



110 West Berry Street
Suite 1300
Fort Wayne, IN 46802

August 30, 2024

Mr. Thomas Causey
Executive Director
State of North Carolina
Department of State Treasurer
Retirement Systems Division
3200 Atlantic Avenue
Raleigh, NC 27604

**Teachers' and State Employees' Retirement System
GASB 67 Disclosure for Fiscal Year Ending June 30, 2024
Based on Valuation Date of December 31, 2023**

Dear Mr. Causey:

We have prepared the required accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 for the Teachers' and State Employees' Retirement System of North Carolina (TSERS) for fiscal year ending June 30, 2024 based on a valuation date of December 31, 2023.

GASB Statement No. 67

GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan.

1. One such item is a distribution of the number of employees by type of membership, as follows:

| Number of Active and Retired Participants as of 12/31/2023 | |
|--|----------------|
| Retired members and survivors of deceased members currently receiving benefits | 252,036 |
| Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits | 226,099 |
| Active members ¹ | <u>303,068</u> |
| Total | 781,203 |

¹ Includes current recipients of DIP benefits.

2. Following is the schedule of changes in Net Pension Liability

| Schedule of Changes in Net Pension Liability as of June 30, 2024 | | |
|--|--|------------------------|
| Total Pension Liability | | |
| Service Cost | | \$ 2,032,765,000 |
| Interest | | 6,311,991,000 |
| Changes in Benefit Terms | | 0 |
| Differences Between Expected and Actual Experience | | 643,699,000 |
| Changes of Assumptions | | 0 |
| Benefits Payments, including Refund of Member Contributions | | <u>(5,783,536,000)</u> |
| Net Change in Total Pension Liability | | \$ 3,204,919,000 |
| Total Pension Liability – Beginning of Year | | \$ 97,921,037,000 |
| Total Pension Liability – End of Year | | \$ 101,125,956,000 |
| Plan Fiduciary Net Position | | |
| Employer Contributions | | \$ 3,212,327,000 |
| Member Contributions | | 1,106,850,000 |
| Net Investment Income | | 6,541,442,000 |
| Benefit Payments, including Refund of Member Contributions | | (5,783,536,000) |
| Administrative Expenses | | (16,461,000) |
| Other | | <u>(398,000)</u> |
| Net Change in Plan Fiduciary Net Pension | | \$ 5,060,224,000 |
| Plan Fiduciary Net Pension – Beginning of Year | | \$ 81,249,054,000 |
| Plan Fiduciary Net Pension – End of Year | | \$ 86,309,278,000 |

| Net Pension Liability/(Asset) | June 30, 2024 | June 30, 2023 |
|---|-----------------------|-----------------------|
| Total Pension Liability | \$101,125,956,000 | \$97,921,037,000 |
| Plan Fiduciary Net Pension | <u>86,309,278,000</u> | <u>81,249,054,000</u> |
| Net Pension Liability/(Asset) | \$ 14,816,678,000 | \$ 16,671,983,000 |
| Plan Fiduciary Net Pension as a Percentage of the Total Pension Liability/(Asset) | 85.35% | 82.97% |

3. Following is the sensitivity of the Net Pension Liability to changes in the discount rate.

| Sensitivity of the Net Pension Liability to Changes in Discount Rate | | | |
|--|-------------------|-------------------|------------------|
| | 1% Decrease | Current | 1% Increase |
| Discount Rate | 5.50% | 6.50% | 7.50% |
| Net Pension Liability (Asset) | \$ 27,179,553,000 | \$ 14,816,678,000 | \$ 4,621,676,000 |

4. The discount rate used to measure the total pension liability was 6.50%. The projection of cash flows used to determine the discount rate assumed that for fiscal years ending 2024 through 2027, System contributions will follow the Employer Contribution Rate Stabilization Policy as adopted by the Board of Trustees on April 29, 2021, and "direct-rate smoothing" as adopted by the Board of Trustees on January 28, 2021. It is assumed that for fiscal years 2028 and beyond, System contributions will be based on the actuarially determined contribution rate with a minimum employer contribution rate of 6.00% of payroll in accordance with G.S 135-8(d)(1a). In addition, assumed contributions include contributions based on payroll from future employees of the System that are not associated with the accumulation of their plan benefits. Investment earnings are based on actual returns through June 30, 2024, and on the assumed investment rate of return thereafter. In addition, future administrative expenses are assumed to equal 0.1% of projected payroll but are limited to a flat dollar rate per active and in-pay member as of each valuation date. The flat dollar rate is \$30 in 2023 and increased by 2.5% each year thereafter. Based on those policies, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Please see Appendix A for additional detail.

