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January 29, 2021

CONFIDENTIAL

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

Re: Projection of Contributions and Funding Status – Local Correctional Plan

Dear Doug:

Attached are 30-year projections of estimated funded status, required contributions, and statutory contributions under three asset return scenarios for the Local Government Correctional Service Retirement Plan. These projections, including the underlying investment return assumptions, are required by the Minnesota Standards for Actuarial Work. Unless noted otherwise, the estimates are based on participant data, assets, and plan provisions as outlined in the Local Government Correctional Service Retirement Plan actuarial funding valuation as of July 1, 2020.

Basis for Projections

For all enclosed projections, liabilities are determined using the statutory investment return assumption of 7.5%. As required by the Minnesota Standards for Actuarial Work, the projections reflect three asset return scenarios (7.5%, 6.0% and 9.0%). Note that we believe the 9.0% rate of return assumption is outside of the range of reasonable expected returns for this plan.

The estimates are based on the market value of assets with no smoothing of investment gains or losses. Payroll is assumed to increase approximately 3.25% per year over the long-term, consistent with the valuation assumption for total payroll growth.

The projection is an open group projection; meaning, active members projected to retire or otherwise terminate in the future are replaced with new active members so that the total active membership of the fund remains at 3,855 members. The profile of these new members is the same as new members hired between July 1, 2014 and June 30, 2019:

- Average age at hire is 30.7
- Average salary at hire is $47,600
- Approximately 35% female, 65% males

If actuarial accrued liability exceeds assets, the unfunded actuarial accrued liability is amortized through June 30, 2048 per Minnesota Statute 356.215, Subdivision 11. Per Minnesota Statute 356.215, Subdivision 11 (l), a negative unfunded actuarial accrued liability (i.e., when assets exceed liability) is amortized over a rolling 30-year period.

Postretirement Benefit Increases

A very significant assumption affecting the projected estimates is the expectation of annual increases in the benefits being paid to retirees and beneficiaries. Actual benefit increases equal the Social Security Cost-of-Living Adjustment, not less than 1.00% and not more than 2.50%. If the funded status declines to 85% for two consecutive years or to 80% for one year (on a market value of assets basis), the maximum is lowered to 1.50%. For the 7.5% and 9.0% investment return scenarios, the projections assume a constant postretirement benefit increase of 2.00%. More information about this assumption can be found in the valuation report as of July 1, 2020.

For the 6.0% investment return scenario, if all assumptions are met, the funding status of the plan deteriorates to the point that the 1.5% maximum postretirement benefit increase is estimated to be applied beginning January 1, 2034. In this projection, the accrued liability and normal cost are based on a 2.0% postretirement benefit increase assumption through December 31, 2033 and a 1.5% postretirement benefit increase assumption beginning January 1, 2034 and later.

If actual benefit increases are greater than assumed, liabilities and required contributions will be greater than the amounts shown in the enclosed projections.

Comments

The reader should keep the following in mind when reviewing these results:

- Statutory contributions are defined in statutes as a fixed percentage of payroll plus any supplemental contributions and represent the amount that is actually contributed to the plan. Required contributions are defined in statutes and the LCPR Standard for Actuarial Work and represent the amount needed to fully fund the plan by June 30, 2048 (normal cost, expenses and a payment to amortize the unfunded liability).

- Investment experience that has occurred since the measurement date is not reflected in this report.

- The enclosed projections are based on assumptions as outlined in the Local Government Correctional Service Retirement Plan actuarial funding valuation as of July 1, 2020. Please see that report for comments regarding the 7.5% statutory investment return assumption, and sensitivity test results based on alternate assumptions.

- Note that plan changes may result in behavior changes that are not anticipated in the current assumptions.

- In the 7.5% and 9.0 % investment return scenarios, surplus assets reduce the projected required contributions to amounts less than normal cost, and eventually to zero. We typically recommend the contribution be at least equal to the normal cost of the plan and suggest that plans with considerable surplus assets investigate the pros and cons of reducing the risk of the plan's investment allocation to preserve surplus assets.

