

City of Boynton Beach Municipal Firefighters' Pension Trust Fund

ACTUARIAL VALUATION REPORT AS OF
OCTOBER 1, 2019

ANNUAL EMPLOYER CONTRIBUTION FOR THE FISCAL YEAR
ENDING SEPTEMBER 30, 2021





March 30, 2020

Board of Trustees
City of Boynton Beach Municipal
Firefighters' Pension Trust Fund
Boynton Beach, Florida

**Re: City of Boynton Beach Municipal Firefighters' Pension Trust Fund
Actuarial Valuation as of October 1, 2019 and Actuarial Disclosures**

Dear Board Members:

The results of the October 1, 2019 Annual Actuarial Valuation of the City of Boynton Beach Municipal Firefighters' Pension Trust Fund are presented in this report.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the System's funding progress, to determine the employer contribution rate for the fiscal year ending September 30, 2021, and to determine the actuarial information for Governmental Accounting Standards Board (GASB) Statement No. 67. This report also includes estimated GASB Statement No. 67 information for the fiscal year ending September 30, 2020. This report should not be relied on for any purpose other than the purpose described herein. Determinations of financial results associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section B of this report. This report includes risk metrics in Section A, but does not include a robust assessment of the risks of future experience not meeting the actuarial assumptions. A robust assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through September 30, 2019. The valuation was based upon information furnished by the Plan Administrator concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the Plan Administrator.

This report was prepared using certain assumptions approved by the Board and prescribed by the Florida Statutes as described in the section of this report entitled Actuarial Assumptions and Cost Methods. The prescribed assumptions are the assumed mortality rates detailed in the Actuarial Assumptions and Cost

Methods section in accordance with Florida Statutes Chapter 112.63. All actuarial assumptions used in this report are reasonable for purposes of this valuation.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Boynton Beach Municipal Firefighters' Pension Trust Fund as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.


Peter N. Strong and Jeffrey Amrose actuaries are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

This actuarial valuation and/or cost determination was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate. In our opinion, the techniques and assumptions used are reasonable, meet the requirements and intent of Part VII, Chapter 112, Florida Statutes, and are based on generally accepted actuarial principles and practices. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.

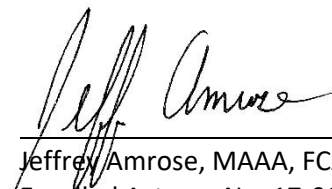
Gabriel, Roeder, Smith & Company will be pleased to review this valuation report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY



Peter N. Strong, FSA, MAAA, FCA
Enrolled Actuary No. 17-06975



Jeffrey Amrose, MAAA, FCA
Enrolled Actuary No. 17-06599



TABLE OF CONTENTS

| <u>Section</u> | <u>Title</u> | <u>Page</u> |
|----------------|--|-------------|
| A | Discussion of Valuation Results | |
| | 1. Comparison of Required Employer Contributions | 1 |
| | 2. Risks Associated with the Measuring the Accrued Liability and Actuarially Determined Contribution | 5 |
| | 3. Chapter Revenue | 8 |
| B | Valuation Results | |
| | 1. Participant Data | 9 |
| | 2. Actuarially Determined Employer Contribution (ADEC) | 10 |
| | 3. Actuarial Value of Benefits and Assets | 11 |
| | 4. Calculation of Employer Normal Cost | 12 |
| | 5. Liquidation of the Unfunded Actuarial Liability | 13 |
| | 6. Actuarial Gains and Losses | 17 |
| | 7. Actual Compared to Expected Decrements | 22 |
| | 8. Cumulative Actuarial Gains (Losses) | 23 |
| | 9. Recent History of Valuation Results | 24 |
| | 10. Recent History of Required and Actual Contributions | 25 |
| | 11. Actuarial Assumptions and Cost Method | 26 |
| | 12. Glossary of Terms | 32 |
| C | Pension Fund Information | |
| | 1. Summary of Assets | 35 |
| | 2. Pension Fund Income and Disbursements | 36 |
| | 3. Actuarial Value of Assets | 37 |
| | 4. Reconciliation of DROP Accounts | 38 |
| | 5. Investment Rate of Return | 39 |
| D | Financial Accounting Information | |
| | 1. FASB No. 35 | 40 |
| | 2. GASB No. 67 | 41 |
| E | Miscellaneous Information | |
| | 1. Reconciliation of Membership Data | 47 |
| | 2. Age/Service/Salary Distributions | 48 |
| F | Summary of Plan Provisions | 50 |



SECTION A

DISCUSSION OF VALUATION RESULTS

DISCUSSION OF VALUATION RESULTS

Comparison of Required Employer Contributions

A comparison of the required employer contribution developed in this and the last actuarial valuation is shown below. The required contribution dollar amounts shown below are estimates only. The contribution policy of the City is to contribute the dollar amount determined by multiplying the required percentage of payroll determined as of the valuation date by the projected pensionable payroll for the year.

| | For FYE 9/30/21 Based on 10/1/2019 Valuation if contributed on 10/1/2020 | For FYE 9/30/20 Based on 10/1/2018 Valuation if contributed on 10/1/2019 | Increase (Decrease) |
|--|---|---|--------------------------------|
| Required Employer/State Contribution | \$ 6,400,723 | \$ 5,969,275 | \$ 431,448 |
| As % of Covered Payroll | 54.28 % | 56.03 % | (1.75) % |
| State Contribution Allocated (Including Amounts from State contribution reserve) | \$ 1,062,385 | \$ 1,062,385 | \$ 0 |
| As % of Covered Payroll | 9.01 % | 9.97 % | (0.96) % |
| Prepaid Contribution Allocated | \$ 122,975 | \$ 172,045 | \$ (49,070) |
| As % of Covered Payroll | 1.04 % | 1.61 % | (0.57) % |
| Net Required Employer (City) Contribution | \$ 5,215,363 | \$ 4,734,845 | \$ 480,518 |
| As % of Covered Payroll | 44.23 % | 44.45 % | (0.22) % |

The required employer contribution has been computed under the assumption that the amount to be allocated from current and prior excess State money this year and next year will be \$1,062,385. If the actual amount received by the State is lower than this amount, the shortfall may be made up by using the Accumulated Excess Premium Tax Revenue currently being held in reserve (this amount is \$1,990,898 as of October 1, 2019).

The employer contribution listed above is for the City's fiscal year ending September 30, 2021 and has been calculated as though payment is made in a single lump sum on October 1, 2020. The total minimum required employer contribution for the fiscal year ending September 30, 2019 was \$5,347,166. The actual employer contribution during the fiscal year ending September 30, 2019 was \$5,627,597. The excess amount of \$280,431 has been added to the employer prepaid contribution.



Revisions in Benefits

There have been the following revisions in benefits since the previous valuation:

- The maximum benefit cap (currently \$95,000 as of October 1, 2019) will be increased annually beginning on October 1, 2020 (and on each October 1st thereafter) by 1.5%.
- The Survivor's benefit for line of duty and non-line of duty death benefits was increased from 2.5% 3.0% of the member's average final compensation multiplied by years of Credited Service.
- A "Consolidated Deferred Retirement Option Plan" has been created which applies to members hired on or after January 21, 2020. Benefit provisions for the Consolidated DROP that differ from the current DROP include the following:
 - Members in the Consolidated Deferred Retirement Option Plan earn interest credited on their DROP account balance at the same rate earned by the Plan, no less than 0% and no more than 8%.
 - Members in the Consolidated Deferred Retirement Option Plan must withdraw or roll over their DROP balances within 30 days of separating from employment and exiting the DROP.
- The Board of Trustees may adopt uniform administrative rules relating to rebuttable presumptions and to non-rebuttable conclusive cancer presumptions and for the determination of any disqualifying events reflected in Chapter 112 and 175, Florida Statutes.

Although not specifically stated in the Ordinance, we have assumed that as a result of the proposed change to adopt uniform administrative rules relating to rebuttable disease presumptions and to non-rebuttable conclusive cancer presumptions reflected in Chapters 112 and 175, Florida Statutes, the following provisions are added to the Plan:

- In compliance with newly adopted Florida Statutes Chapter 112.1816:
 - If a firefighter is initially diagnosed with cancer while employed as a firefighter, and as a result of the diagnosis of cancer or circumstances arising from the treatment of such cancer, he or she is determined to be wholly prevented from rendering useful and efficient service as a firefighter, and likely to remain so disabled continuously and permanently, the disability or death shall be considered in the line-of-duty.
- In compliance with newly adopted Florida Statutes Chapter 112.181:
 - Disability or death resulting from a condition or impairment of health that is caused by hepatitis, meningococcal meningitis, tuberculosis, hypertension or heart disease resulting in a member being determined to be wholly prevented from rendering useful and efficient service as a firefighter, and likely to remain so disabled continuously and permanently shall be presumed to have been accidental and suffered in the line of duty unless the contrary is shown by competent evidence.

The approximate impact of the above revisions in benefits was measured in the Actuarial Impact Statement dated January 16, 2020 (as if the ordinance had been gone into effect as of October 1, 2018). The final impact has been measured in this valuation to reflect the impact on the required contribution payable October 1, 2020. The net impact of the above revisions in benefits is an increase in the annual required employer contribution of 0.73% of covered payroll, or \$86,082.

There have been no other changes in benefits since the prior valuation.



Revisions in Actuarial Assumptions or Methods

There have been no changes in actuarial assumptions or methods since the prior valuation.

Actuarial Experience

There was a net actuarial experience loss of \$2,636,284 for the year, which means that overall actual experience was less favorable than expected. The actuarial loss is primarily due to average salary increases that were higher than expected (14.9% actual versus 6.7% expected). There were also more retirements than expected (5 actual versus 2 expected), although this had a much smaller impact. The loss was offset somewhat by a higher than expected investment returns on the actuarial value of assets. The net investment return on the actuarial value of assets was 7.94% versus an assumed return of 7.50%. The net investment return on the market value of assets was 5.79%.

The net actuarial loss for the year caused an increase in the annual required employer contribution of 1.53% of covered payroll, or about \$180,000.

Additional Payments Toward Unfunded Actuarial Liability

The City of Boynton Beach and the Firefighters' Union have mutually consented to use \$150,000 of the Accumulated Excess State Contribution reserve to reduce the Plan's Unfunded Actuarial Liability (UAL). This is being done in two annual increments with the first increment (\$75,000) occurring as of October 1, 2019. The second increment (\$75,000) will be applied as of October 1, 2020. The use of \$75,000 as of October 1, 2019 was used to reduce the UAL amortization base created on October 1, 1996. The net effect was a decrease in the annual required employer contribution of 0.23% of covered payroll, or \$27,122.

Funded Ratio

The funded ratio was 67.8% this year compared to 66.9% last year. The funded ratio would have been 68.0% this year prior to recognizing the revisions in benefits. The funded ratio is equal to the actuarial value of assets divided by the actuarial accrued liability.

Analysis of Change in Employer Contribution

The components of change in the required employer contribution are as follows:

| | |
|--|-------------|
| Contribution Rate Last Year | 44.45 % |
| Revision in Benefits | 0.73 |
| Experience (Gains) or Losses | 1.53 |
| Revision in Assumptions/Methods | 0.00 |
| Additional UAAL Payment from State Reserve | (0.23) |
| Amortization Payment on UAAL | (2.97) |
| Normal Cost Rate | (0.82) |
| Administrative Expense | 0.01 |
| State Contribution | 0.96 |
| Change in Allocated Prepaid Contribution | <u>0.57</u> |
| Contribution Rate This Year | 44.23 % |



Covered payroll as of October 1, 2019 was \$11,504,436 versus \$10,393,865 last year, an increase of 10.7%. Amortization payments on the unfunded liability are scheduled to increase by 2.50% per year. When covered payroll increases more than 2.50%, the amortization payment as a percentage of covered payroll will decrease. The 10.7% increase in covered payroll caused the Amortization Payment on the UAAL (expressed as a percentage of pay) to decrease by approximately 2.97% of covered payroll.

