GRS Retirement Consulting

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January 31, 2019

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 – General Plan

Dear Doug:

Attached are 30-year projections of estimated funded status, required contributions, and statutory contributions under three asset return scenarios for the General Employees 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 General Employees Retirement Plan actuarial funding valuation as of July 1, 2018.

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 153,059 members. The profile of these new members is the same as new members hired between July 1, 2012 and July 1, 2017:

- Average age at hire is 36.4
- Average salary at hire is $30,400
- Approximately 68% female, 32% 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.

Actual benefit increases will equal the Social Security Cost-of-Living Adjustment, not less than 1.00% and not more than 1.50%. The projections assume a constant post-retirement benefit increase of 1.25%. If actual benefit increases are greater than assumed, liabilities and required contributions will be greater than the amounts shown in the enclosed projections. More information about this assumption can be found in the valuation report as of July 1, 2018.

Comments

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

- 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 General Employees Retirement Plan actuarial funding valuation as of July 1, 2018. 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 reflected in the July 1, 2018 valuation report 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 would typically recommend the contribution be at least equal to the normal cost of the plan.
- We typically 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.
- 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

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.

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.

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, 2018 valuation report. This 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.

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

In a 2018 analysis of long-term rate of investment return and inflation assumptions, GRS suggested that the current statutory investment return assumption of 7.5% is at the top of the reasonable range. Please see our letter dated October 3, 2018 for additional information. If capital markets decline further from the present levels, the 7.5% return assumption might not comply with actuarial standards for the July 1, 2019 valuation.

The 2018 analysis also 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 the modeling we have done, 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.

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 General Employees 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:sc
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 30 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.