- A 2019 analysis of long-term rate of investment return and inflation assumptions concluded that the probability of exceeding the current 7.5% assumption over 20 years is less than 50%. The statutory requirement for projections that are 1.5% above and 1.5% below the assumed rate may give the reader the impression that the 7.5% projection is an accurate (middle of the road) representation of the expected future results. Based on our modeling, the 7.5% scenario is optimistic and not representative of the expected (median) result. We caution against adjusting contribution rates without full consideration of the median results.

- Note that as funding ratios decline, as they are expected to in one of the investment return scenarios shown in this letter, it will be increasingly difficult for the plan to attain the assumed scenario investment return. Each year, a larger proportion of assets is paid out in benefits, and less capital is available to invest.

Disclosures

The purpose of this report is to estimate the Fund's funding progress and required contribution rates over a 30-year period according to prescribed assumptions and the Minnesota Standards for Actuarial Work. To the best of our knowledge and belief, the calculations were completed in accordance with the requirements of Minnesota Statutes, Section 356.215, and the requirements of the Standards for Actuarial Work established by the Legislative Commission on Pensions and Retirement.

This report should not be relied upon 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. GRS is not responsible for the consequences of any unauthorized use.

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 Actuarial Basis section of the valuation report, except as noted. PERA is solely responsible for communicating to GRS any changes required thereto.

In a 2019 analysis of long-term rate of investment return and inflation assumptions, GRS determined that an investment return assumption of 7.5% was reasonable. Please see our experience study report dated June 27, 2019 for additional information. This report also concluded that the probability of exceeding the current 7.50% assumption over 10 years is 44%. If capital market assumptions decline from present levels, the 7.50% return assumption might not comply with the actuarial standards for the July 1, 2021 valuation. For informational purposes, results based on a 6.5% discount rate are shown on page 5 of the July 1, 2020 valuation report.

The contribution rates shown in this report have been determined using the actuarial assumptions and methods disclosed in the Actuarial Basis section of the July 1, 2020 valuation report. The valuation report includes risk metrics on page 9, but does not include a robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

The projections assume 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 valuation was based upon information furnished by the Public Employees Retirement Association of Minnesota (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.

This report was prepared using our proprietary valuation model and related software which, in our professional judgement, 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 does not fully reflect the recent and still developing impact of COVID-19, which is likely to influence demographic and investment experience, at least in the short term. We will continue to monitor these developments and their impact on the plan.

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.

Professional Qualifications

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 Local Government Correctional Service Retirement 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.

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

Sincerely,

Bonita J. Wurst

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

Brian B. Murphy

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

BJW/BBM:ah
Enclosure

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 7.5% on the market value of assets), it is expected that:

(1) The normal cost of the plan is expected to remain approximately level as a percent of pay,
(2) The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 28 years, and
(3) The unfunded liability will grow initially as a dollar amount before beginning to decline.

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 market 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).
(3) The measurement would produce a different result if the actuarial value of assets were used instead of the market value of assets.