5. Methods and assumptions used to calculate the actuarially determined contribution rate are as follows:

| | |
|--|---|
| Valuation Date | 12/31/2023 |
| Actuarial Cost Method | Entry Age |
| Amortization Method | Level dollar closed |
| Amortization Period | 12-year closed period |
| Asset Valuation Method | Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period (not greater than 120% of market value and not less than 80% of market value) |
| Actuarial Assumptions: | |
| Investment Rate of Return* | 6.50% |
| Projected Salary Increases** | 3.25% - 8.05% |
| *Includes Inflation of | 2.50% |
| **Includes Inflation and Productivity of | 3.25% |
| Cost-of-living Adjustments | N/A |

The June 30, 2024 total pension liability was determined by an actuarial valuation as of December 31, 2023, based on the assumptions adopted by the Board of Trustees on January 28, 2021, which are based on the experience study prepared as of December 31, 2019, including a discount rate of 6.50%. The economic assumptions with respect to investment yield, salary increase, and inflation have been based upon a review of the existing portfolio structure as well as recent and anticipated experience.

The plan sponsor selected the assumptions used for the accounting results in this letter. We believe that these assumptions are reasonable and comply with the Actuarial Standards of Practice ("ASOPs") 27 and 35 and the requirements of GASB Statement No. 67. We prepared this letter in accordance with the requirement of this standard.

ASOPs 27 and 35 ask the actuary to disclose the information and analysis used to support the actuary's determination that the assumptions selected by the plan sponsor do not significantly conflict with what, in the actuary's professional judgment, are reasonable for the purpose of the measurement. In the case of the plan sponsor's selection of expected return on assets ("EROA"), the signing actuaries have used economic information and tools provided by the Financial Risk Management ("FRM") practice at Gallagher. A spreadsheet tool created by the FRM team converts averages, standard deviations, and correlations from Gallagher's Capital Markets Assumptions ("CMA") that are used for stochastic forecasting into approximate percentile ranges for the arithmetic and geometric average returns. It is intended to suggest possible reasonable ranges for EROA without attempting to predict or select a specific best estimate rate of return. It takes into account the duration (horizon) of investment and the target allocation of assets in the portfolio to various asset classes. Based on the actuary's analysis, including consistency with other assumptions used in the valuation and the percentiles generated by the spreadsheet described above, the actuary believes the EROA, in the actuary's professional judgment, is reasonable for the purpose of the measurement.

The June 30, 2024 total pension liability is based on the same plan provisions as used in the previous valuation. To the extent there have been changes to the TSERS provisions enacted by the legislature, they have been reviewed with staff of the Retirement Systems Division and were not considered material to the current valuation. To the extent the legislature enacts additional legislation that has a material impact on the valuation, revised GASB 67 disclosures may be required.

Full summaries of the assumptions, methods and plan provisions used in the previous valuation and for the June 30, 2024 total pension liability were provided in October 2023 in the "Report on the Eightieth Actuarial Valuation of the Teachers' and State Employees' Retirement System of North Carolina Prepared as of December 31, 2022."

The actuarial cost method used to develop the total pension liability is the Entry Age Normal Cost Method, as required by GASB Statement No. 67.

The results of this letter are based upon participant data supplied by the Retirement Systems Division and unaudited financial data supplied by the Financial Operations Division. Gallagher reviewed the data for reasonableness and consistency with data for the prior valuation but performed no audit of the data. The results of this letter are dependent on the accuracy of the data.

The primary purpose of the letter is to provide information that the Office of the State Controller (OSC) requires for its Annual Comprehensive Financial Report. This letter may also be used in conjunction with other materials for purposes of the pension plan audit. Use of the letter for any other purposes or by anyone other than OSC and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the letter for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask us to review any statement you wish to make on the results contained in this report. Gallagher will not accept any liability for any such statement made without prior review by Gallagher.

Mr. Thomas Causey
August 30, 2024

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases, or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Gallagher performed no analysis of the potential range of such future differences.

Actuarial Standard of Practice No. 56 ("ASOP 56") provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Gallagher uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of the Plan using data and assumptions as of the measurement date under the accounting rules specified in this report. The output from the third-party vendor software is used as input to an internally developed model that applies applicable accounting rules to the liabilities derived and other inputs, such as Plan assets and contributions, to generate many of the exhibits found in this report. Gallagher has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other accounting outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability, and consistency with prior results. Gallagher also reviews the third-party model when significant changes are made to the software. The review is performed by experts within the company who are familiar with applicable accounting rules as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed. Significant changes to the internal model that are applicable to multiple clients are generally developed, checked, and reviewed by multiple experts within the company who are familiar with the details of the required changes.

Where presented, references to "net pension liability" and "fiduciary net position as a percentage of the total pension liability" may be appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the Fund if the Fund were to settle (i.e., purchase annuities to cover) any portion of its liabilities.