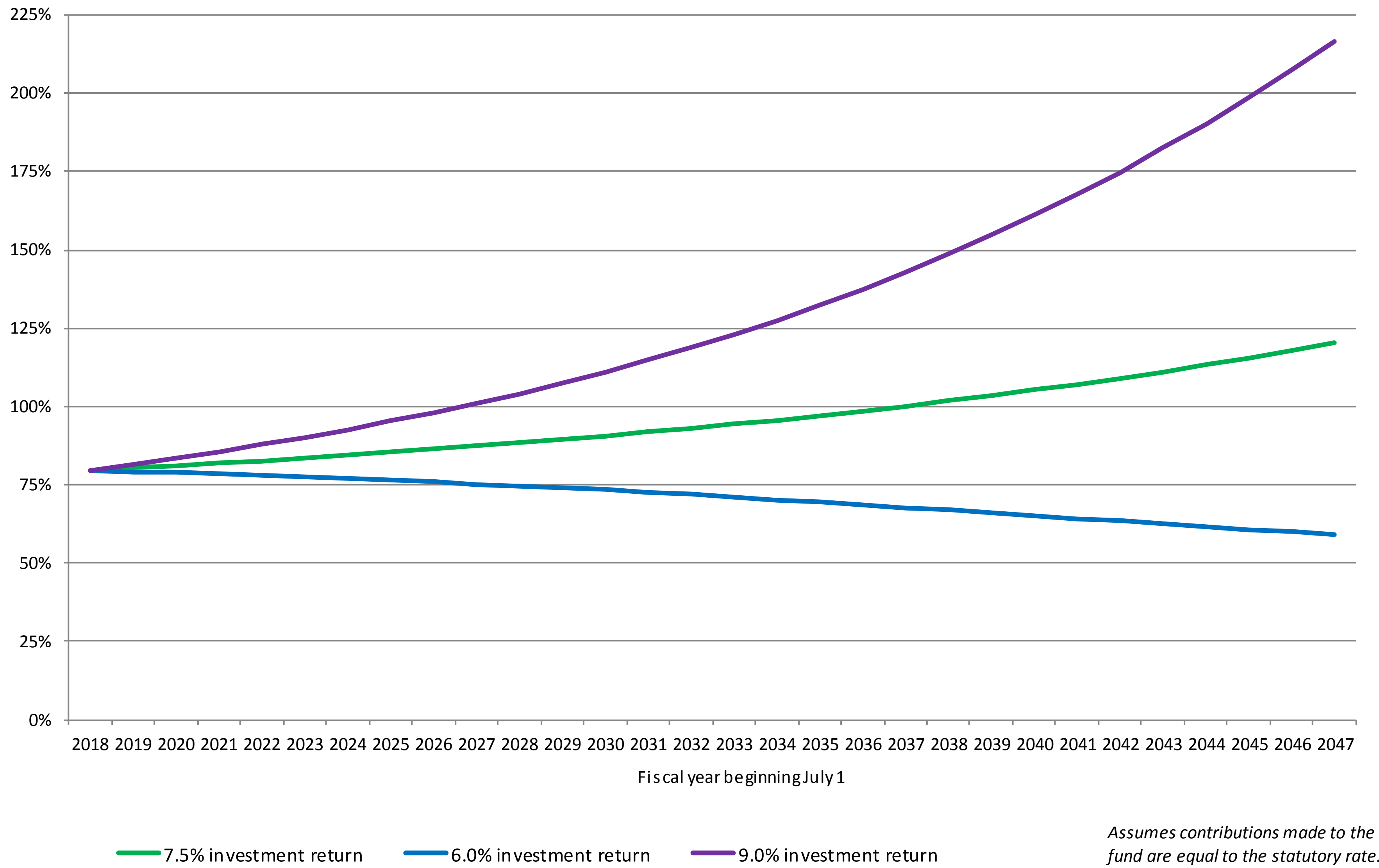
Limitations of Project Scope

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 31, 2019 letter.

PERA General Employees Retirement Plan
Estimated Funded Ratio

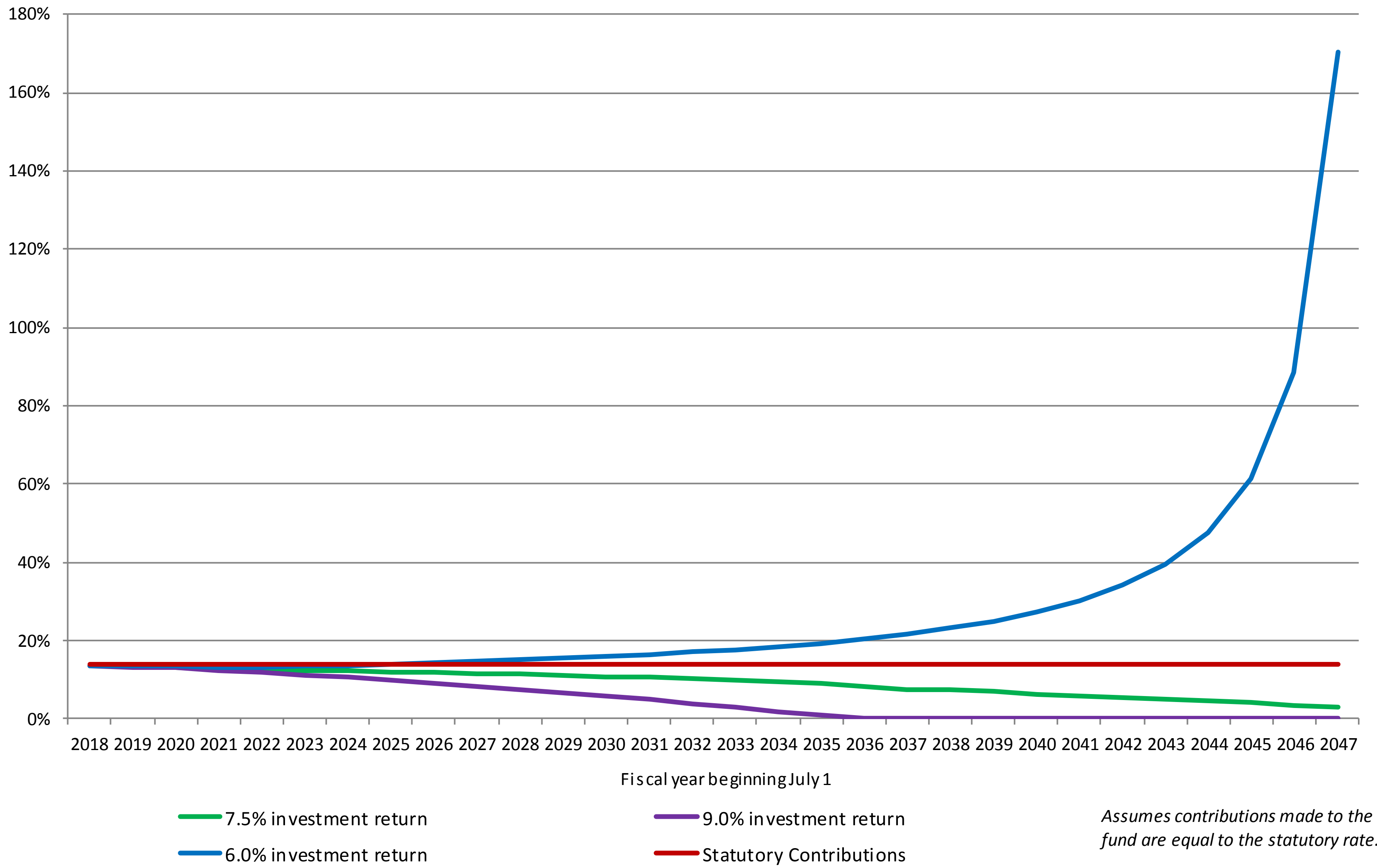
In all scenarios, the interest rate used to discount liabilities was 7.50%.