Limitations of Project Scope

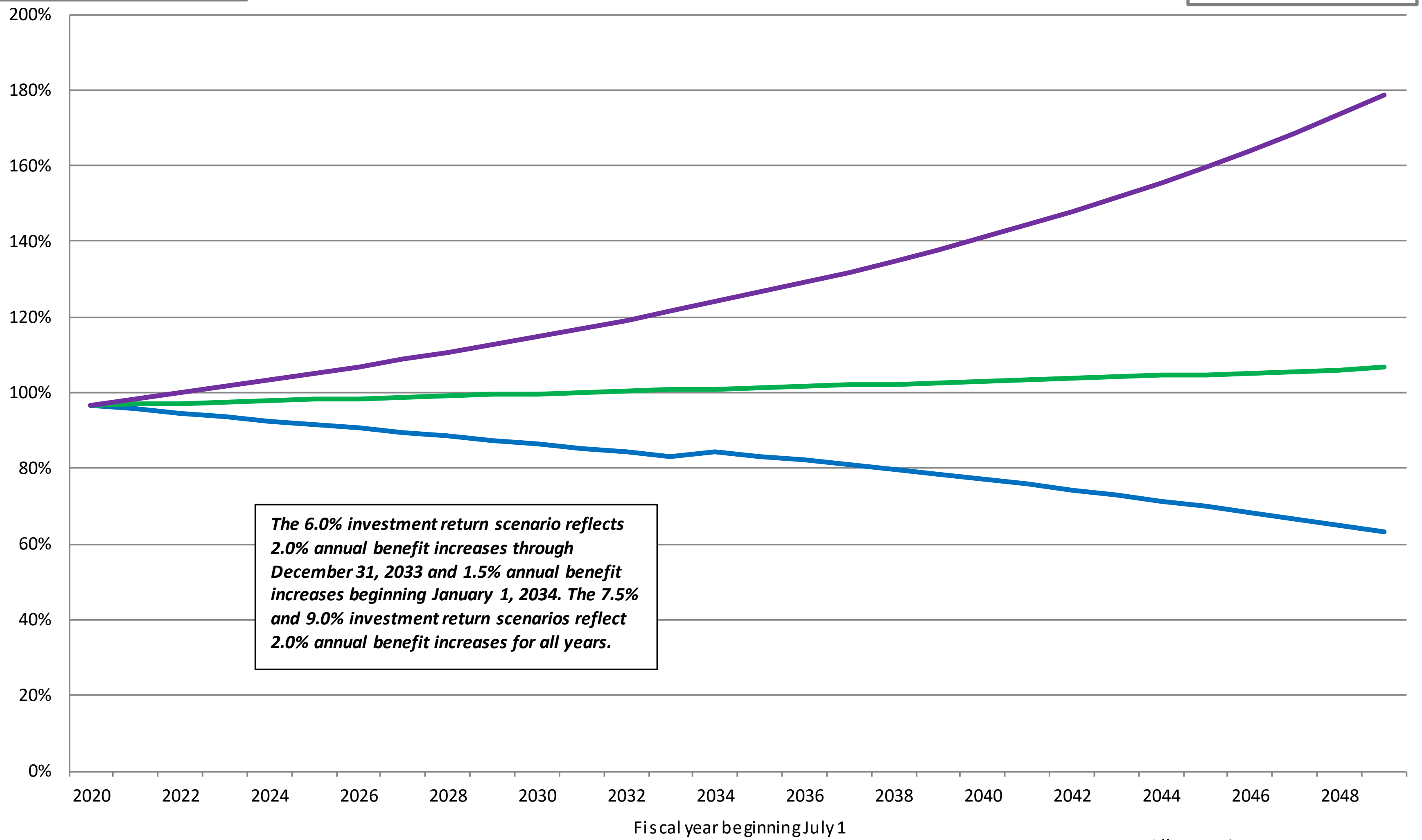
Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the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

This exhibit should only be viewed in conjunction with GRS' January 29, 2021 letter to PERA.

Local Government Correctional Service Retirement Plan

Estimated Funded Ratio

In all scenarios, the interest rate used to discount liabilities was 7.5%.



The 6.0% investment return scenario reflects 2.0% annual benefit increases through December 31, 2033 and 1.5% annual benefit increases beginning January 1, 2034. The 7.5% and 9.0% investment return scenarios reflect 2.0% annual benefit increases for all years.

Reflects data, assumptions, methods and plan provisions as of July 1, 2020.

All scenarios assume contributions made to the fund are equal to the statutory rate.