This report was prepared under our supervision and in accordance with all applicable Actuarial Standards of Practice. We are Fellows of the Society of Actuaries, Enrolled Actuaries, Members of the American Academy of Actuaries, and Fellows of the Conference of Consulting Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. We are available to discuss this report with you at your convenience.

Please let us know if you require additional information.

Sincerely,

Buck Global, LLC (Buck),
Gallagher Benefit Services, Inc. (hereinafter "Gallagher")



Michael A. Ribble, FSA, EA, MAAA, FCA
Principal, Retirement Actuary



Elizabeth A. Wiley, FSA, EA, MAAA, FCA
Director, Retirement Actuary

Appendix A Table 1 – Projection of Fiduciary Net Positions

(\$ in Thousands)

| Calendar Year | Beginning Fiduciary Position | Member Contributions | Employer Contributions | Benefit Payments | Administrative Expenses | Investment Earnings | Ending Fiduciary Position |
|---------------|------------------------------|----------------------|------------------------|------------------|-------------------------|---------------------|---------------------------|
| 2024 | \$ 83,642,777 | \$ 1,029,515 | \$ 2,850,900 | \$ 5,895,299 | \$ 16,886 | \$ 6,147,110 | \$ 87,758,117 |
| 2025 | 87,758,117 | 972,117 | 2,821,271 | 6,095,746 | 16,433 | 5,630,104 | 91,069,430 |
| 2026 | 91,069,430 | 918,164 | 2,803,468 | 6,292,374 | 16,433 | 5,836,753 | 94,319,008 |
| 2027 | 94,319,008 | 869,122 | 2,909,280 | 6,489,584 | 16,518 | 6,043,481 | 97,634,789 |
| 2028 | 97,634,789 | 823,612 | 3,272,511 | 6,692,781 | 16,668 | 6,262,664 | 101,284,127 |
| 2029 | 101,284,127 | 779,983 | 3,312,589 | 6,908,848 | 16,842 | 6,492,840 | 104,943,849 |
| 2030 | 104,943,849 | 737,575 | 2,939,804 | 7,133,867 | 17,003 | 6,710,239 | 108,180,597 |
| 2031 | 108,180,597 | 695,877 | 2,552,286 | 7,359,261 | 17,150 | 6,899,684 | 110,952,033 |
| 2032 | 110,952,033 | 654,521 | 2,115,433 | 7,580,676 | 17,280 | 7,057,441 | 113,181,472 |
| 2033 | 113,181,472 | 613,308 | 1,806,889 | 7,798,773 | 17,394 | 7,184,187 | 114,969,689 |
| 2034 | 114,969,689 | 572,391 | 1,547,278 | 8,013,041 | 17,490 | 7,283,952 | 116,342,779 |
| 2035 | 116,342,779 | 532,249 | 1,660,142 | 8,218,863 | 17,567 | 7,368,940 | 117,667,680 |
| 2036 | 117,667,680 | 493,120 | 1,434,674 | 8,412,872 | 17,625 | 7,440,388 | 118,605,365 |
| 2037 | 118,605,365 | 455,320 | 870,041 | 8,592,436 | 17,663 | 7,476,322 | 118,796,949 |
| 2038 | 118,796,949 | 419,930 | 705,132 | 8,746,944 | 17,680 | 7,477,424 | 118,634,811 |
| 2039 | 118,634,811 | 386,961 | 505,951 | 8,876,676 | 17,676 | 7,455,310 | 118,088,681 |
| 2040 | 118,088,681 | 354,715 | 368,608 | 8,999,665 | 17,651 | 7,410,453 | 117,205,141 |