Required Contributions in Later Years

The current calculated City contribution requirement is 44.23% of payroll starting October 1, 2020. Under the asset smoothing method, market value gains and losses are recognized over five years. As of October 1, 2019, the market value of assets exceeded the actuarial value by \$2,161,757. Once all the gains and losses through September 30, 2019 have been fully recognized in the actuarial value of assets, the employer contribution rate will decrease by roughly 1.25% of payroll unless there are offsetting losses.

Relationship to Market Value

If Market Value had been the basis for the valuation, the City contribution rate would have been 42.98% (after reflecting the prepaid contribution) and the funded ratio would have been 69.3%. The funded ratio on a market value basis was 70.1% last year.

13th Check Provision

The Plan provides for a 13th check if there is a net actuarial gain for the previous year. The Plan experienced a loss during the prior plan year and moreover the cumulative balance of actuarial gains and losses is negative (a net loss), so no funds are available to provide 13th checks in 2019.

Conclusion

The funded ratio is 67.8% this year, whereas it was over 100% in the year 2000. Steps have been taken in recent years to address this issue, such as strengthening the actuarial assumptions, including lowering the investment return assumption from 8.5% to 7.5% over time, applying an additional \$1,150,000 towards the unfunded liability, and reducing the amortization period in the amortization of the unfunded liability to a maximum of 25 years.

The Florida Retirement System (FRS) updated its mortality tables in its July 1, 2019 actuarial valuation report. These new tables will be required to be used in the October 1, 2020 Actuarial valuation report for this plan (next year), as Florida Statutes Chapter 112.63(1)(f) mandates the use of the mortality tables used in either of the two most recently published actuarial valuation reports of FRS. We note that it has been over 6 years since the last Experience Study was performed for this Plan (dated 1/31/2014). In consideration of the upcoming required change in the mortality table, we recommend an Experience Study be performed in advance of completing the October 1, 2020 Actuarial Valuation report.

The remainder of this Report includes detailed actuarial valuation results, financial information, miscellaneous information and statistics, and a summary of plan provisions.



RISKS ASSOCIATED WITH THE MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
5. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution rate shown on page 1 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status



and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

| | <u>2019</u> | <u>2018</u> |
|--|-------------|-------------|
| Ratio of the market value of assets to payroll | 8.88 | 9.23 |
| Ratio of actuarial accrued liability to payroll | 12.81 | 13.18 |
| Ratio of actives to retirees and beneficiaries | 0.94 | 0.95 |
| Ratio of net cash flow to market value of assets | 0.3% | 1.5% |

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.



ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.



CHAPTER REVENUE

Increments in Chapter revenue over that received in 1998 must first be used to fund the cost of compliance with minimum benefits. Once minimums are met, any subsequent additional Chapter revenue must be used to provide extra benefits.

As of the valuation date, all minimum Chapter requirements have been met.

| Actuarial Confirmation of the Use of State Chapter Money | |
|---|------------------|
| 1. Fire Regular | \$ 757,423 |
| Fire Supplemental | 0 |
| Total Base Amount Previous Plan Year | <u>757,423</u> |
| 2. Fire Regular | 830,904 |
| Fire Supplemental | 0 |
| Total Amount Received for Previous Plan Year | <u>830,904</u> |
| 3. Adjustment to Base Amount Due to Reevaluation of COLA cost | 304,962 |
| 4. Excess Funds for Previous Plan Year | (231,481) |
| 5. Excess Funds Restored from Prior Year Usage* | 223,377 |
| 6. Accumulated Excess at Beginning of Previous Year | 2,074,002 |
| 7. Accumulated Excess as of September 30, 2019 (Available for Benefit Improvements) | 2,065,898 |
| 8. Excess Used as of October 1, 2019 to Reduce the Plan's Unfunded Actuarial Liability | 75,000 |
| 9. Accumulated Excess as of Valuation Date | 1,990,898 |
| 8. Fire Regular | 1,062,385 |
| Fire Supplemental | 0 |
| Base Amount This Plan Year - Fire | <u>1,062,385</u> |

* \$223,377 was credited to the excess State contribution reserve from prior year usage due to re-valuation of the cost of the COLA. See GRS' letter regarding the cost of the COLA dated November 5, 2019 for more details.



SECTION B

VALUATION RESULTS

| PARTICIPANT DATA | | |
|--|------------------------|------------------------|
| | October 1, 2019 | October 1, 2018 |
| ACTIVE MEMBERS | | |
| Number | 115 | 113 |
| Covered Annual Payroll | \$ 11,504,436 | \$ 10,393,865 |
| Average Annual Payroll | \$ 100,039 | \$ 91,981 |
| Average Age | 38.7 | 38.8 |
| Average Past Service | 10.8 | 10.9 |
| Average Age at Hire | 27.9 | 27.9 |
| RETIREES & BENEFICIARIES & DROP | | |
| Number | 120 | 117 |
| Annual Benefits | \$ 7,240,871 | \$ 6,886,410 |
| Average Annual Benefit | \$ 60,341 | \$ 58,858 |
| Average Age | 61.7 | 61.9 |
| DISABILITY RETIREES | | |
| Number | 2 | 2 |
| Annual Benefits | \$ 113,920 | \$ 113,033 |
| Average Annual Benefit | \$ 56,960 | \$ 56,517 |
| Average Age | 49.8 | 48.8 |
| TERMINATED VESTED MEMBERS | | |
| Number | 2 | 2 |
| Annual Benefits | \$ 74,760 | \$ 74,494 |
| Average Annual Benefit | \$ 37,380 | \$ 37,247 |
| Average Age | 44.6 | 43.6 |



ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION (ADEC)

| | October 1, 2019 <i>After Plan Changes and After Additional UAL Payment</i> | October 1, 2019 <i>After Plan Changes and Before Additional UAL Payment</i> | October 1, 2019 <i>Before Changes and Additional UAL Payment</i> | October 1, 2018 |
|---|---|--|---|-----------------|
| A. Valuation Date | | | | |
| B. ADEC to Be Paid During Fiscal Year Ending | 9/30/2021 | 9/30/2021 | 9/30/2021 | 9/30/2020 |
| C. Assumed Date of Employer Contrib. | 10/1/2020 | 10/1/2020 | 10/1/2020 | 10/1/2019 |
| D. Annual Payment to Amortize Unfunded Actuarial Liability | \$ 3,818,804 | \$ 3,845,003 | \$ 3,810,022 | \$ 3,593,023 |
| E. Employer Normal Cost | 2,426,234 | 2,426,234 | 2,376,611 | 2,230,990 |
| F. ADEC if Paid on the Valuation Date: D+E | 6,245,038 | 6,271,237 | 6,186,633 | 5,824,013 |
| G. ADEC Adjusted for Frequency of Payments | 6,245,038 | 6,271,237 | 6,186,633 | 5,824,013 |
| H. ADEC as % of Covered Payroll | 54.28 % | 54.51 % | 53.78 % | 56.03 % |
| I. Covered Payroll per Valuation | 11,504,436 | 11,504,436 | 11,504,436 | 10,393,865 |
| J. Assumed Rate of Increase in Covered Payroll to Contribution Year | 2.50 % | 2.50 % | 2.50 % | 2.50 % |
| K. Covered Payroll for Contribution Year | 11,792,047 | 11,792,047 | 11,792,047 | 10,653,712 |
| L. ADEC for Contribution Year: H x K | 6,400,723 | 6,427,845 | 6,341,763 | 5,969,275 |
| M. Estimate of State Allocated Revenue in Contribution Year (including amounts from Accumulated Excess Reserve) | 1,062,385 | 1,062,385 | 1,062,385 | 1,062,385 |
| N. Actuarially Determined Employer Contribution (ADEC) in Contribution Year | 5,338,338 | 5,365,460 | 5,279,378 | 4,906,890 |
| O. ADEC as % of Covered Payroll in Contribution Year: N ÷ K | 45.27 % | 45.50 % | 44.77 % | 46.06 % |
| P. Estimated Amount of Accumulated Excess Premium Tax Revenue Used to Offset ADEC (If Actual State Revenue = \$830,904) | 231,481 | 231,481 | 231,481 | 231,481 |



ACTUARIAL VALUE OF BENEFITS AND ASSETS

| A. Valuation Date | October 1, 2019 <i>After Plan Changes and After Additional UAL Payment</i> | October 1, 2019 <i>After Plan Changes and Before Additional UAL Payment</i> | October 1, 2019 <i>Before Changes and Additional UAL Payment</i> | October 1, 2018 |
|---|---|--|---|-------------------|
| B. Actuarial Present Value of All Projected Benefits for | | | | |
| 1. Active Members | | | | |
| a. Service Retirement Benefits | \$ 73,527,763 | \$ 73,527,763 | \$ 72,808,564 | \$ 67,200,213 |
| b. Vesting Benefits | 4,351,145 | 4,351,145 | 4,350,804 | 4,079,340 |
| c. Disability Benefits | 2,048,867 | 2,048,867 | 1,976,530 | 1,820,028 |
| d. Preretirement Death Benefits | 888,878 | 888,878 | 752,942 | 692,568 |
| e. Return of Member Contributions | 163,014 | 163,014 | 164,961 | 152,268 |
| f. Total | <u>80,979,667</u> | <u>80,979,667</u> | <u>80,053,801</u> | <u>73,944,417</u> |
| 2. Inactive Members | | | | |
| a. Service Retirees & Beneficiaries | 92,185,377 | 92,185,377 | 92,185,377 | 86,816,665 |
| b. Disability Retirees | 1,709,561 | 1,709,561 | 1,709,561 | 1,696,135 |
| c. Terminated Vested Members | 973,039 | 973,039 | 973,039 | 898,572 |
| d. Total | <u>94,867,977</u> | <u>94,867,977</u> | <u>94,867,977</u> | <u>89,411,372</u> |
| 3. Total for All Members | 175,847,644 | 175,847,644 | 174,921,778 | 163,355,789 |
| C. Actuarial Accrued (Past Service) Liability | 147,354,005 | 147,354,005 | 146,830,561 | 136,944,352 |
| D. Actuarial Value of Accumulated Plan Benefits per FASB No. 35 | 134,298,238 | 134,298,238 | 134,133,025 | 126,043,268 |
| E. Plan Assets | | | | |
| 1. Market Value | 102,137,758 | 102,062,758 | 102,062,758 | 95,986,708 |
| 2. Actuarial Value | 99,976,001 | 99,901,001 | 99,901,001 | 91,627,599 |
| F. Unfunded Actuarial Accrued Liability: C-E2 | 47,378,004 | 47,453,004 | 46,929,560 | 45,316,753 |
| G. Actuarial Present Value of Projected Covered Payroll | 91,993,351 | 91,993,351 | 91,993,351 | 83,828,577 |
| H. Actuarial Present Value of Projected Member Contributions | 11,039,202 | 11,039,202 | 11,039,202 | 10,059,429 |
| I. Accumulated Value of Member Contributions | 10,588,733 | 10,588,733 | 10,588,733 | 10,119,252 |
| J. Funded Ratio: E2/C | 67.8% | 67.8% | 68.0% | 66.9% |