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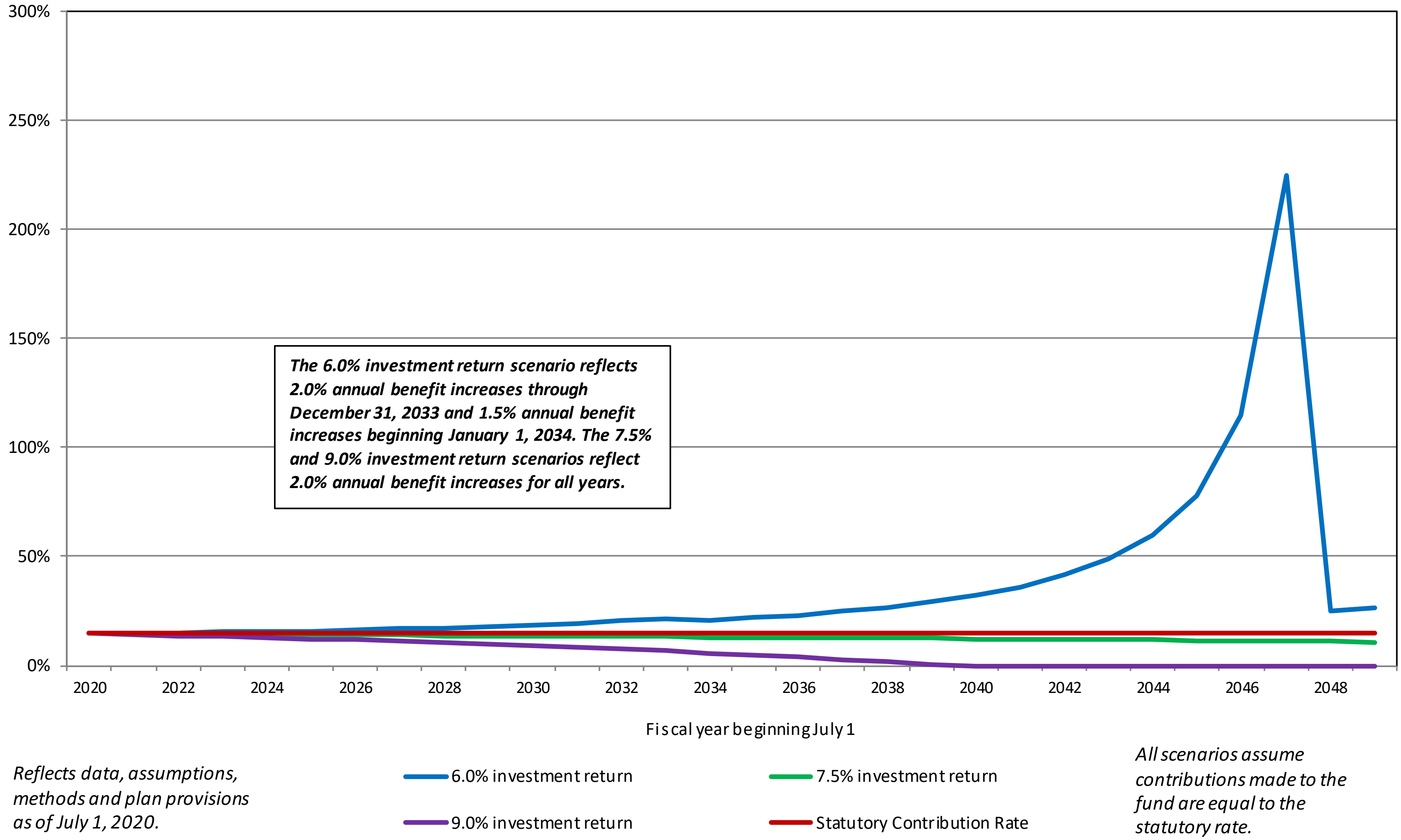
Local Government Correctional Service Retirement Plan

Estimated Required Contribution Rates (% of Pay)

In all scenarios, the interest rate used to discount liabilities was 7.5%.



Reflects data, assumptions, methods and plan provisions as of July 1, 2020.

All scenarios assume contributions made to the fund are equal to the statutory rate.

