

January 31, 2013

CONFIDENTIAL

Ms. Mary Vanek
Executive Director
Public Employees Ret. Assoc. of MN
60 Empire Drive, Suite 200
St. Paul, MN 55103

Re: Projection of Contributions and Funding Status – Police & Fire Plan

Dear Mary:

Attached are 30-year projections of estimated funded status, required contributions, and statutory contributions under three asset return scenarios for the Public Employees Police & Fire Plan. The estimates are based on participant data, assumptions, methods, and plan provisions as of July 1, 2012 as detailed in the Police & Fire Plan Actuarial Valuation Report as of July 1, 2012.

As required by the State of Minnesota Standards for Actuarial Work, the projections reflect three asset return scenarios. The statutory investment return assumption is a 5-year select and ultimate approach with rates of 8.0% for the period July 1, 2012 to June 30, 2017 and 8.5% thereafter. The scenarios assume future investment returns of 1.5% more than the assumed rate, the assumed rate, and 1.5% less than the assumed rate.

The estimates are based on the market value of assets with no smoothing of investment gains or losses. Payroll is assumed to increase 3.75% a year, consistent with the valuation assumption for total payroll growth. In all scenarios, the valuation interest rate used to discount liabilities was the single effective interest rate used in the July 1, 2012 valuation of 8.36%, which produces a similar liability stream as trending to a liability that reflects the expiration of the 5 year select period on June 30, 2017.

Normal cost is assumed to trend downward as a percent of payroll to a level ultimate rate that reflects the expiration of the 5 year select period on June 30, 2017.

Benefit payments are based on the assumptions and methods described in this letter, with adjustments applied to estimate the impact of future members hired after June 30, 2012 retiring during the 30-year projection period. To estimate this impact, we assumed total benefit payments would increase a minimum of 3% per year.

If actuarial accrued liability exceeds assets, the unfunded actuarial accrued liability is amortized through June 30, 2039 per Minnesota Statute 356.215, Subdivision 11. As directed by PERA, the statutory amortization date is assumed to be changed to June 30, 2069 once the current period

expires in 2039. 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.

It is our understanding that changes in benefits and contributions are being considered to address the funding deficiency in this plan; these potential changes have not been reflected herein.

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. If the plan reaches a funding ratio of 90% (on a market value of assets basis) in the future, postretirement increases will revert to the 2.5% level.

Under the 7.0% and 8.5% ultimate rate of return scenarios, the funded status of the plan is expected to deteriorate. We assumed a 1.5% postretirement benefit increase for all years for these two scenarios. If the postretirement benefit increase was assumed to be 2.5% instead of 1.5%, the liabilities would be significantly greater than the liabilities shown in this report.

Under the 10.0% ultimate rate of return scenario, assuming all future postretirement benefit increases equal 1.5%, the funded status of the plan is expected to exceed 90% in approximately 2025. However, if at that time future postretirement increases are assumed to be 2.5%, the funded ratio would be less than 90%. If the plan continued to pay postretirement increases of 1.5% per year after 2025, our projections indicate that the plan would reach a funding status of 90% (assuming future postretirement increases of 2.5%) around the year 2030. Without further guidance, we cannot determine the date the postretirement increase would change to 2.5% and have not shown values for this scenario beyond the year 2030. Different results would be obtained if our projected liabilities for years prior to 2030 anticipated a switch to the 2.5% COLA in the year 2030.

Comments

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.

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. PERA is solely responsible for communicating to GRS any changes required thereto.

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

Professional Qualifications

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

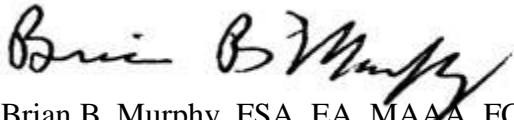
The undersigned actuaries are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. In addition, Mr. Murphy meets the requirements of "approved actuary" under Minnesota Statutes Section 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 Public Employees Police & Fire 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.