**ENTRY AGE NORMAL METHOD
CALCULATION OF EMPLOYER NORMAL COST**

| A. Valuation Date | October 1, 2019 <i>After Plan Changes</i> | October 1, 2019 <i>Before Changes</i> | October 1, 2018 |
|--|--|--|-----------------|
| B. Normal Cost for | | | |
| 1. Service Retirement Benefits | \$ 3,086,993 | \$ 3,056,244 | \$ 2,843,729 |
| 2. Vesting Benefits | 285,670 | 285,654 | 259,431 |
| 3. Disability Benefits | 175,099 | 163,905 | 149,319 |
| 4. Preretirement Death Benefits | 50,830 | 42,727 | 38,432 |
| 5. Return of Member Contributions | <u>45,014</u> | <u>45,453</u> | <u>41,053</u> |
| 6. Total for Future Benefits | 3,643,606 | 3,593,983 | 3,331,964 |
| 7. Assumed Amount for Administrative Expenses | <u>163,160</u> | <u>163,160</u> | <u>146,290</u> |
| 8. Total Normal Cost | 3,806,766 | 3,757,143 | 3,478,254 |
| C. Expected Member Contribution | 1,380,532 | 1,380,532 | 1,247,264 |
| D. Employer Normal Cost: B8-C | 2,426,234 | 2,376,611 | 2,230,990 |
| E. Employer Normal Cost as a % of Covered Payroll | 21.09% | 20.66% | 21.46% |



LIQUIDATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

BEFORE CHANGES

| A. UAAL Amortization Period and Payments | | | | | |
|--|-----------------------------|---------------|-----------------|--------------|--------------|
| Original UAAL | | | Current UAAL | | |
| Date Established | Amortization Period (Years) | Amount | Years Remaining | Amount | Payment |
| 10/1/1996 | 26 | \$ 807,234 | 3 | \$ 150,836 | \$ 52,691 |
| 10/1/1997 | 30 | 1,201,102 | 8 | 999,146 | 146,674 |
| 10/1/1999 | 30 | 613,865 | 10 | 605,607 | 74,339 |
| 10/1/2000 | 30 | (1,240,378) | 11 | (1,246,290) | (142,146) |
| 10/1/2001 | 30 | 857,564 | 12 | 905,495 | 96,742 |
| 10/1/2003 | 30 | 4,337,161 | 14 | 4,949,752 | 473,075 |
| 10/1/2004 | 30 | 4,373,725 | 15 | 5,087,958 | 463,541 |
| 10/1/2005 | 30 | (1,004,416) | 16 | (1,186,841) | (103,512) |
| 10/1/2005 | 30 | 3,040,117 | 16 | 3,592,277 | 313,305 |
| 10/1/2006 | 30 | 2,426,747 | 17 | 2,885,399 | 241,811 |
| 10/1/2006 | 30 | 1,889,229 | 17 | 2,246,292 | 188,251 |
| 10/1/2007 | 30 | (12,675) | 18 | (15,027) | (1,214) |
| 10/1/2007 | 30 | (1,424,046) | 18 | (1,690,961) | (136,616) |
| 10/1/2008 | 30 | 4,046,900 | 19 | 4,788,883 | 374,080 |
| 10/1/2009 | 30 | 3,681,910 | 20 | 4,330,134 | 327,883 |
| 10/1/2010 | 30 | 1,249,043 | 21 | 1,457,411 | 107,225 |
| 10/1/2010 | 30 | 2,256,012 | 21 | 2,632,367 | 193,669 |
| 10/1/2010 | 30 | (43,572) | 21 | (50,840) | (3,740) |
| 10/1/2011 | 30 | 1,378,822 | 22 | 1,581,971 | 113,323 |
| 10/1/2011 | 30 | 3,739,943 | 22 | 4,290,976 | 307,379 |
| 10/1/2012 | 30 | 1,446,560 | 23 | 1,605,182 | 112,167 |
| 10/1/2012 | 30 | (161,237) | 23 | (178,917) | (12,502) |
| 10/1/2013 | 30 | 199,486 | 24 | 219,202 | 14,968 |
| 10/1/2013 | 30 | 818,309 | 24 | 899,185 | 61,399 |
| 10/1/2013 | 30 | 3,401,164 | 24 | 3,737,311 | 255,194 |
| 10/1/2014 | 30 | (408,227) | 24 | (439,165) | (29,987) |
| 10/1/2014 | 30 | 1,753,497 | 24 | 1,886,393 | 128,808 |
| 10/1/2015 | 30 | (209,489) | 24 | (220,620) | (15,065) |
| 10/1/2016 | 30 | (1,022,696) | 24 | (1,055,149) | (72,048) |
| 10/1/2016 | 30 | 5,982,170 | 24 | 6,171,999 | 421,441 |
| 10/1/2017 | 30 | (691,612) | 24 | (694,724) | (47,438) |
| 10/1/2018 | 30 | (2,764,199) | 24 | (2,744,157) | (187,379) |
| 10/1/2018 | 30 | (1,216,631) | 24 | (1,207,809) | (82,473) |
| 10/1/2019 | 25 | 2,636,284 | 25 | 2,636,284 | 176,177 |
| | | \$ 41,937,666 | | \$46,929,560 | \$ 3,810,022 |



LIQUIDATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

AFTER PLAN CHANGES AND BEFORE ADDITIONAL UAAL PAYMENT

| A. UAAL Amortization Period and Payments | | | | | |
|--|-----------------------------|---------------|-----------------|--------------|--------------|
| Original UAAL | | | Current UAAL | | |
| Date Established | Amortization Period (Years) | Amount | Years Remaining | Amount | Payment |
| 10/1/1996 | 26 | \$ 807,234 | 3 | \$ 150,836 | \$ 52,691 |
| 10/1/1997 | 30 | 1,201,102 | 8 | 999,146 | 146,674 |
| 10/1/1999 | 30 | 613,865 | 10 | 605,607 | 74,339 |
| 10/1/2000 | 30 | (1,240,378) | 11 | (1,246,290) | (142,146) |
| 10/1/2001 | 30 | 857,564 | 12 | 905,495 | 96,742 |
| 10/1/2003 | 30 | 4,337,161 | 14 | 4,949,752 | 473,075 |
| 10/1/2004 | 30 | 4,373,725 | 15 | 5,087,958 | 463,541 |
| 10/1/2005 | 30 | (1,004,416) | 16 | (1,186,841) | (103,512) |
| 10/1/2005 | 30 | 3,040,117 | 16 | 3,592,277 | 313,305 |
| 10/1/2006 | 30 | 2,426,747 | 17 | 2,885,399 | 241,811 |
| 10/1/2006 | 30 | 1,889,229 | 17 | 2,246,292 | 188,251 |
| 10/1/2007 | 30 | (12,675) | 18 | (15,027) | (1,214) |
| 10/1/2007 | 30 | (1,424,046) | 18 | (1,690,961) | (136,616) |
| 10/1/2008 | 30 | 4,046,900 | 19 | 4,788,883 | 374,080 |
| 10/1/2009 | 30 | 3,681,910 | 20 | 4,330,134 | 327,883 |
| 10/1/2010 | 30 | 1,249,043 | 21 | 1,457,411 | 107,225 |
| 10/1/2010 | 30 | 2,256,012 | 21 | 2,632,367 | 193,669 |
| 10/1/2010 | 30 | (43,572) | 21 | (50,840) | (3,740) |
| 10/1/2011 | 30 | 1,378,822 | 22 | 1,581,971 | 113,323 |
| 10/1/2011 | 30 | 3,739,943 | 22 | 4,290,976 | 307,379 |
| 10/1/2012 | 30 | 1,446,560 | 23 | 1,605,182 | 112,167 |
| 10/1/2012 | 30 | (161,237) | 23 | (178,917) | (12,502) |
| 10/1/2013 | 30 | 199,486 | 24 | 219,202 | 14,968 |
| 10/1/2013 | 30 | 818,309 | 24 | 899,185 | 61,399 |
| 10/1/2013 | 30 | 3,401,164 | 24 | 3,737,311 | 255,194 |
| 10/1/2014 | 30 | (408,227) | 24 | (439,165) | (29,987) |
| 10/1/2014 | 30 | 1,753,497 | 24 | 1,886,393 | 128,808 |
| 10/1/2015 | 30 | (209,489) | 24 | (220,620) | (15,065) |
| 10/1/2016 | 30 | (1,022,696) | 24 | (1,055,149) | (72,048) |
| 10/1/2016 | 30 | 5,982,170 | 24 | 6,171,999 | 421,441 |
| 10/1/2017 | 30 | (691,612) | 24 | (694,724) | (47,438) |
| 10/1/2018 | 30 | (2,764,199) | 24 | (2,744,157) | (187,379) |
| 10/1/2018 | 30 | (1,216,631) | 24 | (1,207,809) | (82,473) |
| 10/1/2019 | 25 | 2,636,284 | 25 | 2,636,284 | 176,177 |
| 10/1/2019 | 25 | 523,444 | 25 | 523,444 | 34,981 |
| | | \$ 42,461,110 | | \$47,453,004 | \$ 3,845,003 |



LIQUIDATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

AFTER PLAN CHANGES AND AFTER ADDITIONAL UAAL PAYMENT

| A. UAAL Amortization Period and Payments | | | | | |
|--|-----------------------------|---------------|-----------------|---------------|--------------|
| Original UAAL | | | Current UAAL | | |
| Date Established | Amortization Period (Years) | Amount | Years Remaining | Amount | Payment |
| 10/1/1996 | 26 | \$ 807,234 | 3 | \$ 75,836 | \$ 26,492 |
| 10/1/1997 | 30 | 1,201,102 | 8 | 999,146 | 146,674 |
| 10/1/1999 | 30 | 613,865 | 10 | 605,607 | 74,339 |
| 10/1/2000 | 30 | (1,240,378) | 11 | (1,246,290) | (142,146) |
| 10/1/2001 | 30 | 857,564 | 12 | 905,495 | 96,742 |
| 10/1/2003 | 30 | 4,337,161 | 14 | 4,949,752 | 473,075 |
| 10/1/2004 | 30 | 4,373,725 | 15 | 5,087,958 | 463,541 |
| 10/1/2005 | 30 | (1,004,416) | 16 | (1,186,841) | (103,512) |
| 10/1/2005 | 30 | 3,040,117 | 16 | 3,592,277 | 313,305 |
| 10/1/2006 | 30 | 2,426,747 | 17 | 2,885,399 | 241,811 |
| 10/1/2006 | 30 | 1,889,229 | 17 | 2,246,292 | 188,251 |
| 10/1/2007 | 30 | (12,675) | 18 | (15,027) | (1,214) |
| 10/1/2007 | 30 | (1,424,046) | 18 | (1,690,961) | (136,616) |
| 10/1/2008 | 30 | 4,046,900 | 19 | 4,788,883 | 374,080 |
| 10/1/2009 | 30 | 3,681,910 | 20 | 4,330,134 | 327,883 |
| 10/1/2010 | 30 | 1,249,043 | 21 | 1,457,411 | 107,225 |
| 10/1/2010 | 30 | 2,256,012 | 21 | 2,632,367 | 193,669 |
| 10/1/2010 | 30 | (43,572) | 21 | (50,840) | (3,740) |
| 10/1/2011 | 30 | 1,378,822 | 22 | 1,581,971 | 113,323 |
| 10/1/2011 | 30 | 3,739,943 | 22 | 4,290,976 | 307,379 |
| 10/1/2012 | 30 | 1,446,560 | 23 | 1,605,182 | 112,167 |
| 10/1/2012 | 30 | (161,237) | 23 | (178,917) | (12,502) |
| 10/1/2013 | 30 | 199,486 | 24 | 219,202 | 14,968 |
| 10/1/2013 | 30 | 818,309 | 24 | 899,185 | 61,399 |
| 10/1/2013 | 30 | 3,401,164 | 24 | 3,737,311 | 255,194 |
| 10/1/2014 | 30 | (408,227) | 24 | (439,165) | (29,987) |
| 10/1/2014 | 30 | 1,753,497 | 24 | 1,886,393 | 128,808 |
| 10/1/2015 | 30 | (209,489) | 24 | (220,620) | (15,065) |
| 10/1/2016 | 30 | (1,022,696) | 24 | (1,055,149) | (72,048) |
| 10/1/2016 | 30 | 5,982,170 | 24 | 6,171,999 | 421,441 |
| 10/1/2017 | 30 | (691,612) | 24 | (694,724) | (47,438) |
| 10/1/2018 | 30 | (2,764,199) | 24 | (2,744,157) | (187,379) |
| 10/1/2018 | 30 | (1,216,631) | 24 | (1,207,809) | (82,473) |
| 10/1/2019 | 25 | 2,636,284 | 25 | 2,636,284 | 176,177 |
| 10/1/2019 | 25 | 523,444 | 25 | 523,444 | 34,981 |
| | | \$ 42,461,110 | | \$ 47,378,004 | \$ 3,818,804 |