This exhibit should only be viewed in conjunction with GRS' January 31, 2019 letter.

PERA General Employees Retirement Plan
Estimated Required Contribution Rates (% of Pay)

In all scenarios, the interest rate used to discount liabilities was 7.50%.



Assumes contributions made to the fund are equal to the statutory rate.

This exhibit should only be viewed in conjunction with GRS' January 31, 2019 letter to PERA.

General Employees Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Contributions (% of Payroll)										
Statutory - Chapter 353	14.6%	14.6%	14.6%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
Required - Chapter 356 (MVA)	13.1%	12.9%	12.8%	12.6%	12.5%	12.4%	12.2%	12.0%	11.8%	11.6%
Sufficiency / (Deficiency)	1.5%	1.6%	1.8%	1.9%	2.0%	2.1%	2.3%	2.5%	2.6%	2.8%
Contributions										
Statutory - Chapter 353	928,417	954,626	986,741	1,015,326	1,043,795	1,073,555	1,103,437	1,134,578	1,167,031	1,200,614
Required - Chapter 356 (MVA)	831,675	847,555	866,758	883,601	899,351	914,779	928,989	942,416	954,838	965,777
Sufficiency / (Deficiency)	96,742	107,071	119,982	131,725	144,444	158,776	174,449	192,162	212,193	234,836
Funding Ratios										
Current Assets (MVA)	21,553,477	22,472,783	23,410,097	24,367,919	25,346,137	26,343,228	27,362,817	28,407,603	29,483,678	30,596,779
Actuarial Accrued Liability (AAL)	27,101,067	27,982,090	28,865,773	29,748,170	30,630,734	31,510,539	32,388,729	33,266,265	34,146,675	35,032,950
Unfunded AAL	5,547,590	5,509,307	5,455,676	5,380,251	5,284,597	5,167,311	5,025,912	4,858,662	4,662,997	4,436,171
Funding Ratio	79.5%	80.3%	81.1%	81.9%	82.8%	83.6%	84.5%	85.4%	86.3%	87.3%
Benefit Payments	1,588,325	1,663,276	1,742,945	1,820,725	1,901,331	1,981,080	2,059,977	2,136,063	2,210,177	2,282,231
Ratio of Assets to Benefit Payments	13.57	13.51	13.43	13.38	13.33	13.30	13.28	13.30	13.34	13.41

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 31, 2019 letter to PERA.

