Private \& Confidential<br>Ms. Mary Vanek<br>Executive Director<br>Public Employees Ret. Assoc. of MN<br>60 Empire Drive, Suite 200<br>St. Paul, MN 55103

January 31, 2012

## Subject: Projection of Contributions and Funding Status

## Dear Mary:

Attached are projection graphs showing estimated funded status, required contributions, and statutory contributions under three asset return scenarios over a 30 year period for the General Employees Retirement Plan. As required by the State of Minnesota Standards for Actuarial Work, the scenarios assume future investment return of $7.0 \%, 8.5 \%$, and $10.0 \%$. Also attached are tables showing the values graphed under each scenario. The estimates are based on valuation results as of July 1, 2011.

The estimates are based on the market value of assets with no smoothing of investment gains or losses. Normal cost is assumed to increase 3.75\% a year - the same assumption as used in the valuation for total payroll growth. In all scenarios, the valuation interest rate used to discount liabilities is $8.5 \%$ compounded annually.

Benefit payments are based on the assumptions and methods described herein with adjustments applied to estimate the impact of retiring members hired after the valuation date. To estimate this impact, beginning in 2024, we assumed benefit payments would increase a minimum of $3 \%$ ( $4.5 \%$ if the plan's funded ratio was at least $90 \%$ ).

If actuarial accrued liability exceeds assets, the unfunded actuarial accrued liability is amortized through July 1, 2031 per Minnesota Statute 356.215, Subdivision 11 (e). The statutory amortization date is assumed to be changed to July 1, 2061 once the current period expires in 2031. Per Minnesota Statute 356.215 , Subdivision 11 (I), a negative unfunded actuarial accrued liability (i.e. assets exceed liability) is amortized over a rolling 30-year period.

Based on PERA's direction, we have shown projection results with and without the contribution stabilizer defined in Minnesota Statute 352.045, summarized in the attached Exhibit A.

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Based on the operations of the stabilizer, the projected highest annual statutory contribution rate is:

| Assumed investment <br> return | Maximum Statutory <br> Contribution |
| :--- | :---: |
| $7.0 \%$ | $29.0 \%$ |
| $8.5 \%$ | $16.0 \%$ |
| $10.0 \%$ | $15.0 \%$ |

Some of these rates are significantly higher than current rates and may not be sustainable. Please be aware that lower contributions would result in markedly different projections.

## 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, post-retirement increases will revert to the $2.5 \%$ level.

We performed projections of liabilities and assets for each investment return scenario using the 2011 valuation results as a baseline assuming future experience follows the valuation assumptions.

We used an iterative process to determine the assumed date the plan reaches a $90 \%$ funded ratio. For example, for the $8.5 \%$ investment return with contribution stabilizer scenario, we found that if our liabilities and normal cost as of July 1, 2011 as well as our projected benefit payments were based on the assumption that the $2.5 \%$ COLA would be reinstated in 2027, and if we assumed investment return of $8.5 \%$ and full recognition of the contribution stabilizer, the projections would indicate the attainment of a $90 \%$ funding ratio in 2026, which is consistent with the assumption that the $2.5 \%$ COLA would be reinstated in 2027. Different results would be obtained if a different methodology were used to predict the $90 \%$ funded ratio attainment.

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Based on these assumptions and methods, the projection indicates that the funded status of this plan is expected to reach $90 \%$ according to the following timeline:

| Assumed investment <br> return |
| :--- |
| $7.0 \%$, without stabilizer Estimated date expected to <br> reach $90 \%$ funding ratio: <br> $7.0 \%$, with stabilizer $*$ <br> $8.5 \%$, without stabilizer 2031 <br> $8.5 \%$, with stabilizer 2030 <br> $10.0 \%$, without stabilizer 2026 <br> $10.0 \%$, with stabilizer 2021 |

* Fund is not projected to reach 90\% funding ratio within the 30-year projection period.

The liabilities, normal cost, and benefit payments in the attached estimates are based on the assumption that the post-retirement benefit increase will be $1 \%$ until $90 \%$ funded (indicated in the above table) and $2.5 \%$ thereafter. We relied on direction from PERA, including PERA's interpretation of applicable Minnesota Statutes, on this issue. Different results would be obtained if our projected liabilities for years before the $90 \%$ threshold were calculated using a permanent $1.0 \%$ COLA and calculated using a permanent 2.5\% COLA once the threshold was reached.

## Important Notices

Mercer has prepared this letter exclusively for the Public Employees Retirement Association to estimate the actuarial accrued liability and contribution requirements under the assumptions and plan provisions outlined in this letter. This letter may not be used or relied upon by any other party or for any other purpose; Mercer is not responsible for the consequences of any unauthorized use.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security and/or benefit-related issues should not be made on the basis of this valuation, but only after careful consideration of alternative economic, financial, demographic and societal factors, including financial scenarios that assume future sustained investment losses.

The Fund is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Mercer's actuaries have not provided any investment advice to the Fund.

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Our projections were based on the Plan's estimated financial condition at a particular point in time; it does not predict the Plan's future financial condition or its ability to pay benefits in the future and does not provide any guarantee of future financial soundness of the Plan. Over time, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the period of time over which benefits are paid, plan expenses and the amount earned on any assets invested to pay benefits. These amounts and other variables are uncertain and unknowable as of the dates the projections were completed.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of these projections. In particular, the purpose of these projections was to graphically convey concepts. Doing so does not require precision much greater than order of magnitude.

To prepare these results, actuarial assumptions, as described in our actuarial report dated November 2011 (unless noted herein), are used in a forward looking financial and demographic model to present a single scenario from a wide range of possibilities; the results based on that single scenario are included in the valuation. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. The only such analyses we were engaged to perform are the differences in projection scenarios and as such are captured in the attached files.

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Actuarial assumptions may also be changed from one valuation to the next because of changes in mandated requirements, plan experience, changes in expectations about the future and other factors. A change in assumptions is not an indication that prior assumptions were unreasonable when made.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this letter, you selected an assumption based on the expected long term rate of return on plan investments. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely "correct" level of contributions for the coming plan year.

Valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contributions not made this year, for whatever reason, including errors, remain the responsibility of the Plan sponsor and can be made in later years. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this with a view to funding the plan over time.

Data, computer coding and mathematical errors are possible in the preparation of a valuation involving complex computer programming and thousands of calculations and data inputs. Errors in projection discovered after its preparation may be corrected by amendment to the projection.

Actuarial assumptions, including discount rates, mortality tables and others identified in the valuation report, are prescribed by Minnesota Statutes Section 356.215, the requirements of the Standards of Actuarial Work established by the LCPR and the Trustees. The Fund is 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 our report dated November 2011. The Fund is solely responsible for communicating to Mercer any changes required thereto.

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To prepare these results, Mercer has used and relied on financial data and participant data supplied by the Fund and summarized in the valuation report dated November 2011. The Fund is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of the valuation date that is sufficiently comprehensive and accurate for the purposes of this report. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.