B. Amortization Schedule

The UAAL is being amortized as a level percent of payroll over the number of years remaining in the amortization period. The expected amortization schedule is as follows:

| Amortization Schedule | |
|-----------------------|---------------|
| Year | Expected UAAL |
| 2019 | \$ 47,378,004 |
| 2020 | 46,826,161 |
| 2021 | 46,130,278 |
| 2022 | 45,277,006 |
| 2023 | 44,282,581 |
| 2024 | 43,103,821 |
| 2029 | 34,220,439 |
| 2034 | 19,478,734 |
| 2039 | 6,611,784 |
| 2044 | - |



ACTUARIAL GAINS AND LOSSES

The assumptions used to anticipate mortality, employment turnover, investment income, expenses, salary increases, and other factors have been based on long range trends and expectations. Actual experience can vary from these expectations. The variance is measured by the gain and loss for the period involved. If significant long term experience reveals consistent deviation from what has been expected and that deviation is expected to continue, the assumptions should be modified. The net actuarial gain (loss) for the past year is computed as follows:

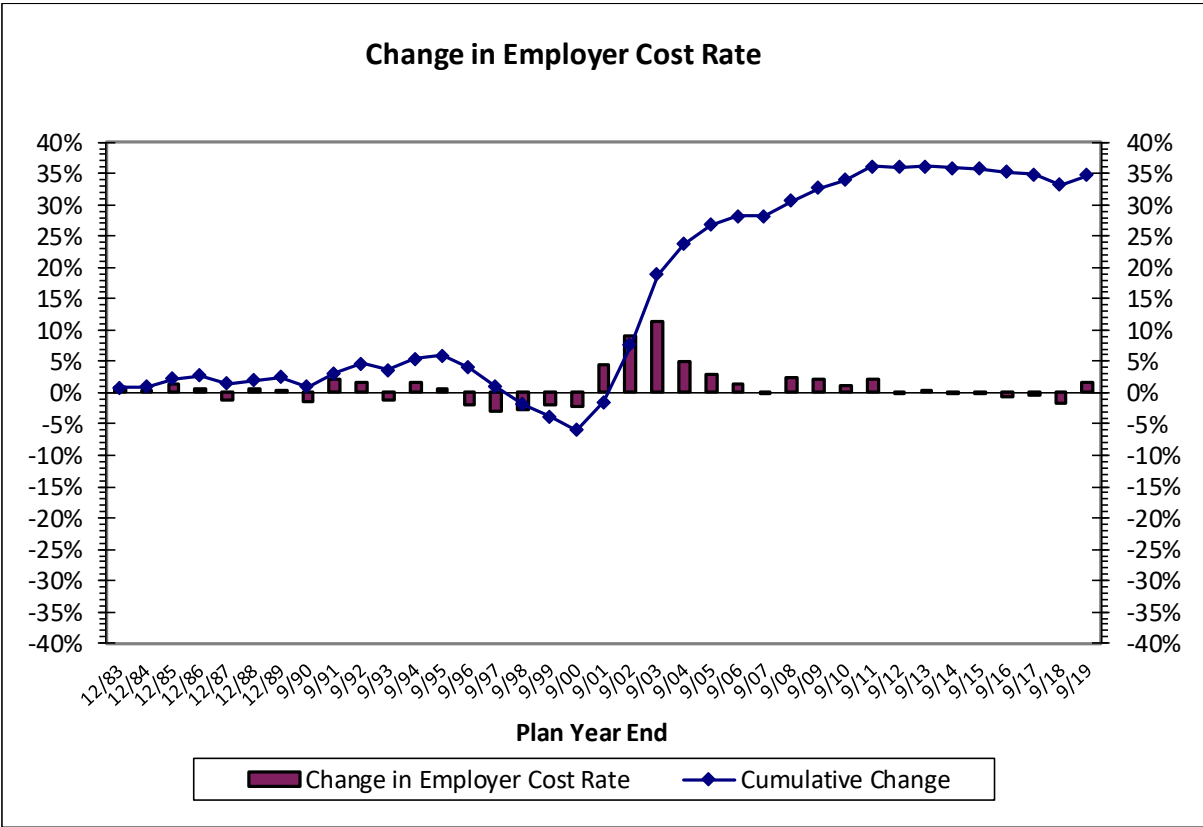
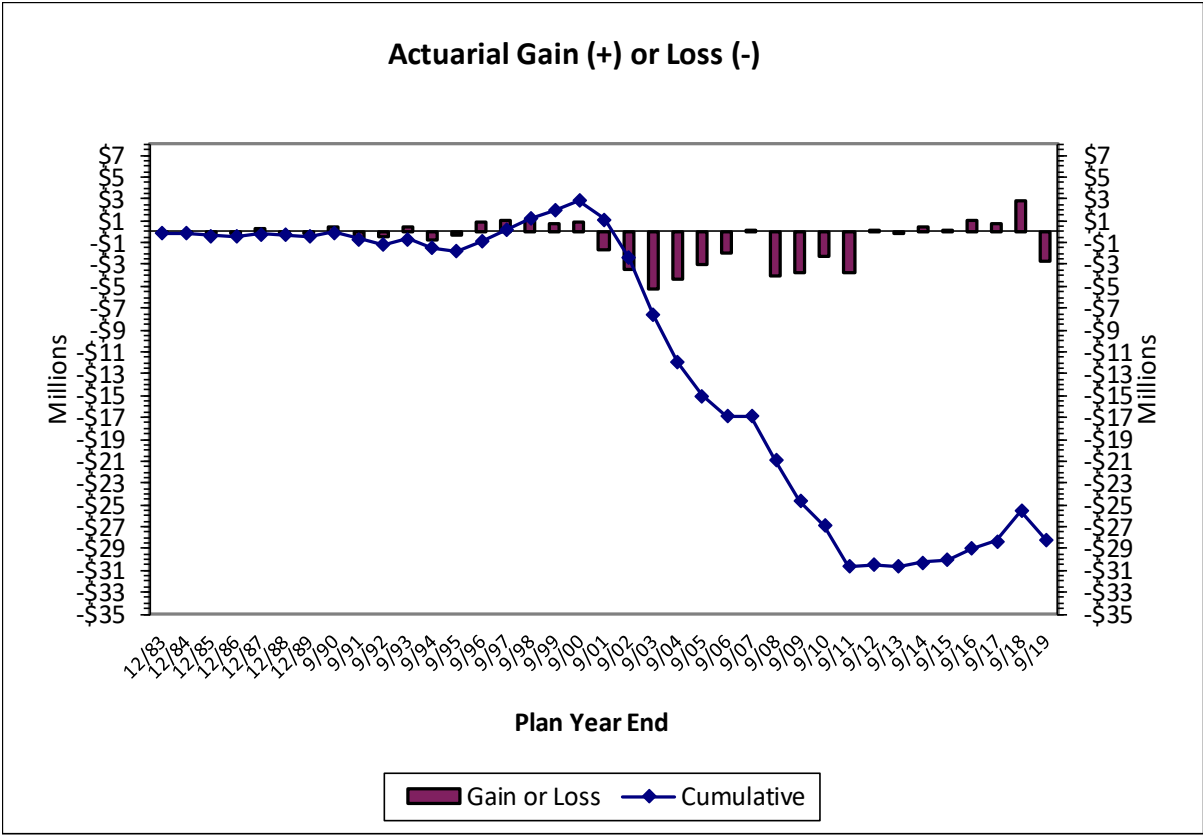
| A. Derivation of the Current UAAL | |
|---|---------------|
| 1. Last Year's UAAL | \$ 45,316,753 |
| 2. Last Year's Employer Normal Cost | 2,230,990 |
| 3. Last Year's Contributions | 6,409,551 |
| 4. Interest at the Assumed Rate on: | |
| a. 1 and 2 for one year | 3,566,081 |
| b. 3 from dates paid | 410,997 |
| c. a - b | 3,155,084 |
| 5. This Year's Expected UAAL: 1 + 2 - 3 + 4c | 44,293,276 |
| 6. This Year's Actual UAAL (Before any changes in benefits and/or assumptions) | 46,929,560 |
| 7. Net Actuarial Gain (Loss): (5) - (6) | (2,636,284) |
| 8. Gain (Loss) due to investments | 499,865 |
| 9. Gain (Loss) due to other sources | (3,136,149) |



Net actuarial gains in previous years have been as follows:

| Year Ended | Change in Employer Cost Rate | Gain (Loss) |
|------------|------------------------------|--------------|
| 12/31/83 | 0.77 % | \$ (111,129) |
| 12/31/84 | 0.13 | (20,619) |
| 12/31/85 | 1.27 | (227,011) |
| 12/31/86 | 0.50 | (99,006) |
| 12/31/87 | (1.18) | 279,837 |
| 12/31/88 | 0.52 | (128,401) |
| 12/31/89 | 0.41 | (106,588) |
| 9/30/90 | (1.42) | 371,790 |
| 9/30/91 | 2.09 | (638,650) |
| 9/30/92 | 1.61 | (476,505) |
| 9/30/93 | (1.07) | 483,965 |
| 9/30/94 | 1.76 | (800,443) |
| 9/30/95 | 0.56 | (270,698) |
| 9/30/96 | (1.95) | 895,789 |
| 9/30/97 | (3.08) | 1,049,747 |
| 9/30/98 | (2.78) | 1,020,121 |
| 9/30/99 | (1.89) | 722,161 |
| 9/30/00 | (2.21) | 891,463 |
| 9/30/01 | 4.44 | (1,682,484) |
| 9/30/02 | 9.11 | (3,495,525) |
| 9/30/03 | 11.31 | (5,238,993) |
| 9/30/04 | 4.88 | (4,373,725) |
| 9/30/05 | 3.04 | (3,040,117) |
| 9/30/06 | 1.44 | (1,889,229) |
| 9/30/07 | (0.01) | 12,675 |
| 9/30/08 | 2.33 | (4,056,993) |
| 9/30/09 | 2.16 | (3,681,910) |
| 9/30/10 | 1.25 | (2,256,012) |
| 9/30/11 | 2.12 | (3,739,943) |
| 9/30/12 | (0.09) | 161,237 |
| 9/30/13 | 0.12 | (199,486) |
| 9/30/14 | (0.22) | 408,227 |
| 9/30/15 | (0.11) | 209,489 |
| 9/30/16 | (0.57) | 1,022,696 |
| 9/30/17 | (0.37) | 691,612 |
| 9/30/18 | (1.62) | 2,764,199 |
| 9/30/19 | 1.53 | (2,636,284) |