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Local Government Correctional Service Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	14.64%	14.51%	14.39%	14.27%	14.16%	14.05%	13.94%	13.83%	13.71%	13.59%
Sufficiency / (Deficiency)	(0.06)%	0.07%	0.19%	0.31%	0.42%	0.53%	0.64%	0.75%	0.87%	0.99%
Contributions										
Statutory - Chapter 353E	34,134	35,569	37,027	38,386	39,741	41,126	42,551	44,017	45,528	47,075
Required - Chapter 356 (MVA)	34,290	35,395	36,532	37,580	38,602	39,635	40,686	41,752	42,820	43,876
Sufficiency / (Deficiency)	(156)	174	495	806	1,139	1,491	1,865	2,265	2,708	3,199
Funding Ratios										
Current Assets (MVA)	787,322	856,258	928,660	1,004,614	1,084,234	1,167,217	1,253,263	1,342,754	1,435,754	1,532,164
Actuarial Accrued Liability (AAL)	814,456	883,090	954,773	1,029,549	1,107,588	1,188,560	1,272,144	1,358,704	1,448,278	1,540,733
Unfunded AAL	27,134	26,832	26,113	24,935	23,354	21,343	18,881	15,950	12,524	8,569
Funding Ratio	96.7%	97.0%	97.3%	97.6%	97.9%	98.2%	98.5%	98.8%	99.1%	99.4%
Benefit Payments	24,277	27,340	30,595	33,898	37,753	42,172	46,483	51,023	55,955	60,991
Ratio of Assets to Benefit Payments	32.43	31.32	30.35	29.64	28.72	27.68	26.96	26.32	25.66	25.12

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

This exhibit should only be viewed in conjunction with GRS' January 29, 2021 letter to PERA.

Local Government Correctional Service Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	13.46%	13.32%	13.21%	13.09%	12.98%	12.86%	12.74%	12.62%	12.49%	12.36%
Sufficiency / (Deficiency)	1.12%	1.26%	1.37%	1.49%	1.60%	1.72%	1.84%	1.96%	2.09%	2.22%
Contributions										
Statutory - Chapter 353E	48,651	50,291	51,989	53,745	55,562	57,438	59,374	61,381	63,445	65,587
Required - Chapter 356 (MVA)	44,900	45,943	47,094	48,267	49,461	50,671	51,893	53,129	54,364	55,611
Sufficiency / (Deficiency)	3,751	4,348	4,895	5,478	6,101	6,767	7,481	8,252	9,081	9,976
Funding Ratios										
Current Assets (MVA)	1,632,169	1,735,712	1,842,965	1,953,594	2,067,808	2,185,954	2,308,018	2,434,000	2,564,152	2,698,597
Actuarial Accrued Liability (AAL)	1,636,225	1,734,664	1,836,172	1,940,366	2,047,409	2,157,593	2,270,848	2,387,112	2,506,560	2,629,245
Unfunded AAL	4,056	(1,048)	(6,793)	(13,228)	(20,399)	(28,361)	(37,170)	(46,888)	(57,592)	(69,352)
Funding Ratio	99.8%	100.1%	100.4%	100.7%	101.0%	101.3%	101.6%	102.0%	102.3%	102.6%
Benefit Payments	66,371	71,905	78,086	84,366	90,633	97,256	104,220	111,296	118,610	125,978
Ratio of Assets to Benefit Payments	24.59	24.14	23.60	23.16	22.82	22.48	22.15	21.87	21.62	21.42