Mercer has also used and relied on the plan documents, including amendments, and interpretations of plan provisions, supplied by the Fund as summarized in the valuation report dated November 2011. The Fund is solely responsible for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the results may differ significantly from the results that would be obtained with accurate and complete information; this may require a later revision of this letter. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different results.

The Fund should notify Mercer promptly after receipt of this letter if the Fund disagrees with anything contained in this letter or is aware of any information that would affect the results that has not been communicated to Mercer or incorporated therein. The results will be deemed final and acceptable to the Fund unless the Fund promptly provides such notice to Mercer.

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## Professional qualifications

We are available to answer any questions on the material in this letter or to provide explanations or further details as appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. In addition, Mr. Dickson meets the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c). We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.

Sincerely,


Bonita J. Wurst, ASA, EA, MAAA


Gary Dickson, FSA, EA, MAAA

Enclosure
Copy: Julie Thompson, Becky Wegleitner - Mercer
The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

## Public Employees Retirement Fund

After June 30, 2010, member and employer contribution rates are adjusted as follows:

- if a contribution sufficiency of at least $1 \%$ has existed for two consecutive years, the member and employer contribution rates are decreased $0.25 \%$ each as long as the contribution rate has been in place for two consecutive years
- if a contribution deficiency of at least $0.5 \%$ has existed for two consecutive years, the member and employer contribution rates may each be increased as shown:

| Contribution <br> Deficiency | Allowable Increase in <br> Member and Employer <br> Contribution Rates |
| :--- | :---: |
| $<2 \%$ of pay | $.25 \%$ of pay |
| $2 \%$ to $4 \%$ of pay | $.50 \%$ of pay |
| $>4 \%$ of pay | $.75 \%$ of pay |

This exhibit should only be viewed in conjuction with General Employees Retirement Plan - Estimated Funding Ratio

Exhibit B Mercer's January 31, 2012


This exhibit should only be viewed in conjuction with Mercer's January 31, 2012 letter to PERA

General Employees Retirement Plan Estimated contribution rates assuming 7.0\% rate of return



This exhibit should only be
viewed in conjuction with Mercer's January 31, 2012 letter to PERA

This exhibit should only be viewed in conjuction with

General Employees Retirement Plan
Exhibit C

## Mercer's January 31, 2012

letter to PERA

Scenario: 7\% return for all years

| \$ in Thousands | July 1, 2011 | July 1, 2012 | July 1, 2013 | July 1, 2014 | July 1, 2015 | July 1, 2016 | July 1, 2017 | July 1, 2018 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 14.00\% | 14.50\% | 15.00\% | 15.50\% | 16.00\% | 16.50\% |
| Required - Chapter 356 | 14.57\% | 14.96\% | 15.38\% | 15.82\% | 16.28\% | 16.75\% | 17.24\% | 17.76\% |
| Sufficiency / (Deficiency) | -1.07\% | -1.46\% | -1.38\% | -1.32\% | -1.28\% | -1.25\% | -1.24\% | -1.26\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 700,000 | 726,000 | 781,000 | 839,000 | 901,000 | 966,000 | 1,034,000 | 1,107,000 |
| Required - Chapter 356 | 755,000 | 804,000 | 858,000 | 916,000 | 977,000 | 1,043,000 | 1,114,000 | 1,191,000 |
| Sufficiency / (Deficiency) | $(55,000)$ | $(78,000)$ | $(77,000)$ | $(77,000)$ | $(76,000)$ | $(77,000)$ | $(80,000)$ | $(84,000)$ |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 13,617,000 | 14,178,000 | 14,742,000 | 15,337,000 | 15,967,000 | 16,635,000 | 17,347,000 | 18,109,000 |
| Actuarial Accrued Liability | 18,516,000 | 19,357,000 | 20,221,000 | 21,108,000 | 22,017,000 | 22,951,000 | 23,910,000 | 24,897,000 |
| Unfunded Actuarial Accrued Liability | (4,899,000) | (5,179,000) | (5,479,000) | $(5,771,000)$ | (6,050,000) | (6,316,000) | (6,563,000) | (6,788,000) |
| Funding Ratio | 74\% | 73\% | 73\% | 73\% | 73\% | 72\% | 73\% | 73\% |
| Benefit Payments, with stabilizer | 1,066,000 | 1,127,000 | 1,189,000 | 1,254,000 | 1,320,000 | 1,388,000 | 1,455,000 | 1,522,000 |

Contributions (\% of Payroll), without stabilizer
Statutory - Chapter 352
Required - Chapter 356

| $13.50 \%$ | $13.50 \%$ | $13.50 \%$ | $13.50 \%$ | $13.50 \%$ | $13.50 \%$ | $13.50 \%$ | $13.50 \%$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| $13.23 \%$ | $13.51 \%$ | $13.82 \%$ | $14.16 \%$ | $14.55 \%$ | $15.00 \%$ | $15.51 \%$ | $16.10 \%$ |
| $0.27 \%$ | $-0.01 \%$ | $-0.32 \%$ | $-0.66 \%$ | $-1.05 \%$ | $-1.50 \%$ | $-2.01 \%$ | $-2.60 \%$ |
|  |  |  |  |  |  |  |  |
| 700,000 | 726,000 | 753,000 | 782,000 | 811,000 | 841,000 | 873,000 | 905,000 |
| 686,000 | 726,000 | 771,000 | 820,000 | 874,000 | 935,000 | $1,003,000$ | $1,080,000$ |
| 14,000 | - | $(18,000)$ | $(38,000)$ | $(63,000)$ | $(94,000)$ | $(130,000)$ | $(175,000)$ |
|  |  |  |  |  |  |  |  |
| $13,617,000$ | $14,175,000$ | $14,737,000$ | $15,300,000$ | $15,865,000$ | $16,429,000$ | $16,994,000$ | $17,560,000$ |
| $17,899,000$ | $18,663,000$ | $19,441,000$ | $20,234,000$ | $21,041,000$ | $21,862,000$ | $22,698,000$ | $23,550,000$ |
| $(4,282,000)$ | $(4,488,000)$ | $(4,704,000)$ | $(4,934,000)$ | $(5,176,000)$ | $(5,433,000)$ | $(5,704,000)$ | $(5,990,000)$ |
| $76 \%$ | $76 \%$ | $76 \%$ | $76 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ |
| $1,068,000$ | $1,129,000$ | $1,191,000$ | $1,257,000$ | $1,323,000$ | $1,391,000$ | $1,458,000$ | $1,526,000$ |