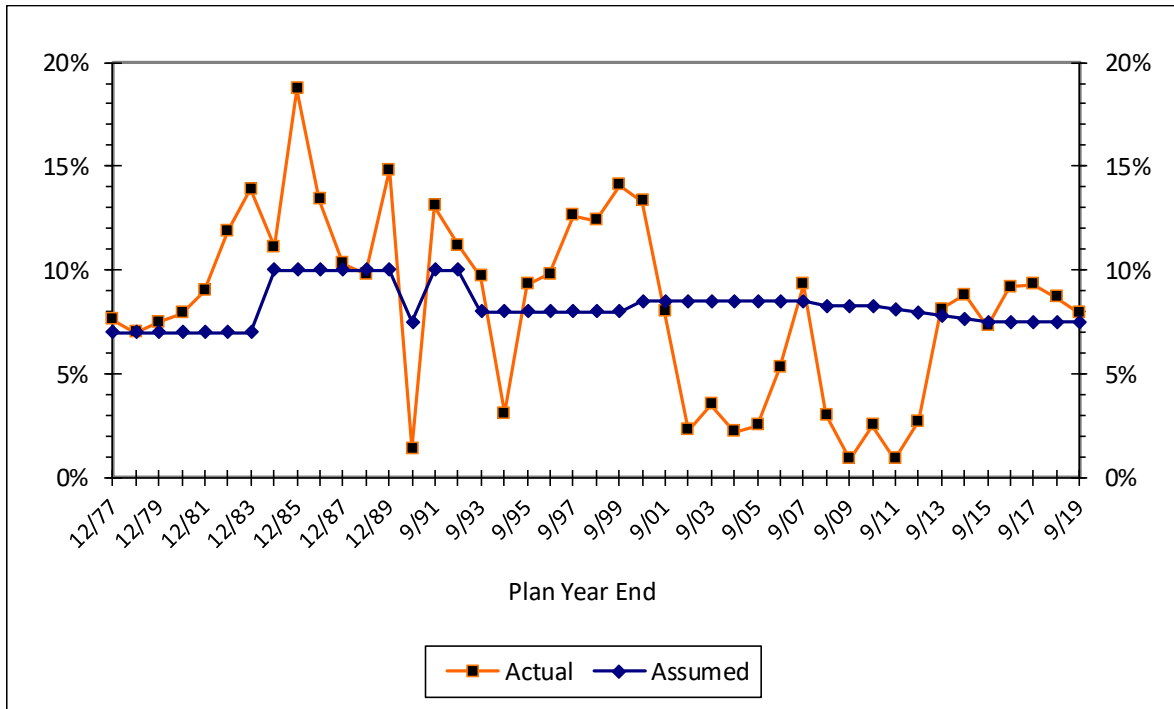
The fund earnings and salary increase assumptions have considerable impact on the cost of the Plan so it is important that they are in line with the actual experience. The following table shows the actual fund earnings and salary increase rates compared to the assumed rates for the last few years:

| Year Ending | Investment Return | | Salary Increases | |
|--------------------|-------------------|---------|------------------|-----------|
| | Actual | Assumed | Actual | Assumed |
| 12/31/1977 | 7.6 % | 7.0 % | | 10.3 % |
| 12/31/1978 | 7.0 | 7.0 | 21.3 % | (2 years) |
| 12/31/1979 | 7.5 | 7.0 | | 10.3 |
| 12/31/1980 | 7.9 | 7.0 | 19.0 | (2 years) |
| 12/31/1981 | 9.0 | 7.0 | 30.5 | 7.0 |
| 12/31/1982 | 11.9 | 7.0 | 11.0 | 7.0 |
| 12/31/1983 | 13.9 | 7.0 | 6.4 | 7.0 |
| 12/31/1984 | 11.1 | 10.0 | 8.8 | 10.0 |
| 12/31/1985 | 18.7 | 10.0 | 14.5 | 10.0 |
| 12/31/1986 | 13.4 | 10.0 | 11.4 | 10.0 |
| 12/31/1987 | 10.3 | 10.0 | 19.7 | 10.0 |
| 12/31/1988 | 9.8 | 10.0 | 6.1 | 10.0 |
| 12/31/1989 | 14.8 | 10.0 | 12.8 | 10.0 |
| 9/30/1990 (9 mos.) | 1.4 | 7.5 | 6.7 | 7.5 |
| 9/30/1991 | 13.1 | 10.0 | 8.0 | 10.0 |
| 9/30/1992 | 11.2 | 10.0 | 4.9 | 10.0 |
| 9/30/1993 | 9.7 | 8.0 | 4.0 | 6.5 |
| 9/30/1994 | 3.1 | 8.0 | 2.0 | 6.5 |
| 9/30/1995 | 9.3 | 8.0 | 10.3 | 6.5 |
| 9/30/1996 | 9.8 | 8.0 | (0.2) | 6.5 |
| 9/30/1997 | 12.6 | 8.0 | 5.9 | 6.5 |
| 9/30/1998 | 12.4 | 8.0 | 6.1 | 6.5 |
| 9/30/1999 | 14.1 | 8.0 | 13.3 | 6.5 |
| 9/30/2000 | 13.3 | 8.5 | 10.3 | 6.5 |
| 9/30/2001 | 8.0 | 8.5 | 4.8 | 6.5 |
| 9/30/2002 | 2.3 | 8.5 | 12.1 | 6.5 |
| 9/30/2003 | 3.5 | 8.5 | 10.0 | 6.5 |
| 9/30/2004 | 2.2 | 8.5 | 11.0 | 6.5 |
| 9/30/2005 | 2.5 | 8.5 | 11.7 | 6.5 |
| 9/30/2006 | 5.3 | 8.5 | 13.3 | 9.2 |
| 9/30/2007 | 9.3 | 8.50 | 9.2 | 8.9 |
| 9/30/2008 | 3.0 | 8.25 | 13.6 | 8.9 |
| 9/30/2009 | 0.9 | 8.25 | 7.6 | 8.9 |
| 9/30/2010 | 2.5 | 8.25 | 1.8 | 8.9 |
| 9/30/2011 | 0.9 | 8.10 | 3.7 | 8.1 |
| 9/30/2012 | 2.7 | 7.95 | (2.8) | 7.1 |
| 9/30/2013 | 8.1 | 7.80 | 1.9 | 8.7 |
| 9/30/2014 | 8.8 | 7.65 | 7.2 | 6.0 |
| 9/30/2015 | 7.3 | 7.50 | 4.9 | 6.2 |
| 9/30/2016 | 9.2 | 7.50 | 6.3 | 5.9 |
| 9/30/2017 | 9.3 | 7.50 | 8.4 | 6.3 |
| 9/30/2018 | 8.7 | 7.50 | 4.2 | 6.1 |
| 9/30/2019 | 7.9 | 7.50 | 14.9 | 6.7 |
| Averages | 8.2 % | --- | 8.6 % | --- |

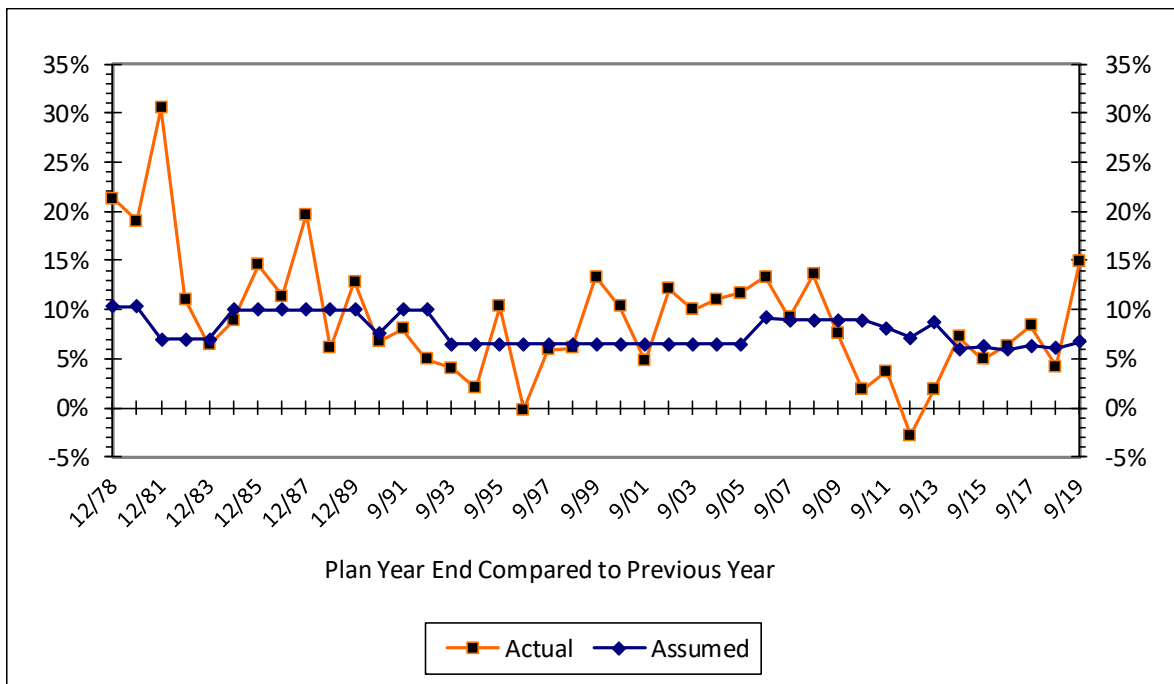
The actual investment return rates shown above are based on the actuarial value of assets. The actual salary increase rates shown above are the increases received by those active members who were included in the actuarial valuations both at the beginning and the end of each year.



History of Investment Return Based on Actuarial Value of Assets



History of Salary Increases



**Actual (A) Compared to Expected (E) Decrements
Among Active Employees**

| Year Ended | Number Added During Year | | Service & DROP Retirement | | Disability Retirement | | Death | | Terminations | | | | Active Members End of Year |
|----------------|--------------------------|-----|---------------------------|----|-----------------------|---|-------|---|--------------|-------|--------|----|----------------------------|
| | A | E | A | E | A | E | A | E | Vested | Other | Totals | | |
| | | | | | | | | | A | A | A | E | |
| 9/30/2002 | 1 | 10 | 6 | 5 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 3 | 83 |
| 9/30/2003 | 15 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 97 |
| 9/30/2004 | 22 | 14 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 105 |
| 9/30/2005 | 1 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 102 |
| 9/30/2006 | 19 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 4 | 118 |
| 9/30/2007 | 5 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 4 | 119 |
| 9/30/2008 | 5 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 123 |
| 9/30/2009 | 1 | 6 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 118 |
| 9/30/2010 | 11 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 125 |
| 9/30/2011 | 0 | 11 | 10 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 114 |
| 9/30/2012 | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 115 |
| 9/30/2013 | 10 | 7 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 118 |
| 9/30/2014 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 119 |
| 9/30/2015 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 118 |
| 9/30/2016 | 11 | 7 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 122 |
| 9/30/2017 | 10 | 8 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 2 | 124 |
| 9/30/2018 | 1 | 12 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 113 |
| 9/30/2019 | 8 | 6 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 115 |
| 9/30/2020 | | | | 1 | | 0 | | 0 | | | | 2 | |
| 18 Yr Totals * | 127 | 104 | 72 | 57 | 2 | 0 | 0 | 0 | 7 | 23 | 30 | 57 | |



Cumulative Actuarial Gains (Losses)

The Plan provides for a 13th check if there is a net actuarial gain for the previous year. However, there is a limitation on 13th checks tied to actuarial gains provided in Chapter 112.61, Florida Statutes. The cumulative amount used to pay for 13th checks may not exceed the cumulative amount of actuarial gains. Since there was an actuarial loss during the prior plan year and the cumulative amount of gains is negative (a net loss), no 13th check is payable.