Sincerely,



Bonita J. Wurst, ASA, EA, MAAA



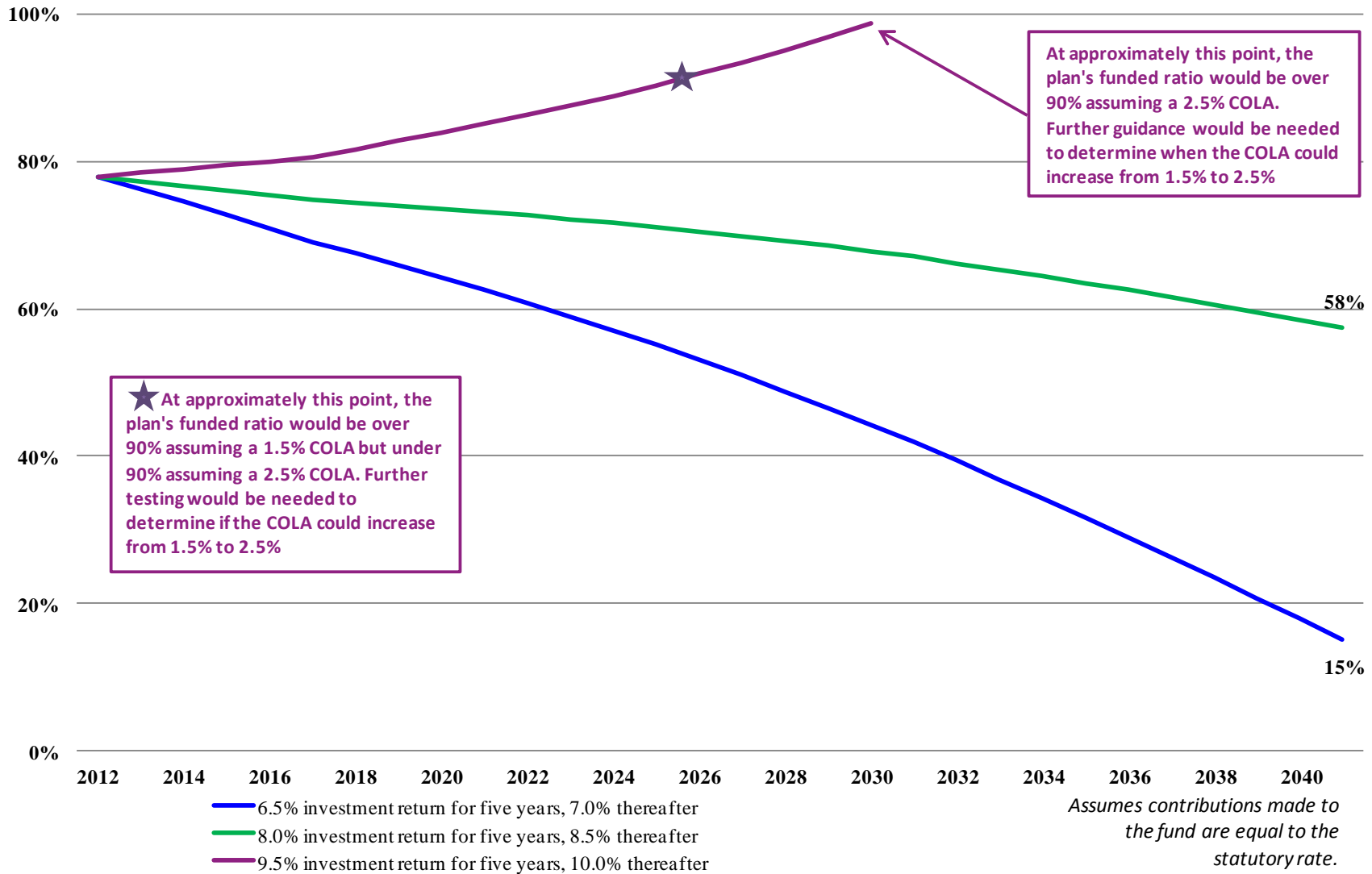
Brian B. Murphy, FSA, EA, MAAA, FCA

BJW/BBM:sc
Enclosures

This exhibit should only be viewed in conjunction with GRS' January 31, 2013 letter to PERA.