General Employees Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Contributions (% of Payroll)										
Statutory - Chapter 353	14.4%	14.4%	14.4%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	11.4%	11.1%	10.9%	10.5%	10.2%	9.8%	9.4%	8.9%	8.4%	7.7%
Sufficiency / (Deficiency)	3.0%	3.3%	3.6%	3.5%	3.8%	4.2%	4.6%	5.1%	5.7%	6.3%
Contributions										
Statutory - Chapter 353	1,235,588	1,271,688	1,309,060	1,310,474	1,349,972	1,390,669	1,432,691	1,475,931	1,520,517	1,566,546
Required - Chapter 356 (MVA)	974,979	981,774	985,622	985,617	984,113	977,193	963,461	940,910	907,015	859,562
Sufficiency / (Deficiency)	260,609	289,914	323,439	324,857	365,859	413,476	469,230	535,022	613,502	706,984
Funding Ratios										
Current Assets (MVA)	31,752,975	32,960,058	34,225,522	35,557,125	36,923,427	38,366,762	39,894,541	41,515,099	43,236,183	45,066,899
Actuarial Accrued Liability (AAL)	35,928,336	36,837,382	37,764,330	38,713,294	39,687,495	40,689,661	41,722,965	42,791,114	43,896,992	45,044,355
Unfunded AAL	4,175,360	3,877,324	3,538,808	3,156,169	2,764,067	2,322,899	1,828,424	1,276,015	660,810	(22,544)
Funding Ratio	88.4%	89.5%	90.6%	91.9%	93.0%	94.3%	95.6%	97.0%	98.5%	100.1%
Benefit Payments	2,351,264	2,417,862	2,482,458	2,546,165	2,609,649	2,672,738	2,735,206	2,798,117	2,860,842	2,922,132
Ratio of Assets to Benefit Payments	13.50	13.63	13.79	13.96	14.15	14.35	14.59	14.84	15.11	15.42

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 31, 2019 letter to PERA.

General Employees Retirement Plan

Scenario: 7.5% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**
Contributions (% of Payroll)										
Statutory - Chapter 353	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	7.3%	6.9%	6.5%	6.0%	5.6%	5.1%	4.6%	4.1%	3.5%	3.0%
Sufficiency / (Deficiency)	6.7%	7.1%	7.5%	8.0%	8.4%	8.9%	9.4%	9.9%	10.5%	11.1%
Contributions										
Statutory - Chapter 353	1,613,857	1,662,574	1,712,592	1,764,132	1,817,388	1,872,450	1,929,240	1,987,837	2,048,388	2,110,934
Required - Chapter 356 (MVA)	840,567	817,664	790,418	758,542	721,686	679,401	631,108	576,305	514,470	444,960
Sufficiency / (Deficiency)	773,290	844,909	922,174	1,005,590	1,095,702	1,193,049	1,298,131	1,411,532	1,533,918	1,665,974
Funding Ratios										
Current Assets (MVA)	47,018,439	49,103,340	51,332,506	53,717,288	56,269,401	59,002,259	61,930,202	65,067,254	68,427,127	72,024,639
Actuarial Accrued Liability (AAL)	46,238,585	47,486,123	48,791,212	50,158,142	51,590,896	53,094,468	54,674,107	56,334,135	58,077,801	59,908,589
Unfunded AAL	(779,854)	(1,617,217)	(2,541,294)	(3,559,146)	(4,678,505)	(5,907,791)	(7,256,095)	(8,733,119)	(10,349,326)	(12,116,050)
Funding Ratio	101.7%	103.4%	105.2%	107.1%	109.1%	111.1%	113.3%	115.5%	117.8%	120.2%
Benefit Payments	2,981,335	3,041,056	3,101,548	3,163,500	3,226,311	3,290,147	3,356,275	3,426,084	3,499,646	3,577,586
Ratio of Assets to Benefit Payments	15.77	16.15	16.55	16.98	17.44	17.93	18.45	18.99	19.55	20.13

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 31, 2019 letter to PERA.