| Cumulative Actuarial Gains (Losses) | | | | |
|--|---|---------------------------------|-------------------|-----------------------------------|
| Year Ending 9/30 | Balance at Beginning of Year | Gain (Loss) for Year | 13th Check | Balance at End of Year |
| 2001 | 0 | (1,682,484) | 0 | (1,682,484) |
| 2002 | (1,682,484) | (3,495,525) | 0 | (5,178,009) |
| 2003 | (5,178,009) | (5,238,993) | 0 | (10,417,002) |
| 2004 | (10,417,002) | (4,373,725) | 0 | (14,790,727) |
| 2005 | (14,790,727) | (3,040,117) | 0 | (17,830,844) |
| 2006 | (17,830,844) | (1,889,229) | 0 | (19,720,073) |
| 2007 | (19,720,073) | 12,675 | 0 | (19,707,398) |
| 2008 | (19,707,398) | (4,056,993) | 0 | (23,764,391) |
| 2009 | (23,764,391) | (3,681,910) | 0 | (27,446,301) |
| 2010 | (27,446,301) | (2,256,012) | 0 | (29,702,313) |
| 2011 | (29,702,313) | (3,739,943) | 0 | (33,442,256) |
| 2012 | (33,442,256) | 161,237 | 0 | (33,281,019) |
| 2013 | (33,281,019) | (199,486) | 0 | (33,480,505) |
| 2014 | (33,480,505) | 408,227 | 0 | (33,072,278) |
| 2015 | (33,072,278) | 209,489 | 0 | (32,862,789) |
| 2016 | (32,862,789) | 1,022,696 | 0 | (31,840,093) |
| 2017 | (31,840,093) | 691,612 | 0 | (31,148,481) |
| 2018 | (31,148,481) | 2,764,199 | 0 | (28,384,282) |
| 2019 | (28,384,282) | (2,636,284) | 0 | (31,020,566) |



RECENT HISTORY OF VALUATION RESULTS

| Valuation Date | Number of | | Covered Annual Payroll | Actuarial Value of Assets | Actuarial Accrued Liability (AAL) | Unfunded AAL (UFAAL) | Funded Ratio | Employer Normal Cost | |
|----------------|----------------|------------------|------------------------|---------------------------|-----------------------------------|----------------------|--------------|----------------------|--------------|
| | Active Members | Inactive Members | | | | | | Amount | % of Payroll |
| 10/1/91 | 87 | 14 | \$ 4,140,245 | \$ 10,146,641 | \$ 11,062,660 | \$ 916,019 | 91.7 % | \$ 524,296 | 12.66 % |
| 10/1/92 | 85 | 15 | 4,161,027 | 11,900,656 | 13,491,102 | 1,590,446 | 88.2 | 455,150 | 10.94 |
| 10/1/93 | 89 | 15 | 4,423,684 | 13,756,391 | 14,807,586 | 1,051,195 | 92.9 | 437,594 | 9.89 |
| 10/1/94 | 89 | 16 | 4,481,528 | 14,804,836 | 16,168,850 | 1,364,014 | 91.6 | 539,543 | 12.04 |
| 10/1/95 | 89 | 19 | 4,839,178 | 16,884,081 | 18,482,980 | 1,598,899 | 91.3 | 604,768 | 12.50 |
| 10/1/96 | 90 | 22 | 4,695,354 | 19,269,217 | 20,604,396 | 1,335,179 | 93.5 | 527,257 | 11.23 |
| 10/1/97 | 88 | 39 | 4,238,988 | 22,220,848 | 23,723,850 | 1,503,002 | 93.7 | 361,957 | 8.54 |
| 10/1/98 | 90 | 39 | 4,543,670 | 24,978,058 | 25,301,177 | 323,119 | 98.7 | 258,961 | 5.70 |
| 10/1/99 | 92 | 40 | 5,083,063 | 28,290,983 | 28,286,754 | (4,229) | 100.0 | 217,814 | 4.29 |
| 10/1/00 | 90 | 46 | 5,305,002 | 31,629,211 | 29,402,853 | (2,226,358) | 107.6 | 72,822 | 1.37 |
| 10/1/01 | 92 | 53 | 5,201,958 | 33,397,848 | 34,916,820 | 1,518,972 | 95.6 | 475,187 | 9.13 |
| 10/1/02 | 83 | 60 | 5,143,446 | 33,877,028 | 39,432,154 | 5,555,126 | 85.9 | 956,733 | 18.60 |
| 10/1/03 | 97 | 60 | 6,079,095 | 34,694,072 | 42,431,717 | 7,737,645 | 81.8 | 979,363 | 16.11 |
| 10/1/04 | 105 | 73 | 6,135,813 | 35,118,847 | 47,240,329 | 12,121,482 | 74.3 | 995,918 | 16.23 |
| 10/1/05 | 102 | 75 | 6,763,318 | 35,386,328 | 49,620,257 | 14,233,929 | 71.3 | 1,186,288 | 17.54 |
| 10/1/06 | 118 | 75 | 8,152,400 | 36,863,141 | 55,565,182 | 18,702,041 | 66.3 | 1,256,931 | 15.42 |
| 10/1/07 | 119 | 76 | 8,806,744 | 43,503,237 | 61,054,498 | 17,551,261 | 71.3 | 1,490,649 | 16.93 |
| 10/1/08 | 123 | 77 | 10,130,185 | 45,330,615 | 67,141,898 | 21,811,283 | 67.5 | 1,711,705 | 16.90 |
| 10/1/09 | 118 | 82 | 10,350,054 | 46,448,767 | 72,211,379 | 25,762,612 | 64.3 | 1,724,525 | 16.66 |
| 10/1/10 | 125 | 84 | 10,506,008 | 48,521,964 | 78,046,241 | 29,524,277 | 62.2 | 1,831,347 | 17.43 |
| 10/1/11 | 114 | 93 | 9,781,772 | 49,140,415 | 84,384,761 | 35,244,346 | 58.2 | 1,793,275 | 18.33 |
| 10/1/12 | 115 | 94 | 9,375,520 | 50,548,749 | 88,420,130 | 37,871,381 | 57.2 | 1,787,181 | 19.06 |
| 10/1/13 | 118 | 100 | 9,128,801 | 55,474,480 | 98,003,969 | 42,529,489 | 56.6 | 1,772,505 | 19.42 |
| 10/1/14 | 119 | 99 | 9,823,480 | 60,766,720 | 105,309,014 | 44,542,294 | 57.7 | 2,014,298 | 20.50 |
| 10/1/15 | 118 | 101 | 10,221,317 | 66,257,757 | 110,826,525 | 44,568,768 | 59.8 | 2,105,539 | 20.60 |
| 10/1/16 | 122 | 107 | 10,684,549 | 74,236,519 | 123,821,633 | 49,585,114 | 60.0 | 2,394,174 | 22.41 |
| 10/1/17 | 124 | 112 | 11,282,228 | 82,643,710 | 132,091,634 | 49,447,924 | 62.6 | 2,519,728 | 22.33 |
| 10/1/18 | 113 | 121 | 10,393,865 | 91,627,599 | 136,944,352 | 45,316,753 | 66.9 | 2,230,990 | 21.46 |
| 10/1/19 | 115 | 124 | 11,504,436 | 99,976,001 | 147,354,005 | 47,378,004 | 67.8 | 2,426,234 | 21.09 |



| RECENT HISTORY OF REQUIRED AND ACTUAL CONTRIBUTIONS | | | | | | | | | | |
|---|--|------------------------|--------------|-----------------|--------------|--------------|--------------|----------------------|-----------|-----------|
| Valuation | End of Year To Which Valuation Applies | Required Contributions | | | | | | Actual Contributions | | |
| | | Employer & State | | Estimated State | | Net Employer | | Employer | State | Total |
| | | Amount | % of Payroll | Amount | % of Payroll | Amount | % of Payroll | | | |
| 10/1/91 | 9/30/92 | 634,614 | 15.33 | 158,161 | 3.82 | 476,453 | 11.51 | 467,841 | 166,773 | 634,614 |
| 10/1/92 | 9/30/93 | 647,325 | 15.56 | 166,773 | 4.01 | 480,552 | 11.55 | 489,303 | 158,022 | 647,325 |
| 10/1/93 | 9/30/94 | 626,697 | 14.17 | 158,022 | 3.57 | 468,675 | 10.59 | 423,653 | 203,044 | 626,697 |
| 10/1/94 | 9/30/95 | 737,247 | 16.45 | 195,089 | 4.35 | 542,158 | 12.10 | 518,847 | 218,401 | 737,248 |
| 10/1/95 | 9/30/96 | 807,150 | 16.68 | 218,401 | 4.51 | 588,749 | 12.17 | 521,707 | 285,443 | 807,150 |
| 10/1/96 | 9/30/97 | 776,723 | 16.54 | 285,443 | 6.08 | 491,280 | 10.46 | 422,898 | 353,826 | 776,724 |
| 10/1/97 | 9/30/98 | 710,387 | 16.76 | 349,086 | 8.24 | 361,301 | 8.52 | 349,375 | 361,012 | 710,387 |
| 10/1/98 | 9/30/99 | 597,198 | 13.14 | 351,241 | 7.73 | 245,957 | 5.41 | 245,957 | 361,012 | 606,969 |
| 10/1/99 | 9/30/00 | 512,235 | 10.08 | 351,241 | 6.91 | 160,994 | 3.17 | 80,559 | 365,934 | 446,493 |
| 10/1/00 | 9/30/01 | 292,146 | 5.51 | 365,934 | 6.90 | 0 | 0.00 | 0 | 365,715 | 365,715 |
| 10/1/01 | 9/30/02 | 825,167 | 15.86 | 384,640 | 7.39 | 440,527 | 8.47 | 361,877 | 463,290 | 825,167 |
| 10/1/02 | 9/30/03 | 1,359,690 | 26.44 | 463,290 | 9.01 | 896,400 | 17.43 | 922,724 | 499,520 | 1,422,244 |
| 10/1/03 | 9/30/04 | 1,655,219 | 27.23 | 499,520 | 8.22 | 1,155,699 | 19.01 | 1,155,699 | 549,804 | 1,705,503 |
| 10/1/04 | 9/30/05 | 1,988,852 | 32.41 | 549,804 | 8.96 | 1,439,048 | 23.45 | 1,439,048 | 589,543 | 2,028,591 |
| 10/1/05 | 9/30/06 | 2,339,568 | 34.59 | 589,543 | 8.72 | 1,750,025 | 25.87 | 1,750,025 | 589,543 | 2,339,568 |
| 10/1/06 | 9/30/07 | 2,664,373 | 32.68 | 589,543 | 7.23 | 2,074,830 | 25.45 | 2,074,830 | 589,543 | 2,664,373 |
| 10/1/07 | 9/30/08 | 2,845,292 | 32.31 | 589,543 | 6.70 | 2,255,749 | 25.61 | 2,255,749 | 589,543 | 2,845,292 |
| 10/1/08 | 9/30/09 | 3,380,771 | 33.37 | 579,772 | 5.73 | 2,800,384 | 27.64 | 2,800,384 | 579,772 | 3,380,156 |
| 10/1/09 | 9/30/10 | 3,678,119 | 35.54 | 589,543 | 5.60 | 3,088,576 | 29.94 | 3,098,347 | 633,115 | 3,731,462 |
| 10/1/09 | 9/30/11 | 3,606,278 | 34.04 | 633,115 | 5.98 | 2,973,163 | 28.06 | 3,026,506 | 623,344 | 3,649,850 |
| 10/1/10 | 9/30/12 | 3,771,466 | 35.16 | 623,344 | 5.81 | 3,148,122 | 29.35 | 3,148,122 | 623,344 | 3,771,466 |
| 10/1/11 | 9/30/13 | 4,272,215 | 40.87 | 704,322 | 6.74 | 3,567,893 | 34.13 | 3,648,871 | 704,322 | 4,353,193 |
| 10/1/12 | 9/30/14 | 4,226,469 | 44.58 | 704,322 | 7.43 | 3,522,147 | 37.15 | 3,522,147 | 704,322 | 4,226,469 |
| 10/1/13 | 9/30/15 | 4,635,318 | 48.78 | 704,322 | 7.41 | 3,930,996 | 41.37 | 3,930,996 | 704,322 | 4,635,318 |
| 10/1/14 | 9/30/16 | 4,856,683 | 49.44 | 781,954 | 7.96 | 4,074,729 | 41.48 | 4,117,788 | 781,954 | 4,899,742 |
| 10/1/15 | 9/30/17 | 5,075,517 | 49.10 | 781,954 | 7.56 | 4,293,563 | 41.54 | 4,293,563 | 781,954 | 5,075,517 |
| 10/1/16 | 9/30/18 | 6,157,171 | 56.09 | 781,954 | 7.12 | 5,375,217 | 48.97 | 5,375,217 | 781,954 | 6,157,171 |
| 10/1/17 | 9/30/19 | 6,409,551 | 55.42 | 1,062,385 * | 9.19 | 5,347,166 | 46.23 | 5,347,166 | 1,062,385 | 6,409,551 |
| 10/1/18 | 9/30/20 | 5,969,275 | 56.03 | 1,062,385 * | 9.97 | 4,906,890 | 46.06 | N/A | N/A | N/A |
| 10/1/19 | 9/30/21 | 6,400,723 | 54.28 | 1,062,385 * | 9.01 | 5,338,338 | 45.27 | N/A | N/A | N/A |