This exhibit should only be viewed in conjuction with

General Employees Retirement Plan
Exhibit C

## Mercer's January 31, 2012

letter to PERA

Scenario: 7\% return for all years

| \$ in Thousands | July 1, 2019 | July 1, 2020 | July 1, 2021 | July 1, 2022 | July 1, 2023 | July 1, 2024 | July 1, 2025 | July 1, 2026 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 17.00\% | 17.50\% | 18.00\% | 18.50\% | 19.00\% | 20.00\% | 21.00\% | 22.00\% |
| Required - Chapter 356 | 18.32\% | 18.92\% | 19.59\% | 20.35\% | 21.24\% | 22.31\% | 23.55\% | 25.10\% |
| Sufficiency / (Deficiency) | -1.32\% | -1.42\% | -1.59\% | -1.85\% | -2.24\% | -2.31\% | -2.55\% | -3.10\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,183,000 | 1,263,000 | 1,348,000 | 1,438,000 | 1,532,000 | 1,673,000 | 1,823,000 | 1,981,000 |
| Required - Chapter 356 | 1,275,000 | 1,366,000 | 1,468,000 | 1,582,000 | 1,713,000 | 1,866,000 | 2,044,000 | 2,260,000 |
| Sufficiency / (Deficiency) | $(92,000)$ | $(103,000)$ | $(120,000)$ | $(144,000)$ | $(181,000)$ | $(193,000)$ | $(221,000)$ | $(279,000)$ |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 18,929,000 | 19,816,000 | 20,784,000 | 21,845,000 | 23,011,000 | 24,297,000 | 25,762,000 | 27,425,000 |
| Actuarial Accrued Liability | 25,915,000 | 26,971,000 | 28,069,000 | 29,219,000 | 30,425,000 | 31,697,000 | 33,042,000 | 34,465,000 |
| Unfunded Actuarial Accrued Liability | $(6,986,000)$ | $(7,155,000)$ | $(7,285,000)$ | (7,374,000) | $(7,414,000)$ | $(7,400,000)$ | $(7,280,000)$ | (7,040,000) |
| Funding Ratio | 73\% | 73\% | 74\% | 75\% | 76\% | 77\% | 78\% | 80\% |
| Benefit Payments, with stabilizer | 1,588,000 | 1,650,000 | 1,710,000 | 1,769,000 | 1,825,000 | 1,880,000 | 1,936,000 | 1,994,000 |

Contributions (\% of Payroll), without stabilizeI
Statutory - Chapter 352
Required - Chapter 356

This exhibit should only be viewed in conjuction with

General Employees Retirement Plan
Exhibit C

## Mercer's January 31, 2012

letter to PERA

## Scenario: 7\% return for all years

| \$ in Thousands | July 1, 2027 | July 1, 2028 | July 1, 2029 | July 1, 2030 | July 1, 2031 | July 1, 2032 | July 1, 2033 | July 1, 2034 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 23.00\% | 24.50\% | 26.00\% | 27.50\% | 29.00\% | 29.00\% | 28.50\% | 28.50\% |
| Required - Chapter 356 | 27.17\% | 30.32\% | 35.90\% | 51.28\% | 9.05\% | 8.12\% | 7.15\% | 6.19\% |
| Sufficiency / (Deficiency) | -4.17\% | -5.82\% | -9.90\% | -23.78\% | 19.95\% | 20.88\% | 21.35\% | 22.31\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 2,149,000 | 2,375,000 | 2,615,000 | 2,869,000 | 3,139,000 | 3,257,000 | 3,321,000 | 3,445,000 |
| Required - Chapter 356 | 2,538,000 | 2,938,000 | 3,610,000 | 5,350,000 | 980,000 | 912,000 | 833,000 | 748,000 |
| Sufficiency / (Deficiency) | $(389,000)$ | $(563,000)$ | $(995,000)$ | $(2,481,000)$ | 2,159,000 | 2,345,000 | 2,488,000 | 2,697,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 29,308,000 | 31,433,000 | 33,877,000 | 36,673,000 | 39,859,000 | 43,477,000 | 47,362,000 | 51,471,000 |
| Actuarial Accrued Liability | 35,973,000 | 37,572,000 | 39,267,000 | 41,067,000 | 42,979,000 | 45,013,000 | 47,140,000 | 49,365,000 |
| Unfunded Actuarial Accrued Liability | $(6,665,000)$ | $(6,139,000)$ | (5,390,000) | $(4,394,000)$ | $(3,120,000)$ | $(1,536,000)$ | 222,000 | 2,106,000 |
| Funding Ratio | 81\% | 84\% | 86\% | 89\% | 93\% | 97\% | 100\% | 104\% |
| Benefit Payments, with stabilizer | 2,054,000 | 2,115,000 | 2,179,000 | 2,245,000 | 2,312,000 | 2,416,000 | 2,525,000 | 2,638,000 |
| Contributions (\% of Payroll), without stabilizeI |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 34.87\% | 43.93\% | 62.07\% | 116.49\% | 13.44\% | 13.65\% | 13.89\% | 14.14\% |
| Sufficiency / (Deficiency) | -21.37\% | -30.43\% | -48.57\% | -102.99\% | 0.06\% | -0.15\% | -0.39\% | -0.64\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,261,000 | 1,308,000 | 1,358,000 | 1,408,000 | 1,461,000 | 1,516,000 | 1,573,000 | 1,632,000 |
| Required - Chapter 356 | 3,258,000 | 4,258,000 | 6,241,000 | 12,154,000 | 1,455,000 | 1,533,000 | 1,618,000 | 1,709,000 |
| Sufficiency / (Deficiency) | $(1,997,000)$ | $(2,950,000)$ | $(4,883,000)$ | $(10,746,000)$ | 6,000 | $(17,000)$ | $(45,000)$ | $(77,000)$ |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 23,306,000 | 24,088,000 | 24,909,000 | 25,771,000 | 26,678,000 | 27,632,000 | 28,637,000 | 29,696,000 |
| Actuarial Accrued Liability | 32,689,000 | 33,963,000 | 35,304,000 | 36,719,000 | 38,211,000 | 39,787,000 | 41,452,000 | 43,213,000 |
| Unfunded Actuarial Accrued Liability | $(9,383,000)$ | $(9,875,000)$ | $(10,395,000)$ | (10,948,000) | $(11,533,000)$ | $(12,155,000)$ | $(12,815,000)$ | $(13,517,000)$ |
| Funding Ratio | 71\% | 71\% | 71\% | 70\% | 70\% | 69\% | 69\% | 69\% |
| Benefit Payments, without stabilizer | 2,058,000 | 2,120,000 | 2,184,000 | 2,249,000 | 2,317,000 | 2,386,000 | 2,458,000 | 2,531,000 |