| 2041 | 117,205,141 | 322,913 | 322,913 | 9,115,493 | 17,605 | 7,346,841 | 116,064,710 |
| 2042 | 116,064,710 | 291,274 | 291,274 | 9,229,234 | 17,535 | 7,267,051 | 114,667,540 |
| 2043 | 114,667,540 | 259,894 | 259,894 | 9,337,261 | 17,441 | 7,170,775 | 113,003,401 |
| 2044 | 113,003,401 | 229,499 | 229,499 | 9,415,114 | 17,319 | 7,058,176 | 111,088,142 |
| 2045 | 111,088,142 | 200,564 | 200,564 | 9,459,754 | 17,169 | 6,930,410 | 108,942,757 |
| 2046 | 108,942,757 | 173,092 | 173,092 | 9,486,103 | 16,989 | 6,788,365 | 106,574,214 |
| 2047 | 106,574,214 | 147,133 | 147,133 | 9,493,377 | 16,779 | 6,632,523 | 103,990,847 |
| 2048 | 103,990,847 | 123,026 | 123,026 | 9,478,108 | 16,537 | 6,463,558 | 101,205,812 |
| 2049 | 101,205,812 | 101,237 | 101,237 | 9,437,303 | 16,265 | 6,282,451 | 98,237,169 |
| 2050 | 98,237,169 | 81,825 | 81,825 | 9,368,932 | 15,966 | 6,090,445 | 95,106,366 |
| 2051 | 95,106,366 | 63,779 | 63,779 | 9,281,671 | 15,642 | 5,888,587 | 91,825,198 |
| 2052 | 91,825,198 | 46,545 | 46,545 | 9,179,075 | 15,300 | 5,677,503 | 88,401,416 |
| 2053 | 88,401,416 | 31,428 | 31,428 | 9,049,617 | 14,939 | 5,458,142 | 84,857,858 |
| 2054 | 84,857,858 | 20,630 | 20,630 | 8,874,886 | 14,559 | 5,232,721 | 81,242,394 |
| 2055 | 81,242,394 | 13,960 | 13,960 | 8,658,104 | 14,165 | 5,004,237 | 77,602,282 |
| 2056 | 77,602,282 | 9,581 | 9,581 | 8,416,573 | 13,759 | 4,775,089 | 73,966,201 |
| 2057 | 73,966,201 | 6,593 | 6,593 | 8,158,823 | 13,343 | 4,546,811 | 70,354,032 |
| 2058 | 70,354,032 | 4,538 | 4,538 | 7,889,881 | 12,918 | 4,320,503 | 66,780,812 |
| 2059 | 66,780,812 | 3,122 | 3,122 | 7,612,921 | 12,494 | 4,097,028 | 63,258,669 |
| 2060 | 63,258,669 | 2,139 | 2,139 | 7,330,222 | 12,082 | 3,877,082 | 59,797,725 |
| 2061 | 59,797,725 | 1,462 | 1,462 | 7,043,502 | 11,702 | 3,661,260 | 56,406,705 |
| 2062 | 56,406,705 | 991 | 991 | 6,754,304 | 11,334 | 3,450,078 | 53,093,127 |
| 2063 | 53,093,127 | 667 | 667 | 6,464,215 | 10,968 | 3,243,965 | 49,863,243 |
| 2064 | 49,863,243 | 443 | 443 | 5,975,797 | 10,600 | 3,049,644 | 46,927,376 |
| 2065 | 46,927,376 | 291 | 291 | 5,694,345 | 10,229 | 2,867,818 | 44,091,202 |
| 2066 | 44,091,202 | 187 | 187 | 5,414,227 | 9,852 | 2,692,432 | 41,359,929 |
| 2067 | 41,359,929 | 117 | 117 | 5,136,113 | 9,469 | 2,523,803 | 38,738,384 |
| 2068 | 38,738,384 | 72 | 72 | 4,860,661 | 9,081 | 2,362,224 | 36,231,010 |
| 2069 | 36,231,010 | 43 | 43 | 4,588,568 | 8,689 | 2,207,960 | 33,841,799 |
| 2070 | 33,841,799 | 25 | 25 | 4,320,529 | 8,293 | 2,061,247 | 31,574,274 |
| 2071 | 31,574,274 | 14 | 14 | 4,057,205 | 7,894 | 1,922,292 | 29,431,495 |
| 2072 | 29,431,495 | 7 | 7 | 3,799,226 | 7,494 | 1,791,277 | 27,416,066 |
| 2073 | 27,416,066 | 3 | 3 | 3,547,199 | 7,094 | 1,668,349 | 25,530,128 |