Public Employees Police & Fire Retirement Plan Projection of Funded Status

Assumes postretirement benefit increase of 1.5% for all years



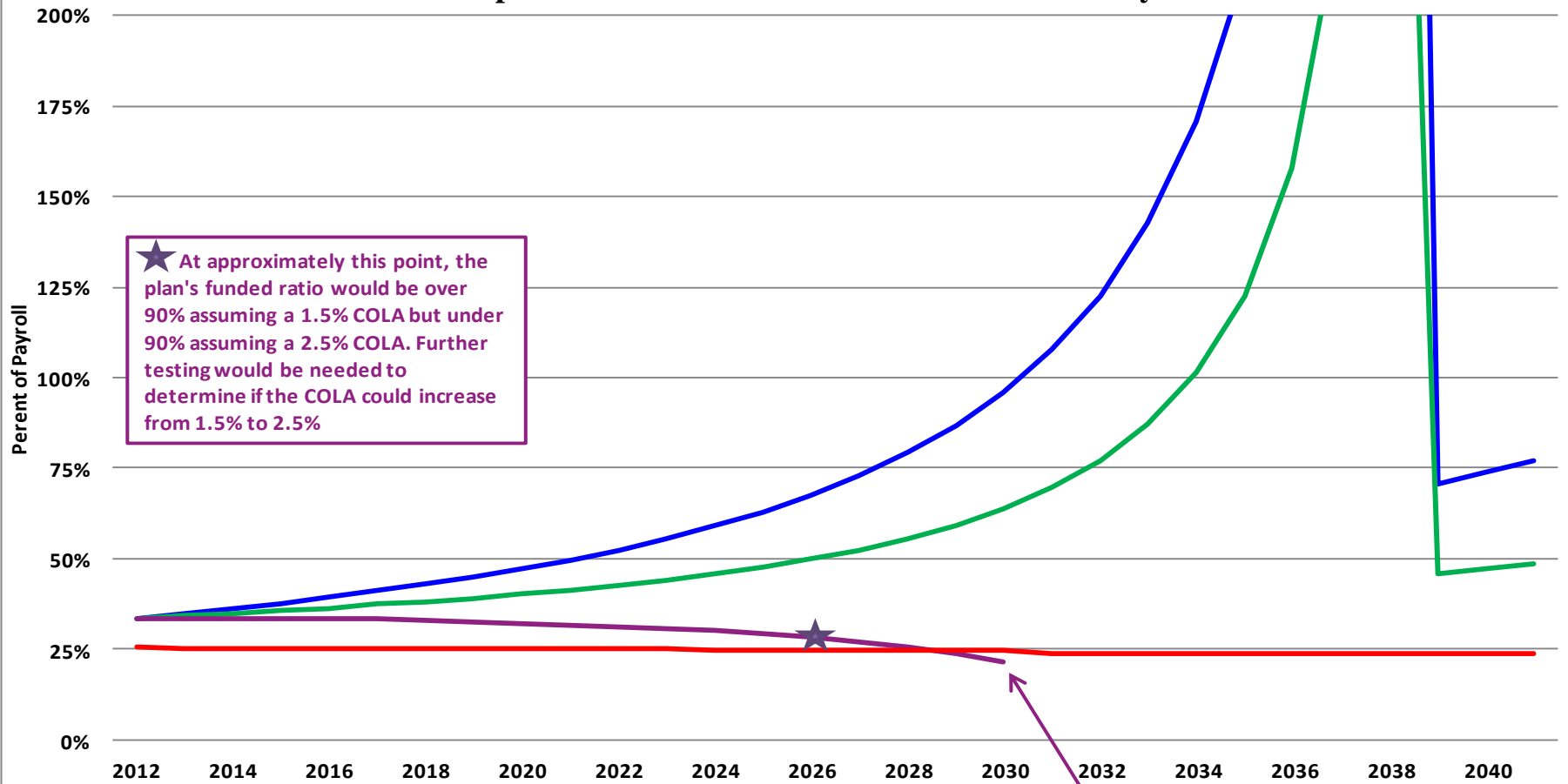
This exhibit should only be viewed in conjunction with GRS' January 31, 2013 letter to PERA.