This exhibit should only be viewed in conjuction with

General Employees Retirement Plan

# Mercer's January 31, 2012 

letter to PERA

## Scenario: 7\% return for all years

| \$ in Thousands | July 1, 2035 | July 1, 2036 | July 1, 2037 | July 1, 2038 | July 1, 2039 | July 1, 2040 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 28.00\% | 28.00\% | 27.50\% | 27.50\% | 27.00\% | 27.00\% |
| Required - Chapter 356 | 5.20\% | 4.22\% | 3.20\% | 2.20\% | 1.16\% | 0.12\% |
| Sufficiency / (Deficiency) | 22.80\% | 23.78\% | 24.30\% | 25.30\% | 25.84\% | 26.88\% |
| Contributions, with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 3,512,000 | 3,643,000 | 3,712,000 | 3,852,000 | 3,923,000 | 4,071,000 |
| Required - Chapter 356 | 652,000 | 548,000 | 433,000 | 307,000 | 168,000 | 19,000 |
| Sufficiency / (Deficiency) | 2,860,000 | 3,095,000 | 3,279,000 | 3,545,000 | 3,755,000 | 4,052,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 55,877,000 | 60,537,000 | 65,530,000 | 70,808,000 | 76,458,000 | 82,430,000 |
| Actuarial Accrued Liability | 51,693,000 | 54,128,000 | 56,675,000 | 59,339,000 | 62,125,000 | 65,038,000 |
| Unfunded Actuarial Accrued Liability | 4,184,000 | 6,409,000 | 8,855,000 | 11,469,000 | 14,333,000 | 17,392,000 |
| Funding Ratio | 108\% | 112\% | 116\% | 119\% | 123\% | 127\% |
| Benefit Payments, with stabilizer | 2,757,000 | 2,881,000 | 3,011,000 | 3,146,000 | 3,288,000 | 3,386,000 |
| Contributions (\% of Payroll), without stabilizeı |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 14.41\% | 14.71\% | 15.03\% | 15.39\% | 15.78\% | 16.21\% |
| Sufficiency / (Deficiency) | -0.91\% | -1.21\% | -1.53\% | -1.89\% | -2.28\% | -2.71\% |
| Contributions, without stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,693,000 | 1,757,000 | 1,822,000 | 1,891,000 | 1,962,000 | 2,035,000 |
| Required - Chapter 356 | 1,807,000 | 1,913,000 | 2,029,000 | 2,155,000 | 2,293,000 | 2,444,000 |
| Sufficiency / (Deficiency) | $(114,000)$ | $(156,000)$ | $(207,000)$ | $(264,000)$ | $(331,000)$ | $(409,000)$ |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 30,813,000 | 31,991,000 | 33,236,000 | 34,551,000 | 35,942,000 | 37,414,000 |
| Actuarial Accrued Liability | 45,076,000 | 47,051,000 | 49,143,000 | 51,364,000 | 53,721,000 | 56,226,000 |
| Unfunded Actuarial Accrued Liability | $(14,263,000)$ | $(15,060,000)$ | $(15,907,000)$ | $(16,813,000)$ | $(17,779,000)$ | $(18,812,000)$ |
| Funding Ratio | 68\% | 68\% | 68\% | 67\% | 67\% | 67\% |
| Benefit Payments, without stabilizer | 2,607,000 | 2,685,000 | 2,766,000 | 2,849,000 | 2,934,000 | 3,023,000 |

This exhibit should only be
General Employees Retirement Plan
Exhibit C
viewed in conjuction with
Mercer's January 31, 2012
letter to PERA

## Scenario: 8.5\% return for all years

| \$ in Thousands | July 1, 2011 | July 1, 2012 | July 1, 2013 | July 1, 2014 | July 1, 2015 | July 1, 2016 | July 1, 2017 | July 1, 2018 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 14.00\% | 14.50\% | 15.00\% | 15.00\% | 15.00\% | 15.00\% |
| Required - Chapter 356 | 14.97\% | 15.09\% | 15.21\% | 15.32\% | 15.39\% | 15.42\% | 15.46\% | 15.50\% |
| Sufficiency / (Deficiency) | -1.47\% | -1.59\% | -1.21\% | -0.82\% | -0.39\% | -0.42\% | -0.46\% | -0.50\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 700,000 | 726,000 | 781,000 | 839,000 | 901,000 | 935,000 | 970,000 | 1,006,000 |
| Required - Chapter 356 | 776,000 | 811,000 | 849,000 | 887,000 | 924,000 | 961,000 | 999,000 | 1,040,000 |
| Sufficiency / (Deficiency) | $(76,000)$ | $(85,000)$ | $(68,000)$ | $(48,000)$ | $(23,000)$ | $(26,000)$ | $(29,000)$ | $(34,000)$ |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 13,617,000 | 14,379,000 | 15,169,000 | 16,018,000 | 16,932,000 | 17,917,000 | 18,951,000 | 20,038,000 |
| Actuarial Accrued Liability | 18,725,000 | 19,588,000 | 20,476,000 | 21,390,000 | 22,329,000 | 23,294,000 | 24,288,000 | 25,313,000 |
| Unfunded Actuarial Accrued Liability | $(5,108,000)$ | $(5,209,000)$ | $(5,307,000)$ | (5,372,000) | $(5,397,000)$ | (5,377,000) | $(5,337,000)$ | $(5,275,000)$ |
| Funding Ratio | 73\% | 73\% | 74\% | 75\% | 76\% | 77\% | 78\% | 79\% |
| Benefit Payments, with stabilizer | 1,066,000 | 1,127,000 | 1,189,000 | 1,254,000 | 1,320,000 | 1,388,000 | 1,455,000 | 1,522,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 14.57\% | 14.66\% | 14.75\% | 14.86\% | 14.98\% | 15.11\% | 15.27\% | 15.45\% |
| Sufficiency / (Deficiency) | -1.07\% | -1.16\% | -1.25\% | -1.36\% | -1.48\% | -1.61\% | -1.77\% | -1.95\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 700,000 | 726,000 | 753,000 | 782,000 | 811,000 | 841,000 | 873,000 | 905,000 |
| Required - Chapter 356 | 755,000 | 788,000 | 823,000 | 860,000 | 899,000 | 942,000 | 987,000 | 1,036,000 |
| Sufficiency / (Deficiency) | $(55,000)$ | $(62,000)$ | $(70,000)$ | $(78,000)$ | $(88,000)$ | $(101,000)$ | $(114,000)$ | $(131,000)$ |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 13,617,000 | 14,379,000 | 15,168,000 | 15,989,000 | 16,839,000 | 17,723,000 | 18,643,000 | 19,602,000 |
| Actuarial Accrued Liability | 18,516,000 | 19,357,000 | 20,221,000 | 21,108,000 | 22,017,000 | 22,951,000 | 23,910,000 | 24,897,000 |
| Unfunded Actuarial Accrued Liability | $(4,899,000)$ | $(4,978,000)$ | (5,053,000) | (5,119,000) | (5,178,000) | $(5,228,000)$ | (5,267,000) | (5,295,000) |
| Funding Ratio | 74\% | 74\% | 75\% | 76\% | 76\% | 77\% | 78\% | 79\% |
| Benefit Payments, without stabilizer | 1,066,000 | 1,127,000 | 1,189,000 | 1,254,000 | 1,320,000 | 1,388,000 | 1,455,000 | 1,522,000 |