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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Local Government Correctional Service Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	12.23%	12.08%	11.94%	11.78%	11.62%	11.46%	11.28%	11.10%	10.91%	10.72%
Sufficiency / (Deficiency)	2.35%	2.50%	2.64%	2.80%	2.96%	3.12%	3.30%	3.48%	3.67%	3.86%
Contributions										
Statutory - Chapter 353E	67,802	70,090	72,454	74,864	77,349	79,903	82,527	85,243	88,040	90,914
Required - Chapter 356 (MVA)	56,853	58,088	59,310	60,493	61,653	62,778	63,861	64,912	65,909	66,845
Sufficiency / (Deficiency)	10,949	12,002	13,144	14,371	15,696	17,125	18,666	20,331	22,131	24,069
Funding Ratios										
Current Assets (MVA)	2,837,683	2,981,605	3,130,813	3,285,736	3,446,469	3,613,045	3,785,630	3,964,221	4,149,139	4,340,791
Actuarial Accrued Liability (AAL)	2,755,427	2,885,202	3,018,918	3,156,894	3,299,120	3,445,502	3,596,075	3,750,697	3,909,520	4,072,785
Unfunded AAL	(82,256)	(96,403)	(111,895)	(128,842)	(147,349)	(167,543)	(189,555)	(213,524)	(239,619)	(268,006)
Funding Ratio	103.0%	103.3%	103.7%	104.1%	104.5%	104.9%	105.3%	105.7%	106.1%	106.6%
Benefit Payments	133,566	141,140	148,758	156,745	165,194	173,972	183,258	192,761	202,407	212,506
Ratio of Assets to Benefit Payments	21.25	21.13	21.05	20.96	20.86	20.77	20.66	20.57	20.50	20.43

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

This exhibit should only be viewed in conjunction with GRS' January 29, 2021 letter to PERA.

Local Government Correctional Service Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	14.64%	14.81%	15.02%	15.28%	15.59%	15.94%	16.35%	16.82%	17.35%	17.95%
Sufficiency / (Deficiency)	(0.06)%	(0.23)%	(0.44)%	(0.70)%	(1.01)%	(1.36)%	(1.77)%	(2.24)%	(2.77)%	(3.37)%
Contributions										
Statutory - Chapter 353E	34,134	35,569	37,027	38,386	39,741	41,126	42,551	44,017	45,528	47,075
Required - Chapter 356 (MVA)	34,290	36,131	38,145	40,233	42,483	44,961	47,710	50,768	54,172	57,970
Sufficiency / (Deficiency)	(156)	(562)	(1,118)	(1,847)	(2,742)	(3,835)	(5,159)	(6,751)	(8,644)	(10,895)
Funding Ratios										
Current Assets (MVA)	787,322	844,376	903,163	963,611	1,025,671	1,088,865	1,152,713	1,217,404	1,282,797	1,348,575
Actuarial Accrued Liability (AAL)	814,456	883,090	954,773	1,029,549	1,107,588	1,188,560	1,272,144	1,358,704	1,448,278	1,540,733
Unfunded AAL	27,134	38,714	51,610	65,938	81,917	99,695	119,431	141,300	165,481	192,158
Funding Ratio	96.7%	95.6%	94.6%	93.6%	92.6%	91.6%	90.6%	89.6%	88.6%	87.5%
Benefit Payments	24,277	27,340	30,595	33,898	37,753	42,172	46,483	51,023	55,955	60,991
Ratio of Assets to Benefit Payments	32.43	30.88	29.52	28.43	27.17	25.82	24.80	23.86	22.93	22.11

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The interest rate used to discount liabilities was 7.5%.

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Local Government Correctional Service Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	18.64%	19.43%	20.33%	21.36%	20.57%	21.75%	23.14%	24.78%	26.77%	29.20%
Sufficiency / (Deficiency)	(4.06)%	(4.85)%	(5.75)%	(6.78)%	(5.99)%	(7.17)%	(8.56)%	(10.20)%	(12.19)%	(14.62)%
Contributions										
Statutory - Chapter 353E	48,651	50,291	51,989	53,745	55,562	57,438	59,374	61,381	63,445	65,587
Required - Chapter 356 (MVA)	62,215	67,024	72,488	78,736	78,392	85,685	94,219	104,332	116,475	131,335
Sufficiency / (Deficiency)	(13,564)	(16,733)	(20,499)	(24,991)	(22,830)	(28,247)	(34,845)	(42,951)	(53,030)	(65,748)
Funding Ratios										
Current Assets (MVA)	1,414,690	1,480,838	1,546,929	1,612,350	1,677,020	1,741,319	1,804,736	1,866,945	1,927,852	1,987,211
Actuarial Accrued Liability (AAL)	1,636,225	1,734,664	1,836,172	1,940,366	1,986,920	2,091,088	2,197,951	2,307,437	2,419,709	2,534,813
Unfunded AAL	221,535	253,826	289,243	328,016	309,900	349,769	393,215	440,492	491,857	547,602
Funding Ratio	86.5%	85.4%	84.3%	83.1%	84.4%	83.3%	82.1%	80.9%	79.7%	78.4%
Benefit Payments	66,371	71,905	78,086	84,366	90,292	96,753	103,537	110,413	117,507	124,629
Ratio of Assets to Benefit Payments	21.31	20.59	19.81	19.11	18.57	18.00	17.43	16.91	16.41	15.95