Public Employees Police & Fire Retirement Plan

Estimated Contribution Rates

Assumes postretirement benefit increase of 1.5% for all years

Rates briefly exceed 200% of payroll at the end of the projection period. For details, refer to attached exhibits.



★ At approximately this point, the plan's funded ratio would be over 90% assuming a 1.5% COLA but under 90% assuming a 2.5% COLA. Further testing would be needed to determine if the COLA could increase from 1.5% to 2.5%

At approximately this point, the plan's funded ratio would be over 90% assuming a 2.5% COLA. Further guidance would be needed to determine when the COLA could increase from 1.5% to 2.5%

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

- 6.5% investment return for five years, 7.0% thereafter
- 8.0% investment return for five years, 8.5% thereafter
- 9.5% investment return for five years, 10.0% thereafter
- Statutory Contribution Rate

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan
Scenario: 6.5% for Five Years, 7.0% thereafter
Fiscal year beginning July 1

| \$ in Thousands | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 25.4% | 25.4% | 25.3% | 25.3% | 25.2% | 25.2% | 25.2% | 25.1% | 25.1% | 25.0% |
| Required - Chapter 356 | 33.6% | 34.8% | 36.2% | 37.7% | 39.4% | 41.2% | 43.0% | 45.0% | 47.2% | 49.7% |
| Sufficiency / (Deficiency) | (8.1%) | (9.5%) | (11.0%) | (12.5%) | (14.1%) | (16.0%) | (17.9%) | (19.9%) | (22.2%) | (24.6%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 205,282 | 212,547 | 219,502 | 227,904 | 236,017 | 244,434 | 253,167 | 262,227 | 271,602 | 281,354 |
| Required - Chapter 356 | 271,010 | 291,771 | 314,681 | 340,080 | 368,246 | 400,071 | 433,205 | 470,179 | 511,613 | 558,266 |
| Sufficiency / (Deficiency) | (65,728) | (79,224) | (95,179) | (112,176) | (132,229) | (155,637) | (180,038) | (207,952) | (240,011) | (276,912) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 5,772,047 | 5,886,828 | 5,998,739 | 6,106,047 | 6,209,060 | 6,306,051 | 6,426,299 | 6,539,790 | 6,644,946 | 6,740,258 |
| Actuarial Accrued Liability (AAL) | 7,403,295 | 7,719,797 | 8,050,132 | 8,394,360 | 8,752,946 | 9,126,079 | 9,513,764 | 9,917,074 | 10,336,143 | 10,771,327 |
| Unfunded AAL | 1,631,248 | 1,832,969 | 2,051,393 | 2,288,313 | 2,543,886 | 2,820,028 | 3,087,465 | 3,377,284 | 3,691,197 | 4,031,069 |
| Funding Ratio | 78% | 76% | 75% | 73% | 71% | 69% | 68% | 66% | 64% | 63% |
| Benefit Payments | 456,236 | 473,474 | 491,914 | 511,179 | 531,571 | 553,291 | 576,644 | 601,393 | 627,348 | 654,786 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan
Scenario: 6.5% for Five Years, 7.0% thereafter
Fiscal year beginning July 1