*Including amount allocated from Accumulated Excess State Contribution Reserve.



ACTUARIAL ASSUMPTIONS AND COST METHOD

Actuarial Cost Method - Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities - Unfunded Actuarial Accrued Liabilities (full funding credit if assets exceed liabilities) were amortized by level (principal & interest combined) percent-of-payroll contributions over a reasonable period of future years.

Actuarial Value of Assets - The Actuarial Value of Assets phases in the difference between the actual and expected investment earnings over a period of 5 years. The Actuarial Value of Assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the Market Value of plan assets and whose upper limit is 120% of the Market Value of plan assets. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than Market Value. During periods when investment performance is less than assumed rate, Actuarial Value of Assets will tend to be greater than Market Value.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this Section.

Economic Assumptions

The investment return rate assumed in the valuation is 7.50% per year, compounded annually (net after investment expenses).

The **Wage Inflation Rate** assumed in this valuation is 3.5% per year. The Wage Inflation Rate is defined to be the portion of total pay increases for an individual that are due to macroeconomic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes related to individual merit and seniority effects.

The **Price Inflation Rate** assumed in this valuation is 2.5% per year.

The assumed **real rate of return** over price inflation is defined to be the portion of total investment return that is more than the assumed inflation rate. Considering other economic assumptions, the 7.50% investment return rate translates to an assumed real rate of return over price inflation of 5.0%.



The active member population is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at 2.50% per year.

Pay increase assumptions for individual active members are shown below. Part of the assumption for each age is for merit and/or seniority increase, and the other 3.5% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member’s current salary to the salaries upon which benefits will be based.

| Years of Service | % Increase in Salary | | |
|------------------|----------------------|----------------|----------------|
| | Merit and Seniority | Wage Inflation | Total Increase |
| 1 | 11.0% | 3.5% | 14.5% |
| 2 | 8.5% | 3.5% | 12.0% |
| 3 | 8.5% | 3.5% | 12.0% |
| 4 | 6.0% | 3.5% | 9.5% |
| 5 | 1.5% | 3.5% | 5.0% |
| 6 | 4.0% | 3.5% | 7.5% |
| 7 | 1.5% | 3.5% | 5.0% |
| 8 | 1.5% | 3.5% | 5.0% |
| 9 | 4.0% | 3.5% | 7.5% |
| 10-15 | 0.5% | 3.5% | 4.0% |
| 16-19 | 5.0% | 3.5% | 8.5% |
| 20 & Over | 0.0% | 3.5% | 3.5% |

Demographic Assumptions

The mortality table is the RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates in use for Special Risk Class members of the Florida Retirement System (FRS) in the July 1, 2018 FRS Actuarial Valuation. Florida Statutes Chapter 112.63(1)(f) mandates the use of the mortality tables used in either of the two most recently published actuarial valuation reports of FRS.



FRS Healthy Post-Retirement Mortality for Special Risk Class Members

| Sample Attained Ages (in 2019) | Probability of Dying Next Year | | Future Life Expectancy (years) | |
|--------------------------------------|-----------------------------------|--------|-----------------------------------|-------|
| | Men | Women | Men | Women |
| 50 | 0.53 % | 0.23 % | 34.12 | 38.50 |
| 55 | 0.66 | 0.32 | 29.49 | 33.48 |
| 60 | 0.89 | 0.46 | 24.92 | 28.58 |
| 65 | 1.28 | 0.72 | 20.51 | 23.83 |
| 70 | 1.95 | 1.21 | 16.36 | 19.36 |
| 75 | 3.17 | 2.04 | 12.61 | 15.26 |
| 80 | 5.21 | 3.42 | 9.37 | 11.62 |

This assumption is used to measure the probabilities of each benefit payment being made after retirement.

FRS Healthy Pre-Retirement Mortality for Special Risk Class Members

| Sample Attained Ages (in 2019) | Probability of Dying Next Year | | Future Life Expectancy (years) | |
|--------------------------------------|-----------------------------------|--------|-----------------------------------|-------|
| | Men | Women | Men | Women |
| 50 | 0.22 % | 0.15 % | 35.11 | 38.85 |
| 55 | 0.39 | 0.24 | 30.00 | 33.70 |
| 60 | 0.70 | 0.39 | 25.12 | 28.68 |
| 65 | 1.20 | 0.69 | 20.55 | 23.86 |
| 70 | 1.95 | 1.21 | 16.36 | 19.36 |
| 75 | 3.17 | 2.04 | 12.61 | 15.26 |
| 80 | 5.21 | 3.42 | 9.37 | 11.62 |

This assumption is used to measure the probabilities of active members dying prior to retirement.

For disabled retirees, the mortality table used was 60% of the RP-2000 for Disabled Annuitants with ages set back 4 years for males and set forward 2 years for females, and 40% of the RP2000 Annuitant Mortality Table with a white collar adjustment with no age setback, both with no provision being made for future mortality improvements. These are the same rates in use for Special Risk Class members of FRS in the July 1, 2018 FRS Actuarial Valuation.

FRS Disabled Mortality for Special Risk Class Members

| Sample Attained Ages (in 2019) | Probability of Dying Next Year | | Future Life Expectancy (years) | |
|--------------------------------------|-----------------------------------|--------|-----------------------------------|-------|
| | Men | Women | Men | Women |
| 50 | 1.67 % | 0.91 % | 23.74 | 27.06 |
| 55 | 2.03 | 1.26 | 20.77 | 23.37 |
| 60 | 2.47 | 1.67 | 17.91 | 19.90 |
| 65 | 3.07 | 2.24 | 15.15 | 16.62 |
| 70 | 3.90 | 3.18 | 12.52 | 13.58 |
| 75 | 5.30 | 4.60 | 10.02 | 10.86 |
| 80 | 7.59 | 6.66 | 7.80 | 8.48 |



The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

| S e r v i c e | Retirement Rates | | | | | |
|---------------------------------|------------------|-------|---------|--------|---------|--------|
| | | Age | | | | |
| | | <50 | 50 - 54 | 55 | 56 - 59 | 60+ |
| | 10 - 19 | N/A | 10.0% | 40.0% | 40.0% | 100.0% |
| | 20 | 40.0% | 80.0% | 80.0% | 100.0% | 100.0% |
| | 21 - 24 | 40.0% | 80.0% | 100.0% | 100.0% | 100.0% |
| | 25+ | 50.0% | 80.0% | 100.0% | 100.0% | 100.0% |

The rate of retirement is 10% for each year of eligibility for early retirement.

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

| Sample Ages | % of Active Members Separating Within Next Year |
|-------------|---|
| 20 | 1.5 % |
| 25 | 1.5 |
| 30 | 1.5 |
| 35 | 1.5 |
| 40 | 2.5 |
| 45 | 1.5 |
| 50 | 1.0 |
| 55 | 0.0 |

Rates of disability among active members (85% of disabilities are assumed to be service-connected). In the prior valuation, 75% of disabilities were assumed to be service-connected.

| Sample Ages | % Becoming Disabled within Next Year |
|-------------|--------------------------------------|
| 20 | 0.09 % |
| 25 | 0.10 |
| 30 | 0.12 |
| 35 | 0.15 |
| 40 | 0.20 |
| 45 | 0.34 |
| 50 | 0.67 |
| 55 | 1.03 |



Miscellaneous and Technical Assumptions

| | |
|--|---|
| <i>Administrative & Investment Expenses</i> | The investment return assumption is intended to be the return net of investment expenses. Annual administrative expenses are assumed to be equal to the average of the prior two years' expenses. Assumed administrative expenses are added to the Normal Cost. |
| <i>Benefit Service</i> | Exact fractional service is used to determine the amount of benefit payable. |
| <i>Cost of Living Increases</i> | Benefits are increased by 2% per year beginning five years after benefit commencement. |
| <i>Decrement Operation</i> | Disability and mortality decrements operate during retirement eligibility. |
| <i>Decrement Timing</i> | Decrements of all types are assumed to occur at the beginning of the year. |
| <i>Eligibility Testing</i> | Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur. |
| <i>Forfeitures</i> | For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit. It was further assumed that the liability at termination is the greater of the vested deferred benefit (if any) or the member's accumulated contributions. |
| <i>Incidence of Contributions</i> | The employer contribution is assumed to be made in one full payment on October 1 st of each year (at the beginning of the fiscal year). Member contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. |
| <i>Liability Load</i> | Projected retirement benefits are loaded by a unique amount for each member to allow for the inclusion of unused sick and vacation pay in final average earnings. These individual loads are based on the number of hours of unused sick and vacation reported for each member as of September 27, 2013. |
| <i>Marriage Assumption</i> | 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes. |

Normal Form of Benefit

A ten year certain and life thereafter annuity is the Normal Form of Benefit.

Pay Increase Timing

Beginning of fiscal year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

Service Credit Accruals

It is assumed that members accrue one year of service credit per year.



GLOSSARY

| | |
|--|---|
| <i>Actuarial Accrued Liability (AAL)</i> | The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs. |
| <i>Actuarial Assumptions</i> | Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items. |
| <i>Actuarial Cost Method</i> | A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability. |
| <i>Actuarial Equivalent</i> | Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions. |
| <i>Actuarial Present Value (APV)</i> | The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made. |
| <i>Actuarial Present Value of Future Benefits (APVFB)</i> | The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due. |
| <i>Actuarial Valuation</i> | The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB. |
| <i>Actuarial Value of Assets</i> | The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined employer contribution (ADEC). |

Actuarially Determined Employer Contribution (ADEC)

The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB. The ADEC consists of the Employer Normal Cost and Amortization Payment.

Amortization Method

A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.

Amortization Payment

That portion of the plan contribution or ADEC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Amortization Period

The period used in calculating the Amortization Payment.

Closed Amortization Period

A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.

Employer Normal Cost

The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.

Equivalent Single Amortization Period

For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.