Appendix A

Table 1 – Projection of Fiduciary Net Positions (continued)

(\$ in Thousands)

| Calendar Year | Beginning Fiduciary Position | Member Contributions | Employer Contributions | Benefit Payments | Administrative Expenses | Investment Earnings | Ending Fiduciary Position |
|---------------|------------------------------|----------------------|------------------------|------------------|-------------------------|---------------------|---------------------------|
| 2074 | \$ 25,530,128 | \$ 1 | \$ 1 | \$ 3,301,690 | \$ 6,695 | \$ 1,553,629 | \$ 23,775,374 |
| 2075 | 23,775,374 | 0 | 0 | 3,063,229 | 6,297 | 1,447,211 | 22,153,059 |
| 2076 | 22,153,059 | 0 | 0 | 2,832,313 | 5,903 | 1,349,159 | 20,664,002 |
| 2077 | 20,664,002 | 0 | 0 | 2,609,406 | 5,513 | 1,259,513 | 19,308,596 |
| 2078 | 19,308,596 | 0 | 0 | 2,394,938 | 5,129 | 1,178,284 | 18,086,813 |
| 2079 | 18,086,813 | 0 | 0 | 2,189,309 | 4,753 | 1,105,459 | 16,998,210 |
| 2080 | 16,998,210 | 0 | 0 | 1,992,886 | 4,385 | 1,040,994 | 16,041,933 |
| 2081 | 16,041,933 | 0 | 0 | 1,806,005 | 4,027 | 984,826 | 15,216,727 |
| 2082 | 15,216,727 | 0 | 0 | 1,628,953 | 3,680 | 936,862 | 14,520,956 |
| 2083 | 14,520,956 | 0 | 0 | 1,461,970 | 3,347 | 896,989 | 13,952,628 |
| 2084 | 13,952,628 | 0 | 0 | 1,305,236 | 3,027 | 865,071 | 13,509,436 |
| 2085 | 13,509,436 | 0 | 0 | 1,158,860 | 2,723 | 840,956 | 13,188,809 |
| 2086 | 13,188,809 | 0 | 0 | 1,022,881 | 2,435 | 824,475 | 12,987,968 |
| 2087 | 12,987,968 | 0 | 0 | 897,261 | 2,164 | 815,447 | 12,903,990 |
| 2088 | 12,903,990 | 0 | 0 | 781,894 | 1,911 | 813,686 | 12,933,871 |
| 2089 | 12,933,871 | 0 | 0 | 676,610 | 1,676 | 819,003 | 13,074,588 |
| 2090 | 13,074,588 | 0 | 0 | 581,171 | 1,460 | 831,211 | 13,323,168 |
| 2091 | 13,323,168 | 0 | 0 | 495,271 | 1,262 | 850,123 | 13,676,758 |
| 2092 | 13,676,758 | 0 | 0 | 418,537 | 1,083 | 875,567 | 14,132,705 |
| 2093 | 14,132,705 | 0 | 0 | 350,538 | 921 | 907,383 | 14,688,629 |
| 2094 | 14,688,629 | 0 | 0 | 290,785 | 777 | 945,434 | 15,342,501 |
| 2095 | 15,342,501 | 0 | 0 | 238,747 | 650 | 989,605 | 16,092,709 |
| 2096 | 16,092,709 | 0 | 0 | 193,853 | 538 | 1,039,808 | 16,938,126 |
| 2097 | 16,938,126 | 0 | 0 | 155,519 | 441 | 1,095,990 | 17,878,156 |
| 2098 | 17,878,156 | 0 | 0 | 123,156 | 357 | 1,158,128 | 18,912,771 |
| 2099 | 18,912,771 | 0 | 0 | 96,178 | 287 | 1,226,245 | 20,042,551 |
| 2100 | 20,042,551 | 0 | 0 | 73,999 | 228 | 1,300,392 | 21,268,716 |
| 2101 | 21,268,716 | 0 | 0 | 56,039 | 179 | 1,380,668 | 22,593,166 |
| 2102 | 22,593,166 | 0 | 0 | 41,730 | 139 | 1,467,215 | 24,018,512 |
| 2103 | 24,018,512 | 0 | 0 | 30,531 | 107 | 1,560,223 | 25,548,097 |
| 2104 | 25,548,097 | 0 | 0 | 21,933 | 82 | 1,659,922 | 27,186,004 |
| 2105 | 27,186,004 | 0 | 0 | 15,467 | 63 | 1,766,593 | 28,937,067 |
| 2106 | 28,937,067 | 0 | 0 | 10,709 | 48 | 1,880,565 | 30,806,875 |
| 2107 | 30,806,875 | 0 | 0 | 7,288 | 37 | 2,002,213 | 32,801,763 |
| 2108 | 32,801,763 | 0 | 0 | 4,888 | 28 | 2,131,958 | 34,928,805 |
| 2109 | 34,928,805 | 0 | 0 | 3,243 | 22 | 2,270,267 | 37,195,807 |
| 2110 | 37,195,807 | 0 | 0 | 2,143 | 17 | 2,417,659 | 39,611,306 |
| 2111 | 39,611,306 | 0 | 0 | 1,421 | 14 | 2,574,689 | 42,184,560 |
| 2112 | 42,184,560 | 0 | 0 | 956 | 11 | 2,741,965 | 44,925,558 |
| 2113 | 44,925,558 | 0 | 0 | 658 | 9 | 2,920,141 | 47,845,032 |
| 2114 | 47,845,032 | 0 | 0 | 465 | 7 | 3,109,911 | 50,954,471 |
| 2115 | 50,954,471 | 0 | 0 | 339 | 6 | 3,312,030 | 54,266,156 |
| 2116 | 54,266,156 | 0 | 0 | 252 | 5 | 3,527,292 | 57,793,191 |
| 2117 | 57,793,191 | 0 | 0 | 190 | 4 | 3,756,551 | 61,549,548 |
| 2118 | 61,549,548 | 0 | 0 | 145 | 3 | 4,000,716 | 65,550,116 |
| 2119 | 65,550,116 | 0 | 0 | 110 | 3 | 4,260,754 | 69,810,757 |
| 2120 | 69,810,757 | 0 | 0 | 83 | 2 | 4,537,697 | 74,348,369 |
| 2121 | 74,348,369 | 0 | 0 | 61 | 2 | 4,832,642 | 79,180,948 |
| 2122 | 79,180,948 | 0 | 0 | 45 | 1 | 5,146,760 | 84,327,662 |
| 2123 | 84,327,662 | 0 | 0 | 32 | 1 | 5,481,297 | 89,808,926 |