This exhibit should only be viewed in conjuction with
Mercer's January 31, 2012
letter to PERA

## General Employees Retirement Plan

Exhibit C

## Scenario: 8.5\% return for all years

| \$ in Thousands | July 1, 2019 | July 1, 2020 | July 1, 2021 | July 1, 2022 | July 1, 2023 | July 1, 2024 | July 1, 2025 | July 1, 2026 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 15.00\% | 15.50\% | 15.50\% | 15.50\% | 15.50\% | 15.50\% | 15.50\% | 15.50\% |
| Required - Chapter 356 | 15.56\% | 15.62\% | 15.63\% | 15.64\% | 15.66\% | 15.68\% | 15.71\% | 15.75\% |
| Sufficiency / (Deficiency) | -0.56\% | -0.12\% | -0.13\% | -0.14\% | -0.16\% | -0.18\% | -0.21\% | -0.25\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,044,000 | 1,119,000 | 1,161,000 | 1,205,000 | 1,250,000 | 1,297,000 | 1,345,000 | 1,396,000 |
| Required - Chapter 356 | 1,083,000 | 1,128,000 | 1,171,000 | 1,216,000 | 1,263,000 | 1,312,000 | 1,363,000 | 1,418,000 |
| Sufficiency / (Deficiency) | $(39,000)$ | $(9,000)$ | $(10,000)$ | $(11,000)$ | $(13,000)$ | $(15,000)$ | $(18,000)$ | $(22,000)$ |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 21,184,000 | 22,398,000 | 23,728,000 | 25,152,000 | 26,679,000 | 28,325,000 | 30,073,000 | 31,930,000 |
| Actuarial Accrued Liability | 26,372,000 | 27,473,000 | 28,621,000 | 29,823,000 | 31,088,000 | 32,423,000 | 33,809,000 | 35,246,000 |
| Unfunded Actuarial Accrued Liability | $(5,188,000)$ | $(5,075,000)$ | $(4,893,000)$ | $(4,671,000)$ | $(4,409,000)$ | $(4,098,000)$ | $(3,736,000)$ | $(3,316,000)$ |
| Funding Ratio | 80\% | 82\% | 83\% | 84\% | 86\% | 87\% | 89\% | 91\% |
| Benefit Payments, with stabilizer | 1,588,000 | 1,650,000 | 1,710,000 | 1,769,000 | 1,825,000 | 1,907,000 | 1,993,000 | 2,082,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 15.66\% | 15.91\% | 16.22\% | 16.59\% | 17.05\% | 17.65\% | 18.46\% | 19.58\% |
| Sufficiency / (Deficiency) | -2.16\% | -2.41\% | -2.72\% | -3.09\% | -3.55\% | -4.15\% | -4.96\% | -6.08\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 939,000 | 975,000 | 1,011,000 | 1,049,000 | 1,088,000 | 1,129,000 | 1,172,000 | 1,216,000 |
| Required - Chapter 356 | 1,090,000 | 1,149,000 | 1,215,000 | 1,289,000 | 1,375,000 | 1,477,000 | 1,602,000 | 1,763,000 |
| Sufficiency / (Deficiency) | $(151,000)$ | $(174,000)$ | $(204,000)$ | $(240,000)$ | $(287,000)$ | $(348,000)$ | $(430,000)$ | $(547,000)$ |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 20,607,000 | 21,663,000 | 22,780,000 | 23,967,000 | 25,232,000 | 26,586,000 | 28,041,000 | 29,604,000 |
| Actuarial Accrued Liability | 25,915,000 | 26,971,000 | 28,069,000 | 29,219,000 | 30,425,000 | 31,697,000 | 33,042,000 | 34,465,000 |
| Unfunded Actuarial Accrued Liability | $(5,308,000)$ | $(5,308,000)$ | $(5,289,000)$ | $(5,252,000)$ | $(5,193,000)$ | $(5,111,000)$ | $(5,001,000)$ | $(4,861,000)$ |
| Funding Ratio | 80\% | 80\% | 81\% | 82\% | 83\% | 84\% | 85\% | 86\% |
| Benefit Payments, without stabilizer | 1,588,000 | 1,650,000 | 1,710,000 | 1,769,000 | 1,825,000 | 1,880,000 | 1,936,000 | 1,994,000 |

This exhibit should only be viewed in conjuction with
Mercer's January 31, 2012
letter to PERA

## General Employees Retirement Plan

Exhibit C

## Scenario: 8.5\% return for all years

| \$ in Thousands | July 1, 2027 | July 1, 2028 | July 1, 2029 | July 1, 2030 | July 1, 2031 | July 1, 2032 | July 1, 2033 | July 1, 2034 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 15.50\% | 15.50\% | 15.50\% | 15.50\% | 16.00\% | 16.00\% | 15.50\% | 15.50\% |
| Required - Chapter 356 | 15.81\% | 15.91\% | 16.11\% | 16.72\% | 7.42\% | 6.89\% | 6.33\% | 5.78\% |
| Sufficiency / (Deficiency) | -0.31\% | -0.41\% | -0.61\% | -1.22\% | 8.58\% | 9.11\% | 9.17\% | 9.72\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,448,000 | 1,502,000 | 1,559,000 | 1,617,000 | 1,732,000 | 1,797,000 | 1,806,000 | 1,874,000 |
| Required - Chapter 356 | 1,477,000 | 1,542,000 | 1,620,000 | 1,744,000 | 803,000 | 774,000 | 737,000 | 698,000 |
| Sufficiency / (Deficiency) | $(29,000)$ | $(40,000)$ | $(61,000)$ | $(127,000)$ | 929,000 | 1,023,000 | 1,069,000 | 1,176,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 33,903,000 | 36,000,000 | 38,228,000 | 40,596,000 | 43,114,000 | 45,849,000 | 48,760,000 | 51,800,000 |
| Actuarial Accrued Liability | 36,735,000 | 38,279,000 | 39,877,000 | 41,531,000 | 43,243,000 | 45,011,000 | 46,839,000 | 48,725,000 |
| Unfunded Actuarial Accrued Liability | $(2,832,000)$ | $(2,279,000)$ | $(1,649,000)$ | $(935,000)$ | $(129,000)$ | 838,000 | 1,921,000 | 3,075,000 |
| Funding Ratio | 92\% | 94\% | 96\% | 98\% | 100\% | 102\% | 104\% | 106\% |
| Benefit Payments, with stabilizer | 2,176,000 | 2,274,000 | 2,376,000 | 2,483,000 | 2,595,000 | 2,712,000 | 2,834,000 | 2,961,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 21.27\% | 24.09\% | 29.74\% | 46.71\% | 9.32\% | 9.06\% | 8.77\% | 8.46\% |
| Sufficiency / (Deficiency) | -7.77\% | -10.59\% | -16.24\% | -33.21\% | 4.18\% | 4.44\% | 4.73\% | 5.04\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,261,000 | 1,308,000 | 1,358,000 | 1,408,000 | 1,461,000 | 1,516,000 | 1,573,000 | 1,632,000 |
| Required - Chapter 356 | 1,987,000 | 2,335,000 | 2,991,000 | 4,873,000 | 1,009,000 | 1,017,000 | 1,022,000 | 1,023,000 |
| Sufficiency / (Deficiency) | $(726,000)$ | $(1,027,000)$ | $(1,633,000)$ | $(3,465,000)$ | 452,000 | 499,000 | 551,000 | 609,000 |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 31,283,000 | 33,090,000 | 35,035,000 | 37,129,000 | 39,385,000 | 41,816,000 | 44,401,000 | 47,151,000 |
| Actuarial Accrued Liability | 35,973,000 | 37,572,000 | 39,267,000 | 41,067,000 | 42,979,000 | 45,013,000 | 47,140,000 | 49,365,000 |
| Unfunded Actuarial Accrued Liability | $(4,690,000)$ | $(4,482,000)$ | $(4,232,000)$ | $(3,938,000)$ | $(3,594,000)$ | $(3,197,000)$ | $(2,739,000)$ | $(2,214,000)$ |
| Funding Ratio | 87\% | 88\% | 89\% | 90\% | 92\% | 93\% | 94\% | 96\% |
| Benefit Payments, without stabilizer | 2,054,000 | 2,115,000 | 2,179,000 | 2,245,000 | 2,312,000 | 2,416,000 | 2,525,000 | 2,638,000 |

