$ 16,032,178	$ 16,032,178	$ 16,032,178	$ 16,032,178
	Unfunded (Overfunded) Actuarial Accrued Liability	$ (5,278,371)	$ (4,940,137)	$ (4,254,199)	$ (3,883,753)
	Funded Position of Plan's Actuarial Accrued Liability*	149.1 %	144.5 %	136.1 %	132.0 %

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

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 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 Statewide Volunteer Firefighter Retirement Plan (SVFRP).

As directed by PERA, we show an amortization amount equal to one-tenth of surplus assets. The resulting minimum annual contribution is $0 for all scenarios. 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%, other amortization approaches would also result in a minimum contribution of $0 for Plan Year 2019 for the scenarios presented in this report. The minimum annual contribution requirement is shown below.

			January 1, 2019			
		Mortality Basis: Benefit Rate:	**Current** **$42**	**Updated** **$42**	**Current** **$46**	**Updated** **$46**
Minimum Annual Contribution Requirements	A)	Net Annual Normal Cost	$ 170,960	$ 174,592	$ 187,242	$ 191,220
	B)	Annual Amortization Payments for Funding Unfunded Actuarial Accrued Liability *	(527,837)	(494,014)	(425,420)	(388,375)
	C)	Expense allowance including refund of member dues: (Prior Year actual expenses x 1.035)	5,502	5,502	5,502	5,502
	D)	Total Minimum Annual Contribution Requirement: (D = A + B + C, not less than $0)	$ 0	$ 0	$ 0	$ 0

* *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 additional detail and commentary below.*

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.

The plan is overfunded, so this benefit change appears "free", at least for the near term. Eventually, contributions will resume at a higher level than otherwise. Ultimately, the asset pool will be greater than if the benefit change had not been made. A higher asset pool means added investment risk.

Unless noted otherwise, actuarial assumptions, methods, participant data, and plan provisions were consistent with those used in the regular actuarial valuation. In particular, the interest rate assumption is 6%, the mortality table is the RP-2000 Combined Healthy Annuitant Mortality Table projected to 2019 with Scale AA, and the cost method is individual entry-age. Please see the Spring Lake Park Firefighters' Relief Association Actuarial Valuation as of January 1, 2019 for a detailed description of the actuarial assumptions, methods and plan provisions that are not described in this report.

The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon plan provisions that are outlined in the January 1, 2019 valuation report. If you have reason to believe the assumptions used are unreasonable, the plan provisions are incorrectly described, important plan provisions relevant to this proposal are not described, or conditions have changed since the calculations were made, you should contact the authors of this report prior to relying on information in this report.

If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the authors of the report prior to making such decision.

No statement in this report is intended to be interpreted as a recommendation in favor of the changes, or in opposition to them.

The probabilities of retirement were not adjusted in connection with this proposal. If members retire differently than our assumptions, as a result of this benefit change, then the cost of the benefit change will be different.

The reader of this report should keep in mind that actuarial calculations are mathematical estimates based on current data and assumptions about future events (which may or may not materialize). Please note that actuarial calculations can and do vary from one valuation year to the next, sometimes significantly if the group valued is very small (less than 30 lives). As a result, the cost impact of a benefit change may fluctuate over time, as the demographics of the group changes.

A review of these proposals for compliance with federal, state, or local law or regulation was out of scope and not performed.

We have provided this analysis in the same format as that used when plan or assumption changes are considered by the Trustees. For any legislative proposals, it may be necessary to follow up with a more in-depth analysis to comply with the Standards for Actuarial Work. We will provide the additional information upon request.

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 the January 1, 2019 valuation report. PERA is solely responsible for communicating to GRS any changes required thereto.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in the January 1, 2019 valuation report. This valuation report includes risk metrics, but does not include a more robust assessment of the risks of future experience differing materially from the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This report assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

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.

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 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,

Gabriel, Roeder, Smith & Company

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