General Employees Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Contributions (% of Payroll)										
Statutory - Chapter 353	14.6%	14.6%	14.6%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
Required - Chapter 356 (MVA)	13.1%	13.2%	13.4%	13.6%	13.8%	14.1%	14.3%	14.6%	14.9%	15.3%
Sufficiency / (Deficiency)	1.5%	1.3%	1.2%	1.0%	0.7%	0.4%	0.2%	(0.2)%	(0.5)%	(0.8)%
Contributions										
Statutory - Chapter 353	928,417	954,626	986,741	1,015,326	1,043,795	1,073,555	1,103,437	1,134,578	1,167,031	1,200,614
Required - Chapter 356 (MVA)	831,675	866,523	907,384	948,921	992,801	1,040,260	1,090,945	1,145,934	1,205,772	1,270,898
Sufficiency / (Deficiency)	96,742	88,103	79,356	66,405	50,994	33,294	12,492	(11,357)	(38,740)	(70,284)
Funding Ratios										
Current Assets (MVA)	21,553,477	22,154,521	22,741,055	23,313,352	23,868,917	24,403,717	24,918,699	25,413,678	25,891,626	26,354,888
Actuarial Accrued Liability (AAL)	27,101,067	27,982,090	28,865,773	29,748,170	30,630,734	31,510,539	32,388,729	33,266,265	34,146,675	35,032,950
Unfunded AAL	5,547,590	5,827,569	6,124,717	6,434,818	6,761,817	7,106,822	7,470,031	7,852,587	8,255,049	8,678,063
Funding Ratio	79.5%	79.2%	78.8%	78.4%	77.9%	77.5%	76.9%	76.4%	75.8%	75.2%
Benefit Payments	1,588,325	1,663,276	1,742,945	1,820,725	1,901,331	1,981,080	2,059,977	2,136,063	2,210,177	2,282,231
Ratio of Assets to Benefit Payments	13.57	13.32	13.05	12.80	12.55	12.32	12.10	11.90	11.71	11.55

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 31, 2019 letter to PERA.

General Employees Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Contributions (% of Payroll)										
Statutory - Chapter 353	14.4%	14.4%	14.4%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	15.7%	16.1%	16.6%	17.1%	17.7%	18.5%	19.3%	20.2%	21.3%	22.6%
Sufficiency / (Deficiency)	(1.3)%	(1.7)%	(2.2)%	(3.1)%	(3.7)%	(4.5)%	(5.3)%	(6.2)%	(7.3)%	(8.6)%
Contributions										
Statutory - Chapter 353	1,235,588	1,271,688	1,309,060	1,310,474	1,349,972	1,390,669	1,432,691	1,475,931	1,520,517	1,566,546
Required - Chapter 356 (MVA)	1,342,166	1,420,263	1,506,309	1,601,466	1,710,656	1,833,223	1,972,003	2,130,535	2,313,703	2,528,146
Sufficiency / (Deficiency)	(106,579)	(148,575)	(197,249)	(290,992)	(360,684)	(442,554)	(539,312)	(654,604)	(793,186)	(961,600)
Funding Ratios										
Current Assets (MVA)	26,805,850	27,248,299	27,685,379	28,120,121	28,516,247	28,910,884	29,305,566	29,702,283	30,101,937	30,506,264
Actuarial Accrued Liability (AAL)	35,928,336	36,837,382	37,764,330	38,713,294	39,687,495	40,689,661	41,722,965	42,791,114	43,896,992	45,044,355
Unfunded AAL	9,122,486	9,589,082	10,078,951	10,593,174	11,171,248	11,778,777	12,417,398	13,088,832	13,795,055	14,538,092
Funding Ratio	74.6%	74.0%	73.3%	72.6%	71.9%	71.1%	70.2%	69.4%	68.6%	67.7%
Benefit Payments	2,351,264	2,417,862	2,482,458	2,546,165	2,609,649	2,672,738	2,735,206	2,798,117	2,860,842	2,922,132
Ratio of Assets to Benefit Payments	11.40	11.27	11.15	11.04	10.93	10.82	10.71	10.62	10.52	10.44

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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General Employees Retirement Plan