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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Local Government Correctional Service Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	32.24%	36.15%	41.36%	48.68%	59.66%	77.97%	114.60%	224.45%	25.32%	26.28%
Sufficiency / (Deficiency)	(17.66)%	(21.57)%	(26.78)%	(34.10)%	(45.08)%	(63.39)%	(100.02)%	(209.87)%	(10.74)%	(11.70)%
Contributions										
Statutory - Chapter 353E	67,802	70,090	72,454	74,864	77,349	79,903	82,527	85,243	88,040	90,914
Required - Chapter 356 (MVA)	149,906	173,766	205,549	249,969	316,526	427,324	648,692	1,312,286	152,916	163,866
Sufficiency / (Deficiency)	(82,104)	(103,676)	(133,095)	(175,105)	(239,177)	(347,421)	(566,165)	(1,227,043)	(64,876)	(72,952)
Funding Ratios										
Current Assets (MVA)	2,044,983	2,100,940	2,155,084	2,207,366	2,257,362	2,304,560	2,348,546	2,388,704	2,424,702	2,456,253
Actuarial Accrued Liability (AAL)	2,652,995	2,774,344	2,899,198	3,027,862	3,160,316	3,296,451	3,436,289	3,579,673	3,726,746	3,877,735
Unfunded AAL	608,012	673,404	744,114	820,496	902,954	991,891	1,087,743	1,190,969	1,302,044	1,421,482
Funding Ratio	77.1%	75.7%	74.3%	72.9%	71.4%	69.9%	68.4%	66.7%	65.1%	63.3%
Benefit Payments	131,949	139,234	146,538	154,190	162,280	170,676	179,555	188,623	197,807	207,416
Ratio of Assets to Benefit Payments	15.50	15.09	14.71	14.32	13.91	13.50	13.08	12.66	12.26	11.84

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

This exhibit should only be viewed in conjunction with GRS' January 29, 2021 letter to PERA.

Local Government Correctional Service Retirement Plan

Scenario: 9.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	14.64%	14.21%	13.74%	13.28%	12.78%	12.26%	11.71%	11.12%	10.49%	9.82%
Sufficiency / (Deficiency)	(0.06)%	0.37%	0.84%	1.30%	1.80%	2.32%	2.87%	3.46%	4.09%	4.76%
Contributions										
Statutory - Chapter 353E	34,134	35,569	37,027	38,386	39,741	41,126	42,551	44,017	45,528	47,075
Required - Chapter 356 (MVA)	34,290	34,659	34,897	34,959	34,848	34,584	34,162	33,561	32,752	31,703
Sufficiency / (Deficiency)	(156)	910	2,130	3,427	4,893	6,542	8,389	10,456	12,776	15,372
Funding Ratios										
Current Assets (MVA)	787,322	868,139	954,514	1,046,770	1,145,284	1,250,037	1,361,035	1,478,991	1,604,338	1,737,375
Actuarial Accrued Liability (AAL)	814,456	883,090	954,773	1,029,549	1,107,588	1,188,560	1,272,144	1,358,704	1,448,278	1,540,733
Unfunded AAL	27,134	14,951	259	(17,221)	(37,696)	(61,477)	(88,891)	(120,287)	(156,060)	(196,642)
Funding Ratio	96.7%	98.3%	100.0%	101.7%	103.4%	105.2%	107.0%	108.9%	110.8%	112.8%
Benefit Payments	24,277	27,340	30,595	33,898	37,753	42,172	46,483	51,023	55,955	60,991
Ratio of Assets to Benefit Payments	32.43	31.75	31.20	30.88	30.34	29.64	29.28	28.99	28.67	28.49