Appendix A

Table 2 – Actuarial Present Values of Projected Benefit Payments
(\$ in Thousands)

| Calendar Year | Beginning Fiduciary Position | Benefit Payments | Funded Benefit Payments | Unfunded Benefit Payments | Present Value of Benefit Payments | | |
|---------------|------------------------------|------------------|-------------------------|---------------------------|-----------------------------------|----------------------------|-------------------------------------|
| | | | | | Funded Payments at 6.50% | Unfunded Payments at 3.93% | Using Single Discount Rate of 6.50% |
| 2024 | \$ 83,642,777 | \$ 5,895,299 | \$ 5,895,299 | \$ 0 | \$ 5,712,563 | \$ 0 | \$ 5,712,563 |
| 2025 | 87,758,117 | 6,095,746 | 6,095,746 | 0 | 5,546,288 | 0 | 5,546,288 |
| 2026 | 91,069,430 | 6,292,374 | 6,292,374 | 0 | 5,375,768 | 0 | 5,375,768 |
| 2027 | 94,319,008 | 6,489,584 | 6,489,584 | 0 | 5,205,869 | 0 | 5,205,869 |
| 2028 | 97,634,789 | 6,692,781 | 6,692,781 | 0 | 5,041,194 | 0 | 5,041,194 |
| 2029 | 101,284,127 | 6,908,848 | 6,908,848 | 0 | 4,886,330 | 0 | 4,886,330 |
| 2030 | 104,943,849 | 7,133,867 | 7,133,867 | 0 | 4,737,536 | 0 | 4,737,536 |
| 2031 | 108,180,597 | 7,359,261 | 7,359,261 | 0 | 4,588,938 | 0 | 4,588,938 |
| 2032 | 110,952,033 | 7,580,676 | 7,580,676 | 0 | 4,438,500 | 0 | 4,438,500 |
| 2033 | 113,181,472 | 7,798,773 | 7,798,773 | 0 | 4,287,509 | 0 | 4,287,509 |
| 2034 | 114,969,689 | 8,013,041 | 8,013,041 | 0 | 4,136,438 | 0 | 4,136,438 |
| 2035 | 116,342,779 | 8,218,863 | 8,218,863 | 0 | 3,983,742 | 0 | 3,983,742 |
| 2036 | 117,667,680 | 8,412,872 | 8,412,872 | 0 | 3,828,901 | 0 | 3,828,901 |
| 2037 | 118,605,365 | 8,592,436 | 8,592,436 | 0 | 3,671,949 | 0 | 3,671,949 |
| 2038 | 118,796,949 | 8,746,944 | 8,746,944 | 0 | 3,509,838 | 0 | 3,509,838 |
| 2039 | 118,634,811 | 8,876,676 | 8,876,676 | 0 | 3,344,502 | 0 | 3,344,502 |
| 2040 | 118,088,681 | 8,999,665 | 8,999,665 | 0 | 3,183,888 | 0 | 3,183,888 |
| 2041 | 117,205,141 | 9,115,493 | 9,115,493 | 0 | 3,028,043 | 0 | 3,028,043 |
| 2042 | 116,064,710 | 9,229,234 | 9,229,234 | 0 | 2,878,710 | 0 | 2,878,710 |
| 2043 | 114,667,540 | 9,337,261 | 9,337,261 | 0 | 2,734,652 | 0 | 2,734,652 |
| 2044 | 113,003,401 | 9,415,114 | 9,415,114 | 0 | 2,589,158 | 0 | 2,589,158 |