| \$ in Thousands | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 25.0% | 25.0% | 24.9% | 24.9% | 24.9% | 24.8% | 24.8% | 24.8% | 24.7% | 24.0% |
| Required - Chapter 356 | 52.4% | 55.5% | 59.0% | 62.9% | 67.5% | 72.9% | 79.2% | 86.8% | 96.1% | 107.6% |
| Sufficiency / (Deficiency) | (27.4%) | (30.5%) | (34.0%) | (38.0%) | (42.7%) | (48.1%) | (54.4%) | (62.0%) | (71.3%) | (83.6%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 291,473 | 301,970 | 312,862 | 324,162 | 335,885 | 348,048 | 360,668 | 373,760 | 387,344 | 389,902 |
| Required - Chapter 356 | 611,072 | 671,201 | 740,131 | 819,765 | 912,589 | 1,021,917 | 1,152,268 | 1,309,972 | 1,504,171 | 1,748,577 |
| Sufficiency / (Deficiency) | (319,599) | (369,231) | (427,269) | (495,603) | (576,704) | (673,869) | (791,600) | (936,212) | (1,116,827) | (1,358,675) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 6,823,890 | 6,894,130 | 6,949,290 | 6,987,030 | 7,005,268 | 7,002,071 | 6,976,224 | 6,926,701 | 6,851,696 | 6,749,337 |
| Actuarial Accrued Liability (AAL) | 11,222,732 | 11,690,748 | 12,175,944 | 12,678,395 | 13,198,604 | 13,737,412 | 14,296,583 | 14,878,305 | 15,484,231 | 16,116,213 |
| Unfunded AAL | 4,398,842 | 4,796,618 | 5,226,654 | 5,691,365 | 6,193,336 | 6,735,341 | 7,320,359 | 7,951,604 | 8,632,535 | 9,366,876 |
| Funding Ratio | 61% | 59% | 57% | 55% | 53% | 51% | 49% | 47% | 44% | 42% |
| Benefit Payments | 683,454 | 713,224 | 744,627 | 777,270 | 810,883 | 844,659 | 878,348 | 912,651 | 947,528 | 982,506 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan
Scenario: 6.5% for Five Years, 7.0% thereafter
Fiscal year beginning July 1

| \$ in Thousands | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% |
| Required - Chapter 356 | 122.6% | 142.6% | 170.5% | 212.3% | 282.0% | 421.4% | 839.3% | 70.6% | 73.7% | 76.9% |
| Sufficiency / (Deficiency) | (98.6%) | (118.6%) | (146.5%) | (188.3%) | (258.0%) | (397.4%) | (815.3%) | (46.6%) | (49.7%) | (52.9%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 404,523 | 419,693 | 435,432 | 451,760 | 468,701 | 486,278 | 504,513 | 523,432 | 543,061 | 563,426 |
| Required - Chapter 356 | 2,066,704 | 2,493,224 | 3,093,229 | 3,996,906 | 5,508,032 | 8,537,952 | 17,643,395 | 1,540,634 | 1,666,950 | 1,805,774 |
| Sufficiency / (Deficiency) | (1,662,181) | (2,073,531) | (2,657,797) | (3,545,146) | (5,039,331) | (8,051,674) | (17,138,882) | (1,017,202) | (1,123,889) | (1,242,348) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 6,606,596 | 6,432,911 | 6,226,893 | 5,987,189 | 5,712,875 | 5,402,048 | 5,051,763 | 4,658,862 | 4,219,961 | 3,731,430 |
| Actuarial Accrued Liability (AAL) | 16,776,760 | 17,468,908 | 18,195,985 | 18,961,727 | 19,770,710 | 20,626,965 | 21,533,942 | 22,495,369 | 23,515,276 | 24,598,018 |
| Unfunded AAL | 10,170,164 | 11,035,997 | 11,969,092 | 12,974,538 | 14,057,835 | 15,224,917 | 16,482,179 | 17,836,507 | 19,295,315 | 20,866,588 |
| Funding Ratio | 39% | 37% | 34% | 32% | 29% | 26% | 23% | 21% | 18% | 15% |
| Benefit Payments | 1,017,304 | 1,051,897 | 1,086,177 | 1,119,658 | 1,153,247 | 1,187,845 | 1,223,480 | 1,260,184 | 1,297,990 | 1,336,930 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan

Scenario: 8.0% for five years, 8.5% thereafter

Fiscal year beginning July 1

| \$ in Thousands | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 25.4% | 25.4% | 25.3% | 25.3% | 25.2% | 25.2% | 25.2% | 25.1% | 25.1% | 25.0% |
| Required - Chapter 356 | 33.6% | 34.2% | 34.9% | 35.6% | 36.4% | 37.4% | 38.2% | 39.1% | 40.1% | 41.3% |
| Sufficiency / (Deficiency) | (8.1%) | (8.8%) | (9.6%) | (10.3%) | (11.2%) | (12.2%) | (13.0%) | (14.0%) | (15.1%) | (16.2%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 205,282 | 212,547 | 219,502 | 227,904 | 236,017 | 244,434 | 253,167 | 262,227 | 271,602 | 281,354 |
| Required - Chapter 356 | 271,010 | 286,242 | 302,785 | 320,851 | 340,569 | 362,571 | 384,457 | 408,428 | 434,802 | 463,968 |
| Sufficiency / (Deficiency) | (65,728) | (73,695) | (83,283) | (92,947) | (104,552) | (118,137) | (131,290) | (146,201) | (163,200) | (182,614) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 5,772,047 | 5,971,433 | 6,176,364 | 6,385,731 | 6,600,490 | 6,819,621 | 7,075,702 | 7,338,266 | 7,606,750 | 7,880,726 |
| Actuarial Accrued Liability (AAL) | 7,403,295 | 7,719,797 | 8,050,132 | 8,394,360 | 8,752,946 | 9,126,079 | 9,513,764 | 9,917,074 | 10,336,143 | 10,771,327 |
| Unfunded AAL | 1,631,248 | 1,748,364 | 1,873,768 | 2,008,629 | 2,152,456 | 2,306,458 | 2,438,062 | 2,578,808 | 2,729,393 | 2,890,601 |
| Funding Ratio | 78% | 77% | 77% | 76% | 75% | 75% | 74% | 74% | 74% | 73% |
| Benefit Payments | 456,236 | 473,474 | 491,914 | 511,179 | 531,571 | 553,291 | 576,644 | 601,393 | 627,348 | 654,786 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan

Scenario: 8.0% for five years, 8.5% thereafter

Fiscal year beginning July 1

| \$ in Thousands | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 25.0% | 25.0% | 24.9% | 24.9% | 24.9% | 24.8% | 24.8% | 24.8% | 24.7% | 24.0% |
| Required - Chapter 356 | 42.6% | 44.0% | 45.7% | 47.6% | 49.8% | 52.4% | 55.5% | 59.3% | 63.9% | 69.6% |
| Sufficiency / (Deficiency) | (17.6%) | (19.1%) | (20.8%) | (22.7%) | (25.0%) | (27.6%) | (30.8%) | (34.5%) | (39.1%) | (45.6%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 291,473 | 301,970 | 312,862 | 324,162 | 335,885 | 348,048 | 360,668 | 373,760 | 387,344 | 389,902 |
| Required - Chapter 356 | 496,400 | 532,693 | 573,601 | 620,090 | 673,425 | 735,287 | 807,971 | 894,686 | 1,000,066 | 1,131,056 |
| Sufficiency / (Deficiency) | (204,927) | (230,723) | (260,739) | (295,928) | (337,540) | (387,239) | (447,303) | (520,926) | (612,722) | (741,154) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 8,159,505 | 8,442,595 | 8,729,605 | 9,019,576 | 9,311,891 | 9,606,176 | 9,902,886 | 10,202,791 | 10,506,013 | 10,812,747 |
| Actuarial Accrued Liability (AAL) | 11,222,732 | 11,690,748 | 12,175,944 | 12,678,395 | 13,198,604 | 13,737,412 | 14,296,583 | 14,878,305 | 15,484,231 | 16,116,213 |
| Unfunded AAL | 3,063,227 | 3,248,153 | 3,446,339 | 3,658,819 | 3,886,713 | 4,131,236 | 4,393,697 | 4,675,514 | 4,978,218 | 5,303,466 |
| Funding Ratio | 73% | 72% | 72% | 71% | 71% | 70% | 69% | 69% | 68% | 67% |
| Benefit Payments | 683,454 | 713,224 | 744,627 | 777,270 | 810,883 | 844,659 | 878,348 | 912,651 | 947,528 | 982,506 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan
Scenario: 8.0% for five years, 8.5% thereafter
Fiscal year beginning July 1