This exhibit should only be
General Employees Retirement Plan

## Mercer's January 31, 2012

letter to PERA

## Scenario: 8.5\% return for all years

| \$ in Thousands | July 1, 2035 | July 1, 2036 | July 1, 2037 | July 1, 2038 | July 1, 2039 | July 1, 2040 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 15.00\% | 15.00\% | 14.50\% | 14.50\% | 14.00\% | 14.00\% |
| Required - Chapter 356 | 5.20\% | 4.62\% | 4.02\% | 3.42\% | 2.80\% | 2.18\% |
| Sufficiency / (Deficiency) | 9.80\% | 10.38\% | 10.48\% | 11.08\% | 11.20\% | 11.82\% |
| Contributions, with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,881,000 | 1,952,000 | 1,957,000 | 2,031,000 | 2,034,000 | 2,111,000 |
| Required - Chapter 356 | 652,000 | 601,000 | 543,000 | 479,000 | 407,000 | 328,000 |
| Sufficiency / (Deficiency) | 1,229,000 | 1,351,000 | 1,414,000 | 1,552,000 | 1,627,000 | 1,783,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 55,034,000 | 58,411,000 | 62,002,000 | 65,751,000 | 69,735,000 | 73,894,000 |
| Actuarial Accrued Liability | 50,671,000 | 52,677,000 | 54,743,000 | 56,869,000 | 59,054,000 | 61,298,000 |
| Unfunded Actuarial Accrued Liability | 4,363,000 | 5,734,000 | 7,259,000 | 8,882,000 | 10,681,000 | 12,596,000 |
| Funding Ratio | 109\% | 111\% | 113\% | 116\% | 118\% | 121\% |
| Benefit Payments, with stabilizer | 3,095,000 | 3,234,000 | 3,380,000 | 3,532,000 | 3,691,000 | 3,857,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 8.12\% | 7.75\% | 7.35\% | 6.96\% | 6.56\% | 6.14\% |
| Sufficiency / (Deficiency) | 5.38\% | 5.75\% | 6.15\% | 6.54\% | 6.94\% | 7.36\% |
| Contributions, without stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,693,000 | 1,757,000 | 1,822,000 | 1,891,000 | 1,962,000 | 2,035,000 |
| Required - Chapter 356 | 1,019,000 | 1,009,000 | 993,000 | 975,000 | 953,000 | 925,000 |
| Sufficiency / (Deficiency) | 674,000 | 748,000 | 829,000 | 916,000 | 1,009,000 | 1,110,000 |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 50,077,000 | 53,190,000 | 56,503,000 | 60,029,000 | 63,784,000 | 67,783,000 |
| Actuarial Accrued Liability | 51,693,000 | 54,128,000 | 56,675,000 | 59,339,000 | 62,125,000 | 65,038,000 |
| Unfunded Actuarial Accrued Liability | $(1,616,000)$ | $(938,000)$ | $(172,000)$ | 690,000 | 1,659,000 | 2,745,000 |
| Funding Ratio | 97\% | 98\% | 100\% | 101\% | 103\% | 104\% |
| Benefit Payments, without stabilizer | 2,757,000 | 2,881,000 | 3,011,000 | 3,146,000 | 3,288,000 | 3,436,000 |

This exhibit should only be
General Employees Retirement Plan
Exhibit C
viewed in conjuction with
Mercer's January 31, 2012
letter to PERA

## Scenario: 10\% return for all years

| \$ in Thousands | July 1, 2011 | July 1, 2012 | July 1, 2013 | July 1, 2014 | July 1, 2015 | July 1, 2016 | July 1, 2017 | July 1, 2018 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 14.00\% | 14.50\% | 15.00\% | 15.00\% | 15.00\% | 15.00\% |
| Required - Chapter 356 | 15.61\% | 15.47\% | 15.32\% | 15.09\% | 14.77\% | 14.35\% | 13.85\% | 13.25\% |
| Sufficiency / (Deficiency) | -2.11\% | -1.97\% | -1.32\% | -0.59\% | 0.23\% | 0.65\% | 1.15\% | 1.75\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 700,000 | 726,000 | 781,000 | 839,000 | 901,000 | 935,000 | 970,000 | 1,006,000 |
| Required - Chapter 356 | 809,000 | 832,000 | 855,000 | 873,000 | 887,000 | 894,000 | 895,000 | 889,000 |
| Sufficiency / (Deficiency) | $(109,000)$ | $(106,000)$ | $(74,000)$ | $(34,000)$ | 14,000 | 41,000 | 75,000 | 117,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 13,617,000 | 14,579,000 | 15,604,000 | 16,723,000 | 17,949,000 | 19,295,000 | 20,743,000 | 22,304,000 |
| Actuarial Accrued Liability | 19,074,000 | 19,974,000 | 20,904,000 | 21,863,000 | 22,855,000 | 23,880,000 | 24,943,000 | 26,047,000 |
| Unfunded Actuarial Accrued Liability | $(5,457,000)$ | $(5,395,000)$ | (5,300,000) | $(5,140,000)$ | $(4,906,000)$ | $(4,585,000)$ | $(4,200,000)$ | $(3,743,000)$ |
| Funding Ratio | 71\% | 73\% | 75\% | 76\% | 79\% | 81\% | 83\% | 86\% |
| Benefit Payments, with stabilizer | 1,066,000 | 1,124,000 | 1,186,000 | 1,249,000 | 1,312,000 | 1,376,000 | 1,440,000 | 1,502,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 15.44\% | 15.29\% | 15.12\% | 14.91\% | 14.67\% | 14.38\% | 14.04\% | 13.63\% |
| Sufficiency / (Deficiency) | -1.94\% | -1.79\% | -1.62\% | -1.41\% | -1.17\% | -0.88\% | -0.54\% | -0.13\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 700,000 | 726,000 | 753,000 | 782,000 | 811,000 | 841,000 | 873,000 | 905,000 |
| Required - Chapter 356 | 800,000 | 822,000 | 844,000 | 863,000 | 881,000 | 896,000 | 908,000 | 914,000 |
| Sufficiency / (Deficiency) | $(100,000)$ | $(96,000)$ | $(91,000)$ | $(81,000)$ | $(70,000)$ | $(55,000)$ | $(35,000)$ | $(9,000)$ |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 13,617,000 | 14,579,000 | 15,604,000 | 16,694,000 | 17,856,000 | 19,098,000 | 20,428,000 | 21,856,000 |
| Actuarial Accrued Liability | 18,979,000 | 19,869,000 | 20,789,000 | 21,737,000 | 22,716,000 | 23,727,000 | 24,775,000 | 25,863,000 |
| Unfunded Actuarial Accrued Liability | (5,362,000) | $(5,290,000)$ | (5,185,000) | (5,043,000) | (4,860,000) | $(4,629,000)$ | (4,347,000) | $(4,007,000)$ |
| Funding Ratio | 72\% | 73\% | 75\% | 77\% | 79\% | 80\% | 82\% | 85\% |
| Benefit Payments, without stabilizer | 1,066,000 | 1,124,000 | 1,186,000 | 1,249,000 | 1,312,000 | 1,376,000 | 1,440,000 | 1,502,000 |