| 2045 | 111,088,142 | 9,459,754 | 9,459,754 | 0 | 2,442,661 | 0 | 2,442,661 |
| 2046 | 108,942,757 | 9,486,103 | 9,486,103 | 0 | 2,299,967 | 0 | 2,299,967 |
| 2047 | 106,574,214 | 9,493,377 | 9,493,377 | 0 | 2,161,250 | 0 | 2,161,250 |
| 2048 | 103,990,847 | 9,478,108 | 9,478,108 | 0 | 2,026,078 | 0 | 2,026,078 |
| 2049 | 101,205,812 | 9,437,303 | 9,437,303 | 0 | 1,894,231 | 0 | 1,894,231 |
| 2050 | 98,237,169 | 9,368,932 | 9,368,932 | 0 | 1,765,735 | 0 | 1,765,735 |
| 2051 | 95,106,366 | 9,281,671 | 9,281,671 | 0 | 1,642,525 | 0 | 1,642,525 |
| 2052 | 91,825,198 | 9,179,075 | 9,179,075 | 0 | 1,525,229 | 0 | 1,525,229 |
| 2053 | 88,401,416 | 9,049,617 | 9,049,617 | 0 | 1,411,942 | 0 | 1,411,942 |
| 2054 | 84,857,858 | 8,874,886 | 8,874,886 | 0 | 1,300,169 | 0 | 1,300,169 |
| 2055 | 81,242,394 | 8,658,104 | 8,658,104 | 0 | 1,190,996 | 0 | 1,190,996 |
| 2056 | 77,602,282 | 8,416,573 | 8,416,573 | 0 | 1,087,109 | 0 | 1,087,109 |
| 2057 | 73,966,201 | 8,158,823 | 8,158,823 | 0 | 989,500 | 0 | 989,500 |
| 2058 | 70,354,032 | 7,889,881 | 7,889,881 | 0 | 898,481 | 0 | 898,481 |
| 2059 | 66,780,812 | 7,612,921 | 7,612,921 | 0 | 814,030 | 0 | 814,030 |
| 2060 | 63,258,669 | 7,330,222 | 7,330,222 | 0 | 735,964 | 0 | 735,964 |
| 2061 | 59,797,725 | 7,043,502 | 7,043,502 | 0 | 664,016 | 0 | 664,016 |
| 2062 | 56,406,705 | 6,754,304 | 6,754,304 | 0 | 597,889 | 0 | 597,889 |
| 2063 | 53,093,127 | 6,464,215 | 6,464,215 | 0 | 537,287 | 0 | 537,287 |
| 2064 | 49,863,243 | 5,975,797 | 5,975,797 | 0 | 466,377 | 0 | 466,377 |
| 2065 | 46,927,376 | 5,694,345 | 5,694,345 | 0 | 417,287 | 0 | 417,287 |
| 2066 | 44,091,202 | 5,414,227 | 5,414,227 | 0 | 372,544 | 0 | 372,544 |
| 2067 | 41,359,929 | 5,136,113 | 5,136,113 | 0 | 331,838 | 0 | 331,838 |
| 2068 | 38,738,384 | 4,860,661 | 4,860,661 | 0 | 294,875 | 0 | 294,875 |
| 2069 | 36,231,010 | 4,588,568 | 4,588,568 | 0 | 261,379 | 0 | 261,379 |
| 2070 | 33,841,799 | 4,320,529 | 4,320,529 | 0 | 231,089 | 0 | 231,089 |
| 2071 | 31,574,274 | 4,057,205 | 4,057,205 | 0 | 203,761 | 0 | 203,761 |
| 2072 | 29,431,495 | 3,799,226 | 3,799,226 | 0 | 179,159 | 0 | 179,159 |
| 2073 | 27,416,066 | 3,547,199 | 3,547,199 | 0 | 157,065 | 0 | 157,065 |