| \$ in Thousands | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% | 24.0% |
| Required - Chapter 356 | 77.2% | 87.2% | 101.4% | 122.6% | 158.0% | 228.9% | 441.9% | 45.8% | 47.1% | 48.5% |
| Sufficiency / (Deficiency) | (53.2%) | (63.2%) | (77.4%) | (98.6%) | (134.0%) | (204.9%) | (417.9%) | (21.8%) | (23.1%) | (24.5%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 404,523 | 419,693 | 435,432 | 451,760 | 468,701 | 486,278 | 504,513 | 523,432 | 543,061 | 563,426 |
| Required - Chapter 356 | 1,300,532 | 1,525,465 | 1,839,040 | 2,307,616 | 3,086,027 | 4,638,757 | 9,288,197 | 999,190 | 1,065,777 | 1,138,401 |
| Sufficiency / (Deficiency) | (896,009) | (1,105,772) | (1,403,608) | (1,855,856) | (2,617,326) | (4,152,479) | (8,783,684) | (475,758) | (522,716) | (574,975) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 11,112,177 | 11,415,956 | 11,725,235 | 12,041,397 | 12,366,475 | 12,701,746 | 13,047,687 | 13,404,807 | 13,773,651 | 14,154,803 |
| Actuarial Accrued Liability (AAL) | 16,776,760 | 17,468,908 | 18,195,985 | 18,961,727 | 19,770,710 | 20,626,965 | 21,533,942 | 22,495,369 | 23,515,276 | 24,598,018 |
| Unfunded AAL | 5,664,583 | 6,052,952 | 6,470,750 | 6,920,330 | 7,404,235 | 7,925,219 | 8,486,255 | 9,090,562 | 9,741,625 | 10,443,215 |
| Funding Ratio | 66% | 65% | 64% | 64% | 63% | 62% | 61% | 60% | 59% | 58% |
| Benefit Payments | | | | | | | | | | |
| | 1,017,304 | 1,051,897 | 1,086,177 | 1,119,658 | 1,153,247 | 1,187,845 | 1,223,480 | 1,260,184 | 1,297,990 | 1,336,930 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

This exhibit should only be viewed in conjunction with GRS' January 31, 2013 letter to PERA

Public Employees Police and Fire Retirement Plan

Scenario: 9.5% for Five Years, 10.0% thereafter

Fiscal year beginning July 1

| \$ in Thousands | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| Contributions (% of Payroll) | | | | | | | | | | |
| Statutory - Chapter 353 | 25.4% | 25.4% | 25.3% | 25.3% | 25.2% | 25.2% | 25.2% | 25.1% | 25.1% | 25.0% |
| Required - Chapter 356 | 33.6% | 33.5% | 33.5% | 33.4% | 33.3% | 33.3% | 33.0% | 32.7% | 32.3% | 31.8% |
| Sufficiency / (Deficiency) | (8.1%) | (8.1%) | (8.2%) | (8.1%) | (8.1%) | (8.1%) | (7.8%) | (7.5%) | (7.2%) | (6.8%) |
| Contributions | | | | | | | | | | |
| Statutory - Chapter 353 | 205,282 | 212,547 | 219,502 | 227,904 | 236,017 | 244,434 | 253,167 | 262,227 | 271,602 | 281,354 |
| Required - Chapter 356 | 271,010 | 280,714 | 290,720 | 301,065 | 311,671 | 322,833 | 332,021 | 340,992 | 349,621 | 357,750 |
| Sufficiency / (Deficiency) | (65,728) | (68,167) | (71,218) | (73,161) | (75,654) | (78,399) | (78,854) | (78,765) | (78,019) | (76,396) |
| Funding Ratios | | | | | | | | | | |
| Current Assets (MVA) | 5,772,047 | 6,056,038 | 6,356,528 | 6,673,523 | 7,009,190 | 7,363,843 | 7,774,229 | 8,210,261 | 8,673,379 | 9,165,356 |
| Actuarial Accrued Liability (AAL) | 7,403,295 | 7,719,797 | 8,050,132 | 8,394,360 | 8,752,946 | 9,126,079 | 9,513,764 | 9,917,074 | 10,336,143 | 10,771,327 |
| Unfunded AAL | 1,631,248 | 1,663,759 | 1,693,604 | 1,720,837 | 1,743,756 | 1,762,236 | 1,739,535 | 1,706,813 | 1,662,764 | 1,605,971 |
| Funding Ratio | 78% | 78% | 79% | 80% | 80% | 81% | 82% | 83% | 84% | 85% |
| Benefit Payments | 456,236 | 473,474 | 491,914 | 511,179 | 531,571 | 553,291 | 576,644 | 601,393 | 627,348 | 654,786 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