This exhibit should only be viewed in conjuction with

## Mercer's January 31, 2012

letter to PERA

## General Employees Retirement Plan

## Scenario: 10\% return for all years

| \$ in Thousands | July 1, 2019 | July 1, 2020 | July 1, 2021 | July 1, 2022 | July 1, 2023 | July 1, 2024 | July 1, 2025 | July 1, 2026 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 14.50\% | 14.50\% | 14.00\% | 14.00\% | 13.50\% | 13.50\% | 13.00\% | 13.00\% |
| Required - Chapter 356 | 12.53\% | 11.72\% | 10.71\% | 9.53\% | 8.02\% | 6.97\% | 6.21\% | 5.44\% |
| Sufficiency / (Deficiency) | 1.97\% | 2.78\% | 3.29\% | 4.47\% | 5.48\% | 6.53\% | 6.79\% | 7.56\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,009,000 | 1,047,000 | 1,049,000 | 1,088,000 | 1,088,000 | 1,129,000 | 1,128,000 | 1,171,000 |
| Required - Chapter 356 | 872,000 | 846,000 | 803,000 | 741,000 | 646,000 | 583,000 | 539,000 | 489,000 |
| Sufficiency / (Deficiency) | 137,000 | 201,000 | 246,000 | 347,000 | 442,000 | 546,000 | 589,000 | 682,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 23,995,000 | 25,794,000 | 27,739,000 | 29,797,000 | 32,020,000 | 34,381,000 | 36,931,000 | 39,642,000 |
| Actuarial Accrued Liability | 27,198,000 | 28,405,000 | 29,661,000 | 30,962,000 | 32,314,000 | 33,718,000 | 35,178,000 | 36,693,000 |
| Unfunded Actuarial Accrued Liability | $(3,203,000)$ | $(2,611,000)$ | $(1,922,000)$ | $(1,165,000)$ | $(294,000)$ | 663,000 | 1,753,000 | 2,949,000 |
| Funding Ratio | 88\% | 91\% | 94\% | 96\% | 99\% | 102\% | 105\% | 108\% |
| Benefit Payments, with stabilizer | 1,561,000 | 1,631,000 | 1,710,000 | 1,787,000 | 1,867,000 | 1,951,000 | 2,039,000 | 2,131,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 13.13\% | 12.52\% | 11.77\% | 10.82\% | 9.61\% | 8.01\% | 6.93\% | 6.17\% |
| Sufficiency / (Deficiency) | 0.37\% | 0.98\% | 1.73\% | 2.68\% | 3.89\% | 5.49\% | 6.57\% | 7.33\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 939,000 | 975,000 | 1,011,000 | 1,049,000 | 1,088,000 | 1,129,000 | 1,172,000 | 1,216,000 |
| Required - Chapter 356 | 914,000 | 904,000 | 882,000 | 841,000 | 775,000 | 670,000 | 601,000 | 555,000 |
| Sufficiency / (Deficiency) | 25,000 | 71,000 | 129,000 | 208,000 | 313,000 | 459,000 | 571,000 | 661,000 |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 23,396,000 | 25,063,000 | 26,873,000 | 28,829,000 | 30,938,000 | 33,216,000 | 35,676,000 | 38,335,000 |
| Actuarial Accrued Liability | 26,998,000 | 28,186,000 | 29,434,000 | 30,737,000 | 32,092,000 | 33,500,000 | 34,965,000 | 36,487,000 |
| Unfunded Actuarial Accrued Liability | $(3,602,000)$ | $(3,123,000)$ | $(2,561,000)$ | $(1,908,000)$ | $(1,154,000)$ | $(284,000)$ | 711,000 | 1,848,000 |
| Funding Ratio | 87\% | 89\% | 91\% | 94\% | 96\% | 99\% | 102\% | 105\% |
| Benefit Payments, without stabilizer | 1,561,000 | 1,618,000 | 1,687,000 | 1,764,000 | 1,843,000 | 1,926,000 | 2,013,000 | 2,103,000 |
| Not all numbers may add due to rounding |  |  |  |  |  |  |  | C-10 |

This exhibit should only be
General Employees Retirement Plan
Exhibit C
viewed in conjuction with