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Local Government Correctional Service Retirement Plan

Scenario: 9.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	9.10%	8.34%	7.54%	6.68%	5.77%	4.80%	3.78%	2.69%	1.54%	0.31%
Sufficiency / (Deficiency)	5.48%	6.24%	7.04%	7.90%	8.81%	9.78%	10.80%	11.89%	13.04%	14.27%
Contributions										
Statutory - Chapter 353E	48,651	50,291	51,989	53,745	55,562	57,438	59,374	61,381	63,445	65,587
Required - Chapter 356 (MVA)	30,378	28,781	26,873	24,618	21,982	18,919	15,380	11,323	6,680	1,407
Sufficiency / (Deficiency)	18,273	21,510	25,116	29,127	33,580	38,519	43,994	50,058	56,765	64,180
Funding Ratios										
Current Assets (MVA)	1,878,724	2,028,803	2,188,305	2,357,459	2,537,092	2,728,223	2,931,578	3,147,960	3,378,499	3,624,279
Actuarial Accrued Liability (AAL)	1,636,225	1,734,664	1,836,172	1,940,366	2,047,409	2,157,593	2,270,848	2,387,112	2,506,560	2,629,245
Unfunded AAL	(242,499)	(294,139)	(352,133)	(417,093)	(489,683)	(570,630)	(660,730)	(760,848)	(871,939)	(995,034)
Funding Ratio	114.8%	117.0%	119.2%	121.5%	123.9%	126.5%	129.1%	131.9%	134.8%	137.8%
Benefit Payments	66,371	71,905	78,086	84,366	90,633	97,256	104,220	111,296	118,610	125,978
Ratio of Assets to Benefit Payments	28.31	28.22	28.02	27.94	27.99	28.05	28.13	28.28	28.48	28.77

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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Local Government Correctional Service Retirement Plan

Scenario: 9.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Contributions (% of Payroll)										
Statutory - Chapter 353E	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Required - Chapter 356 (MVA)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sufficiency / (Deficiency)	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%	14.58%
Contributions										
Statutory - Chapter 353E	67,802	70,090	72,454	74,864	77,349	79,903	82,527	85,243	88,040	90,914
Required - Chapter 356 (MVA)	-	-	-	-	-	-	-	-	-	-
Sufficiency / (Deficiency)	67,802	70,090	72,454	74,864	77,349	79,903	82,527	85,243	88,040	90,914
Funding Ratios										
Current Assets (MVA)	3,886,698	4,167,099	4,467,187	4,788,769	5,133,441	5,502,877	5,899,032	6,323,852	6,779,788	7,269,571
Actuarial Accrued Liability (AAL)	2,755,427	2,885,202	3,018,918	3,156,894	3,299,120	3,445,502	3,596,075	3,750,697	3,909,520	4,072,785
Unfunded AAL	(1,131,271)	(1,281,897)	(1,448,269)	(1,631,875)	(1,834,321)	(2,057,375)	(2,302,957)	(2,573,155)	(2,870,268)	(3,196,786)
Funding Ratio	141.1%	144.4%	148.0%	151.7%	155.6%	159.7%	164.0%	168.6%	173.4%	178.5%
Benefit Payments	133,566	141,140	148,758	156,745	165,194	173,972	183,258	192,761	202,407	212,506
Ratio of Assets to Benefit Payments	29.10	29.52	30.03	30.55	31.08	31.63	32.19	32.81	33.50	34.21

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.