Appendix A

Table 2 – Actuarial Present Values of Projected Benefit Payments (continued)
(\$ in Thousands)

| Calendar Year | Beginning Fiduciary Position | Benefit Payments | Funded Benefit Payments | Unfunded Benefit Payments | Present Value of Benefit Payments | | |
|---------------|------------------------------|------------------|-------------------------|---------------------------|-----------------------------------|----------------------------|-------------------------------------|
| | | | | | Funded Payments at 6.50% | Unfunded Payments at 3.93% | Using Single Discount Rate of 6.50% |
| 2074 | \$ 25,530,128 | \$ 3,301,690 | \$ 3,301,690 | \$ 0 | \$ 137,272 | \$ 0 | \$ 137,272 |
| 2075 | 23,775,374 | 3,063,229 | 3,063,229 | 0 | 119,584 | 0 | 119,584 |
| 2076 | 22,153,059 | 2,832,313 | 2,832,313 | 0 | 103,821 | 0 | 103,821 |
| 2077 | 20,664,002 | 2,609,406 | 2,609,406 | 0 | 89,813 | 0 | 89,813 |
| 2078 | 19,308,596 | 2,394,938 | 2,394,938 | 0 | 77,400 | 0 | 77,400 |
| 2079 | 18,086,813 | 2,189,309 | 2,189,309 | 0 | 66,436 | 0 | 66,436 |
| 2080 | 16,998,210 | 1,992,886 | 1,992,886 | 0 | 56,784 | 0 | 56,784 |
| 2081 | 16,041,933 | 1,806,005 | 1,806,005 | 0 | 48,319 | 0 | 48,319 |
| 2082 | 15,216,727 | 1,628,953 | 1,628,953 | 0 | 40,922 | 0 | 40,922 |
| 2083 | 14,520,956 | 1,461,970 | 1,461,970 | 0 | 34,486 | 0 | 34,486 |
| 2084 | 13,952,628 | 1,305,236 | 1,305,236 | 0 | 28,909 | 0 | 28,909 |
| 2085 | 13,509,436 | 1,158,860 | 1,158,860 | 0 | 24,101 | 0 | 24,101 |
| 2086 | 13,188,809 | 1,022,881 | 1,022,881 | 0 | 19,974 | 0 | 19,974 |
| 2087 | 12,987,968 | 897,261 | 897,261 | 0 | 16,452 | 0 | 16,452 |
| 2088 | 12,903,990 | 781,894 | 781,894 | 0 | 13,462 | 0 | 13,462 |
| 2089 | 12,933,871 | 676,610 | 676,610 | 0 | 10,938 | 0 | 10,938 |
| 2090 | 13,074,588 | 581,171 | 581,171 | 0 | 8,822 | 0 | 8,822 |
| 2091 | 13,323,168 | 495,271 | 495,271 | 0 | 7,059 | 0 | 7,059 |
| 2092 | 13,676,758 | 418,537 | 418,537 | 0 | 5,601 | 0 | 5,601 |
| 2093 | 14,132,705 | 350,538 | 350,538 | 0 | 4,405 | 0 | 4,405 |
| 2094 | 14,688,629 | 290,785 | 290,785 | 0 | 3,431 | 0 | 3,431 |
| 2095 | 15,342,501 | 238,747 | 238,747 | 0 | 2,645 | 0 | 2,645 |
| 2096 | 16,092,709 | 193,853 | 193,853 | 0 | 2,017 | 0 | 2,017 |
| 2097 | 16,938,126 | 155,519 | 155,519 | 0 | 1,519 | 0 | 1,519 |
| 2098 | 17,878,156 | 123,156 | 123,156 | 0 | 1,130 | 0 | 1,130 |
| 2099 | 18,912,771 | 96,178 | 96,178 | 0 | 828 | 0 | 828 |
| 2100 | 20,042,551 | 73,999 | 73,999 | 0 | 598 | 0 | 598 |
| 2101 | 21,268,716 | 56,039 | 56,039 | 0 | 425 | 0 | 425 |
| 2102 | 22,593,166 | 41,730 | 41,730 | 0 | 298 | 0 | 298 |
| 2103 | 24,018,512 | 30,531 | 30,531 | 0 | 204 | 0 | 204 |
| 2104 | 25,548,097 | 21,933 | 21,933 | 0 | 138 | 0 | 138 |
| 2105 | 27,186,004 | 15,467 | 15,467 | 0 | 91 | 0 | 91 |
| 2106 | 28,937,067 | 10,709 | 10,709 | 0 | 59 | 0 | 59 |
| 2107 | 30,806,875 | 7,288 | 7,288 | 0 | 38 | 0 | 38 |
| 2108 | 32,801,763 | 4,888 | 4,888 | 0 | 24 | 0 | 24 |
| 2109 | 34,928,805 | 3,243 | 3,243 | 0 | 15 | 0 | 15 |
| 2110 | 37,195,807 | 2,143 | 2,143 | 0 | 9 | 0 | 9 |
| 2111 | 39,611,306 | 1,421 | 1,421 | 0 | 6 | 0 | 6 |
| 2112 | 42,184,560 | 956 | 956 | 0 | 4 | 0 | 4 |
| 2113 | 44,925,558 | 658 | 658 | 0 | 2 | 0 | 2 |
| 2114 | 47,845,032 | 465 | 465 | 0 | 2 | 0 | 2 |
| 2115 | 50,954,471 | 339 | 339 | 0 | 1 | 0 | 1 |
| 2116 | 54,266,156 | 252 | 252 | 0 | 1 | 0 | 1 |
| 2117 | 57,793,191 | 190 | 190 | 0 | 1 | 0 | 1 |
| 2118 | 61,549,548 | 145 | 145 | 0 | 0 | 0 | 0 |
| 2119 | 65,550,116 | 110 | 110 | 0 | 0 | 0 | 0 |
| 2120 | 69,810,757 | 83 | 83 | 0 | 0 | 0 | 0 |
| 2121 | 74,348,369 | 61 | 61 | 0 | 0 | 0 | 0 |
| 2122 | 79,180,948 | 45 | 45 | 0 | 0 | 0 | 0 |
| 2123 | 84,327,662 | 32 | 32 | 0 | 0 | 0 | 0 |