In approximately 2025, the plan's funded ratio would be over 90% assuming a 1.5% COLA but under 90% assuming a 2.5% COLA. In approximately 2030, the plan's funded ratio would be over 90% assuming a 2.5% COLA. Further guidance would be needed to determine when the COLA could increase from 1.5% to 2.5%.

**This exhibit should only be
viewed in conjunction with GRS'
January 31, 2013 letter to PERA**

Public Employees Police and Fire Retirement Plan
Scenario: 9.5% for Five Years, 10.0% thereafter
Fiscal year beginning July 1

| \$ in Thousands | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Contributions (% of Payroll) | | | | | | | | | |
| Statutory - Chapter 353 | 25.0% | 25.0% | 24.9% | 24.9% | 24.9% | 24.8% | 24.8% | 24.8% | 24.7% |
| Required - Chapter 356 | 31.3% | 30.7% | 30.0% | 29.2% | 28.2% | 27.0% | 25.6% | 23.9% | 21.7% |
| Sufficiency / (Deficiency) | (6.3%) | (5.8%) | (5.1%) | (4.3%) | (3.4%) | (2.2%) | (0.8%) | 0.9% | 3.0% |
| Contributions | | | | | | | | | |
| Statutory - Chapter 353 | 291,473 | 301,970 | 312,862 | 324,162 | 335,885 | 348,048 | 360,668 | 373,760 | 387,344 |
| Required - Chapter 356 | 365,175 | 371,632 | 376,782 | 380,177 | 381,222 | 379,107 | 372,714 | 360,457 | 340,019 |
| Sufficiency / (Deficiency) | (73,702) | (69,662) | (63,920) | (56,015) | (45,337) | (31,059) | (12,046) | 13,303 | 47,325 |
| Funding Ratios | | | | | | | | | |
| Current Assets (MVA) | 9,687,913 | 10,243,199 | 10,833,728 | 11,461,721 | 12,130,048 | 12,842,167 | 13,602,746 | 14,417,199 | 15,290,764 |
| Actuarial Accrued Liability (AAL) | 11,222,732 | 11,690,748 | 12,175,944 | 12,678,395 | 13,198,604 | 13,737,412 | 14,296,583 | 14,878,305 | 15,484,231 |
| Unfunded AAL | 1,534,819 | 1,447,549 | 1,342,216 | 1,216,674 | 1,068,556 | 895,245 | 693,837 | 461,106 | 193,467 |
| Funding Ratio | 86% | 88% | 89% | 90% | 92% | 93% | 95% | 97% | 99% |
| Benefit Payments | | | | | | | | | |
| | 683,454 | 713,224 | 744,627 | 777,270 | 810,883 | 844,659 | 878,348 | 912,651 | 947,528 |

Assumes annual postretirement increases of 1.5% for all years

Numbers may not add due to rounding

In approximately 2025, the plan's funded ratio would be over 90% assuming a 1.5% COLA but under 90% assuming a 2.5% COLA. In approximately 2030, the plan's funded ratio would be over 90% assuming a 2.5% COLA. Further guidance would be needed to determine when the COLA could increase from 1.5% to 2.5%.