Scenario: 6.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Contributions (% of Payroll)										
Statutory - Chapter 353	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	24.1%	26.0%	28.4%	31.4%	35.5%	41.2%	49.7%	63.8%	92.2%	177.2%
Sufficiency / (Deficiency)	(10.1)%	(12.0)%	(14.4)%	(17.4)%	(21.5)%	(27.2)%	(35.7)%	(49.8)%	(78.2)%	(163.2)%
Contributions										
Statutory - Chapter 353	1,613,857	1,662,574	1,712,592	1,764,132	1,817,388	1,872,450	1,929,240	1,987,837	2,048,388	2,110,934
Required - Chapter 356 (MVA)	2,782,974	3,091,592	3,473,951	3,961,630	4,607,143	5,504,860	6,843,409	9,063,143	13,485,040	26,713,525
Sufficiency / (Deficiency)	(1,169,116)	(1,429,018)	(1,761,358)	(2,197,498)	(2,789,755)	(3,632,411)	(4,914,170)	(7,075,306)	(11,436,652)	(24,602,591)
Funding Ratios										
Current Assets (MVA)	30,918,488	31,342,536	31,780,011	32,232,247	32,700,174	33,185,589	33,690,321	34,214,926	34,758,641	35,320,729
Actuarial Accrued Liability (AAL)	46,238,585	47,486,123	48,791,212	50,158,142	51,590,896	53,094,468	54,674,107	56,334,135	58,077,801	59,908,589
Unfunded AAL	15,320,097	16,143,587	17,011,201	17,925,895	18,890,722	19,908,879	20,983,786	22,119,209	23,319,160	24,587,860
Funding Ratio	66.9%	66.0%	65.1%	64.3%	63.4%	62.5%	61.6%	60.7%	59.9%	59.0%
Benefit Payments	2,981,335	3,041,056	3,101,548	3,163,500	3,226,311	3,290,147	3,356,275	3,426,084	3,499,646	3,577,586
Ratio of Assets to Benefit Payments	10.37	10.31	10.25	10.19	10.14	10.09	10.04	9.99	9.93	9.87

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 31, 2019 letter to PERA.

General Employees Retirement Plan
Scenario: 9.0% investment return for all years
Fiscal year beginning July 1

$ in Thousands	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Contributions (% of Payroll)										
Statutory - Chapter 353	14.6%	14.6%	14.6%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
Required - Chapter 356 (MVA)	13.1%	12.6%	12.2%	11.7%	11.2%	10.6%	9.9%	9.2%	8.4%	7.5%
Sufficiency / (Deficiency)	1.5%	1.9%	2.4%	2.9%	3.4%	3.9%	4.6%	5.3%	6.1%	7.0%
Contributions										
Statutory - Chapter 353	928,417	954,626	986,741	1,015,326	1,043,795	1,073,555	1,103,437	1,134,578	1,167,031	1,200,614
Required - Chapter 356 (MVA)	831,675	828,587	825,552	816,393	801,797	781,857	754,870	720,312	676,812	622,500
Sufficiency / (Deficiency)	96,742	126,039	161,188	198,933	241,998	291,698	348,568	414,265	490,219	578,114
Funding Ratios										
Current Assets (MVA)	21,553,477	22,791,045	24,088,686	25,452,965	26,888,215	28,397,751	29,990,484	31,674,919	33,463,544	35,369,150
Actuarial Accrued Liability (AAL)	27,101,067	27,982,090	28,865,773	29,748,170	30,630,734	31,510,539	32,388,729	33,266,265	34,146,675	35,032,950
Unfunded AAL	5,547,590	5,191,045	4,777,087	4,295,205	3,742,519	3,112,787	2,398,246	1,591,346	683,131	(336,199)
Funding Ratio	79.5%	81.5%	83.5%	85.6%	87.8%	90.1%	92.6%	95.2%	98.0%	101.0%
Benefit Payments	1,588,325	1,663,276	1,742,945	1,820,725	1,901,331	1,981,080	2,059,977	2,136,063	2,210,177	2,282,231
Ratio of Assets to Benefit Payments	13.57	13.70	13.82	13.98	14.14	14.33	14.56	14.83	15.14	15.50