## Mercer's January 31, 2012

letter to PERA

## Scenario: 10\% return for all years

| \$ in Thousands | July 1, 2027 | July 1, 2028 | July 1, 2029 | July 1, 2030 | July 1, 2031 | July 1, 2032 | July 1, 2033 | July 1, 2034 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 12.50\% | 12.50\% | 12.00\% | 12.00\% | 11.50\% | 11.50\% | 11.00\% | 11.00\% |
| Required - Chapter 356 | 4.61\% | 3.76\% | 2.87\% | 1.94\% | 0.96\% | -0.05\% | -1.12\% | -2.22\% |
| Sufficiency / (Deficiency) | 7.89\% | 8.74\% | 9.13\% | 10.06\% | 10.54\% | 11.55\% | 12.12\% | 13.22\% |
| Contributions, with stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,168,000 | 1,212,000 | 1,207,000 | 1,252,000 | 1,245,000 | 1,291,000 | 1,282,000 | 1,330,000 |
| Required - Chapter 356 | 431,000 | 365,000 | 288,000 | 203,000 | 104,000 | $(5,000)$ | $(130,000)$ | $(269,000)$ |
| Sufficiency / (Deficiency) | 737,000 | 847,000 | 919,000 | 1,049,000 | 1,141,000 | 1,296,000 | 1,412,000 | 1,599,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 42,571,000 | 45,689,000 | 49,057,000 | 52,647,000 | 56,527,000 | 60,666,000 | 65,141,000 | 69,921,000 |
| Actuarial Accrued Liability | 38,266,000 | 39,898,000 | 41,590,000 | 43,344,000 | 45,161,000 | 47,043,000 | 48,991,000 | 51,005,000 |
| Unfunded Actuarial Accrued Liability | 4,305,000 | 5,791,000 | 7,467,000 | 9,303,000 | 11,366,000 | 13,623,000 | 16,150,000 | 18,916,000 |
| Funding Ratio | 111\% | 115\% | 118\% | 121\% | 125\% | 129\% | 133\% | 137\% |
| Benefit Payments, with stabilizer | 2,227,000 | 2,327,000 | 2,432,000 | 2,541,000 | 2,655,000 | 2,775,000 | 2,900,000 | 3,030,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | 5.35\% | 4.49\% | 3.58\% | 2.60\% | 1.57\% | 0.47\% | -0.69\% | -1.93\% |
| Sufficiency / (Deficiency) | 8.15\% | 9.01\% | 9.92\% | 10.90\% | 11.93\% | 13.03\% | 14.19\% | 15.43\% |
| Contributions, without stabilizer |  |  |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,261,000 | 1,308,000 | 1,358,000 | 1,408,000 | 1,461,000 | 1,516,000 | 1,573,000 | 1,632,000 |
| Required - Chapter 356 | 500,000 | 435,000 | 360,000 | 272,000 | 170,000 | 53,000 | $(81,000)$ | $(233,000)$ |
| Sufficiency / (Deficiency) | 761,000 | 873,000 | 998,000 | 1,136,000 | 1,291,000 | 1,463,000 | 1,654,000 | 1,865,000 |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |  |  |
| Current Assets (MVA) | 41,209,000 | 44,318,000 | 47,683,000 | 51,327,000 | 55,273,000 | 59,550,000 | 64,187,000 | 69,216,000 |
| Actuarial Accrued Liability | 38,068,000 | 39,710,000 | 41,415,000 | 43,184,000 | 45,018,000 | 46,921,000 | 48,892,000 | 50,933,000 |
| Unfunded Actuarial Accrued Liability | 3,141,000 | 4,608,000 | 6,268,000 | 8,143,000 | 10,255,000 | 12,629,000 | 15,295,000 | 18,283,000 |
| Funding Ratio | 108\% | 112\% | 115\% | 119\% | 123\% | 127\% | 131\% | 136\% |
| Benefit Payments, without stabilizer | 2,198,000 | 2,297,000 | 2,400,000 | 2,508,000 | 2,621,000 | 2,739,000 | 2,863,000 | 2,991,000 |
| Not all numbers may add due to rounding |  |  |  |  |  |  |  | C-11 |

This exhibit should only be
General Employees Retirement Plan

## ercer's January 31, 2012

letter to PERA

## Scenario: 10\% return for all years

| \$ in Thousands | July 1, 2035 | July 1, 2036 | July 1, 2037 | July 1, 2038 | July 1, 2039 | July 1, 2040 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contributions (\% of Payroll), with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 10.50\% | 10.50\% | 10.00\% | 10.00\% | 9.50\% | 9.50\% |
| Required - Chapter 356 | -3.40\% | -4.61\% | -5.90\% | -7.24\% | -8.65\% | -10.13\% |
| Sufficiency / (Deficiency) | 13.90\% | 15.11\% | 15.90\% | 17.24\% | 18.15\% | 19.63\% |
| Contributions, with stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,317,000 | 1,366,000 | 1,350,000 | 1,401,000 | 1,380,000 | 1,432,000 |
| Required - Chapter 356 | $(426,000)$ | $(600,000)$ | $(797,000)$ | $(1,014,000)$ | $(1,258,000)$ | $(1,527,000)$ |
| Sufficiency / (Deficiency) | 1,743,000 | 1,966,000 | 2,147,000 | 2,415,000 | 2,638,000 | 2,959,000 |
| Funding Ratios, with stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 75,090,000 | 80,619,000 | 86,601,000 | 93,007,000 | 99,941,000 | 107,375,000 |
| Actuarial Accrued Liability | 53,087,000 | 55,238,000 | 57,459,000 | 59,749,000 | 62,110,000 | 64,541,000 |
| Unfunded Actuarial Accrued Liability | 22,003,000 | 25,381,000 | 29,142,000 | 33,258,000 | 37,831,000 | 42,834,000 |
| Funding Ratio | 141\% | 146\% | 151\% | 156\% | 161\% | 166\% |
| Benefit Payments, with stabilizer | 3,167,000 | 3,309,000 | 3,458,000 | 3,614,000 | 3,776,000 | 3,946,000 |
| Contributions (\% of Payroll), without stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% | 13.50\% |
| Required - Chapter 356 | -3.24\% | -4.63\% | -6.11\% | -7.68\% | -9.34\% | -11.11\% |
| Sufficiency / (Deficiency) | 16.74\% | 18.13\% | 19.61\% | 21.18\% | 22.84\% | 24.61\% |
| Contributions, without stabilizer |  |  |  |  |  |  |
| Statutory - Chapter 352 | 1,693,000 | 1,757,000 | 1,822,000 | 1,891,000 | 1,962,000 | 2,035,000 |
| Required - Chapter 356 | $(406,000)$ | $(603,000)$ | $(825,000)$ | $(1,076,000)$ | $(1,358,000)$ | $(1,675,000)$ |
| Sufficiency / (Deficiency) | 2,099,000 | 2,360,000 | 2,647,000 | 2,967,000 | 3,320,000 | 3,710,000 |
| Funding Ratios, without stabilizer |  |  |  |  |  |  |
| Current Assets (MVA) | 74,674,000 | 80,599,000 | 87,033,000 | 94,025,000 | 101,624,000 | 109,888,000 |
| Actuarial Accrued Liability | 53,047,000 | 55,233,000 | 57,494,000 | 59,830,000 | 62,242,000 | 64,730,000 |
| Unfunded Actuarial Accrued Liability | 21,627,000 | 25,366,000 | 29,539,000 | 34,195,000 | 39,382,000 | 45,158,000 |
| Funding Ratio | 141\% | 146\% | 151\% | 157\% | 163\% | 170\% |
| Benefit Payments, without stabilizer | 3,126,000 | 3,267,000 | 3,414,000 | 3,567,000 | 3,728,000 | 3,895,000 |