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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General Employees Retirement Plan

Scenario: 9.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Contributions (% of Payroll)										
Statutory - Chapter 353	14.4%	14.4%	14.4%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	6.8%	5.9%	5.1%	4.1%	3.2%	2.2%	1.1%	0.0%	0.0%	0.0%
Sufficiency / (Deficiency)	7.7%	8.5%	9.4%	9.9%	10.8%	11.8%	12.9%	14.0%	14.0%	14.0%
Contributions										
Statutory - Chapter 353	1,235,588	1,271,688	1,309,060	1,310,474	1,349,972	1,390,669	1,432,691	1,475,931	1,520,517	1,566,546
Required - Chapter 356 (MVA)	578,573	522,980	459,552	387,345	307,736	217,750	116,413	2,503	-	-
Sufficiency / (Deficiency)	657,015	748,708	849,508	923,129	1,042,236	1,172,919	1,316,278	1,473,428	1,520,517	1,566,546
Funding Ratios										
Current Assets (MVA)	37,405,581	39,589,203	41,936,969	44,467,055	47,159,207	50,068,027	53,214,665	56,622,538	60,315,951	64,322,182
Actuarial Accrued Liability (AAL)	35,928,336	36,837,382	37,764,330	38,713,294	39,687,495	40,689,661	41,722,965	42,791,114	43,896,992	45,044,355
Unfunded AAL	(1,477,245)	(2,751,821)	(4,172,639)	(5,753,760)	(7,471,712)	(9,378,367)	(11,491,700)	(13,831,423)	(16,418,959)	(19,277,827)
Funding Ratio	104.1%	107.5%	111.1%	114.9%	118.8%	123.1%	127.5%	132.3%	137.4%	142.8%
Benefit Payments	2,351,264	2,417,862	2,482,458	2,546,165	2,609,649	2,672,738	2,735,206	2,798,117	2,860,842	2,922,132
Ratio of Assets to Benefit Payments	15.91	16.37	16.89	17.46	18.07	18.73	19.46	20.24	21.08	22.01

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.

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General Employees Retirement Plan

Scenario: 9.0% investment return for all years

Fiscal year beginning July 1

$ in Thousands	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**
Contributions (% of Payroll)										
Statutory - Chapter 353	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Required - Chapter 356 (MVA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sufficiency / (Deficiency)	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Contributions										
Statutory - Chapter 353	1,613,857	1,662,574	1,712,592	1,764,132	1,817,388	1,872,450	1,929,240	1,987,837	2,048,388	2,110,934
Required - Chapter 356 (MVA)	-	-	-	-	-	-	-	-	-	-
Sufficiency / (Deficiency)	1,613,857	1,662,574	1,712,592	1,764,132	1,817,388	1,872,450	1,929,240	1,987,837	2,048,388	2,110,934
Funding Ratios										
Current Assets (MVA)	68,672,374	73,400,986	78,542,982	84,136,103	90,220,994	96,842,784	104,050,586	111,896,526	120,436,053	129,729,682
Actuarial Accrued Liability (AAL)	46,238,585	47,486,123	48,791,212	50,158,142	51,590,896	53,094,468	54,674,107	56,334,135	58,077,801	59,908,589
Unfunded AAL	(22,433,789)	(25,914,863)	(29,751,770)	(33,977,961)	(38,630,098)	(43,748,317)	(49,376,479)	(55,562,390)	(62,358,252)	(69,821,093)
Funding Ratio	148.5%	154.6%	161.0%	167.7%	174.9%	182.4%	190.3%	198.6%	207.4%	216.6%
Benefit Payments	2,981,335	3,041,056	3,101,548	3,163,500	3,226,311	3,290,147	3,356,275	3,426,084	3,499,646	3,577,586
Ratio of Assets to Benefit Payments	23.03	24.14	25.32	26.60	27.96	29.43	31.00	32.66	34.41	36.26

Numbers may not add due to rounding.

The interest rate used to discount liabilities was 7.5%.