Experience Gain/Loss

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

| | |
|--|---|
| <i>Funded Ratio</i> | The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability. |
| <i>GASB</i> | Governmental Accounting Standards Board. |
| <i>GASB No. 68 and GASB No. 67</i> | These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves. |
| <i>Normal Cost</i> | The annual cost assigned, under the Actuarial Cost Method, to the current plan year. |
| <i>Open Amortization Period</i> | An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll. |
| <i>Unfunded Actuarial Accrued Liability</i> | The difference between the Actuarial Accrued Liability and Actuarial Value of Assets. |
| <i>Valuation Date</i> | The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date. |



SECTION C

PENSION FUND INFORMATION

SUMMARY OF ASSETS

| Item | September 30 | |
|--|-----------------|-----------------|
| | 2019 | 2018 |
| A. Cash and Cash Equivalents (Operating Cash) | \$ - | \$ - |
| B. Receivables: | | |
| 1. Member Contributions | \$ - | \$ - |
| 2. Employer Contributions | - | - |
| 3. State Contributions | - | 789,121 |
| 4. Investment Income and Other Receivables | 327,698 | 259,985 |
| 5. Prepaid Expenses | 8,230 | 8,235 |
| 6. Total Receivables | \$ 335,928 | \$ 1,057,341 |
| C. Investments | | |
| 1. Short Term Investments | \$ 2,724,691 | \$ 2,621,179 |
| 2. Domestic Equities | 59,592,951 | 54,673,575 |
| 3. International Equities | 21,014,778 | 18,061,651 |
| 4. Domestic Fixed Income | 28,533,827 | 28,973,214 |
| 5. International Fixed Income | - | - |
| 6. Real Estate | 10,820,467 | 10,229,669 |
| 7. Private Equity | - | - |
| 8. Total Investments | \$ 122,686,714 | \$ 114,559,288 |
| D. Liabilities | | |
| 1. Benefits Payable | \$ - | \$ - |
| 2. Accrued Expenses and Other Payables | (230,286) | (213,243) |
| 3. Prepaid City Contribution | (295,020) | (146,476) |
| 4. Total Liabilities | \$ (525,306) | \$ (359,719) |
| E. Total Market Value of Assets Available for Benefits | \$ 122,497,336 | \$ 115,256,910 |
| F. Reserves | | |
| 1. State Contribution Reserve | \$ (1,990,898) | \$ (2,074,002) |
| 2. DROP Accounts | (18,368,680) | (17,196,200) |
| 3. Total Reserves | \$ (20,359,578) | \$ (19,270,202) |
| G. Market Value Net of Reserves | \$ 102,137,758 | \$ 95,986,708 |
| F. Allocation of Investments | | |
| 1. Short Term Investments | 2.22% | 2.29% |
| 2. Domestic Equities | 48.57% | 47.72% |
| 3. International Equities | 17.13% | 15.77% |
| 4. Domestic Fixed Income | 23.26% | 25.29% |
| 5. International Fixed Income | 0.00% | 0.00% |
| 6. Real Estate | 8.82% | 8.93% |
| 7. Private Equity | 0.00% | 0.00% |
| 8. Total Investments | 100.00% | 100.00% |



PENSION FUND INCOME & DISBURSEMENTS

| Item | September 30 | |
|--|-----------------------|-----------------------|
| | 2019 | 2018 |
| A. Market Value of Assets at Beginning of Year | \$ 115,256,910 | \$ 104,292,111 |
| B. Adjustment to Prepaid City Contribution* | \$ 131,887 | \$ - |
| C. Revenues and Expenditures | | |
| 1. Contributions | | |
| a. Employee Contributions | \$ 1,458,781 | \$ 1,336,051 |
| b. Employer Contributions** | 5,347,166 | 5,375,217 |
| d. State Contributions | 830,904 | 789,121 |
| e. Service Purchase | 65,616 | 137,465 |
| f. Rollover to DROP | 379,375 | 323,472 |
| g. Total | <u>\$ 8,081,842</u> | <u>\$ 7,961,326</u> |
| 2. Investment Income | | |
| a. Interest, Dividends, and Other Income | \$ 2,026,967 | \$ 1,812,908 |
| b. Net Realized Gains/(Losses) | 1,470,765 | 2,476,066 |
| c. Net Unrealized Gains/(Losses) | 3,688,658 | 5,300,396 |
| d. Investment Expenses | <u>(350,840)</u> | <u>(367,634)</u> |
| e. Net Investment Income | \$ 6,835,550 | \$ 9,221,736 |
| 3. Benefits and Refunds | | |
| a. Refunds | \$ (26,917) | \$ (105,981) |
| b. Regular Monthly Benefits | (5,796,876) | (5,141,447) |
| c. DROP Distributions | (1,800,310) | (829,266) |
| d. Ad Hoc Payments from State Reserve | - | - |
| e. Total | <u>\$ (7,624,103)</u> | <u>\$ (6,076,694)</u> |
| 4. Administrative and Miscellaneous Expenses | \$ (184,750) | \$ (141,569) |
| 5. Transfers | \$ - | \$ - |
| D. Market Value of Assets at End of Year | \$ 122,497,336 | \$ 115,256,910 |
| E. Reserves | | |
| 1. State Contribution Reserve | \$ (1,990,898) | \$ (2,074,002) |
| 2. DROP Accounts | <u>(18,368,680)</u> | <u>(17,196,200)</u> |
| 3. Total Reserves | \$ (20,359,578) | \$ (19,270,202) |
| F. Market Value Net of Reserves | \$ 102,137,758 | \$ 95,986,708 |

* This adjustment in the prepaid City contribution (from \$146,476 to \$14,589, a change of \$131,887) is due to a reevaluation of prior years' COLA costs. See GRS' letter regarding the cost of the COLA dated November 5, 2019 for more details.

** Actual City Contribution was \$5,627,597, but \$5,347,166 was recognized. The difference of \$280,431 was added to the prepaid contribution balance, increasing it to \$295,020 after reflecting the adjustment described in the first footnote above.



ACTUARIAL VALUE OF ASSETS

| Valuation Date - September 30 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|----------------|----------------|-----------|-----------|-----------|-----------|
| A. Actuarial Value of Assets Beginning of Year | \$ 100,128,057 | \$ 110,897,801 | \$ - | \$ - | \$ - | \$ - |
| B. Market Value End of Year | 115,256,910 | 122,497,336 | - | - | - | - |
| C. Market Value Beginning of Year | 104,292,111 | 115,256,910 | - | - | - | - |
| D. Non-Investment/Administrative Net Cash Flow | 1,743,063 | 404,876 | - | - | - | - |
| E. Investment Income | | | | | | |
| E1. Actual Market Total: B-C-D | 9,221,736 | 6,835,550 | - | - | - | - |
| E2. Assumed Rate of Return | 7.50% | 7.50% | 7.50% | 7.50% | 7.50% | 7.50% |
| E3. Assumed Amount of Return | 7,776,540 | 8,533,037 | - | - | - | - |
| E4. Amount Subject to Phase-In: E1-E3 | 1,445,196 | (1,697,487) | - | - | - | - |
| F. Phase-In Recognition of Investment Income | | | | | | |
| F1. Current Year: 0.2 x E4 | 289,039 | (339,497) | - | - | - | - |
| F2. First Prior Year | 1,036,587 | 289,039 | (339,497) | - | - | - |
| F3. Second Prior Year | 579,455 | 1,036,587 | 289,039 | (339,497) | - | - |
| F4. Third Prior Year | (1,065,718) | 579,455 | 1,036,587 | 289,039 | (339,497) | - |
| F5. Fourth Prior Year | 410,778 | (1,065,719) | 579,454 | 1,036,588 | 289,040 | (339,499) |
| F6. Total Phase-Ins | 1,250,141 | 499,865 | 1,565,583 | 986,130 | (50,457) | (339,499) |
| G. Actuarial Value of Assets End of Year | | | | | | |
| G1. Preliminary Actuarial Value of Assets End of Year: | \$ 110,897,801 | \$ 120,335,579 | \$ - | \$ - | \$ - | \$ - |
| G2. Upper Corridor Limit: 120%*B | 138,308,292 | 146,996,803 | - | - | - | - |
| G3. Lower Corridor Limit: 80%*B | 92,205,528 | 97,997,869 | - | - | - | - |
| G4. Funding Value End of Year | 110,897,801 | 120,335,579 | - | - | - | - |
| G5. Less: State Contribution Reserve | (2,074,002) | (1,990,898) | - | - | - | - |
| G6. Less: DROP Account Balance | (17,196,200) | (18,368,680) | - | - | - | - |
| G7. Final Funding Value End of Year | 91,627,599 | 99,976,001 | - | - | - | - |
| G8. Final Market Value End of Year | 95,986,708 | 102,137,758 | - | - | - | - |
| H. Difference between Market & Actuarial Value of Assets | 4,359,109 | 2,161,757 | - | - | - | - |
| I. Actuarial Rate of Return | 8.71% | 7.94% | 0.00% | 0.00% | 0.00% | 0.00% |
| J. Market Value Rate of Return | 8.55% | 5.79% | 0.00% | 0.00% | 0.00% | 0.00% |
| K. Ratio of Actuarial Value of Assets to Market Value | 96.22% | 98.24% | 0.00% | 0.00% | 0.00% | 0.00% |



| RECONCILIATION OF DROP ACCOUNTS | |
|---|--------------------|
| Value at beginning of year | \$ 17,196,200 |
| Adjustment to beginning of year balance | + 50,320 |
| Payments credited to accounts | + 1,282,954 |
| Rollovers into DROP | + 379,375 |
| Net Loan Activity | + 44,457 |
| Investment Earnings credited | + 1,215,684 |
| Withdrawals from accounts | - <u>1,800,310</u> |
| Value at end of year | 18,368,680 |



INVESTMENT RATE OF RETURN

| Year Ended | Investment Rate of Return | |
|-------------------------|---------------------------|-----------------|
| | Market Value | Actuarial Value |
| 12/31/1982 | NA % | 11.9 % |
| 12/31/1983 | 15.2 | 13.9 |
| 12/31/1984 | 11.7 | 11.1 |
| 12/31/1985 | 23.1 | 18.7 |
| 12/31/1986 | 11.8 | 13.4 |
| 12/31/1987 | 5.3 | 10.3 |
| 12/31/1988 | 10.9 | 9.8 |
| 12/31/1989 | 15.9 | 14.8 |
| 9/30/1990 (9 mos.) | (1.6) | 1.4 |
| 9/30/1991 | 19.6 | 13.1 |
| 9/30/1992 | 12.7 | 11.2 |
| 9/30/1993 | 13.1 | 9.7 |
| 9/30/1994 | 0.2 | 3.1 |
| 9/30/1995 | 18.8 | 9.3 |
| 9/30/1996 | 13.1 | 9.8 |
| 9/30/1997 | 24.5 | 12.6 |
| 9/30/1998 | 11.4 | 12.4 |
| 9/30/1999 | 11.8 | 14.1 |
| 9/30/2000 | 9.4 | 13.3 |
| 9/30/2001 | (7.7) | 8.0 |
| 9/30/2002 | (5.6) | 2.3 |
| 9/30/2003 | 15.3 | 3.5 |
| 9/30/2004 | 6.4 | 2.2 |
| 9/30/2005 | 7.9 | 2.5 |
| 9/30/2006 | 5.2 | 5.3 |
| 9/30/2007 | 12.3 | 9.3 |
| 9/30/2008 | (17.1) | 3.0 |
| 9/30/2009 | (0.2) | 0.9 |
| 9/30/2010 | 8.5 | 2.5 |
| 9/30/2011 | (0.9) | 0.9 |
| 9/30/2012 | 17.1 | 2.7 |
| 9/30/2013 | 13.6 | 8.1 |
| 9/30/2014 | 10.2 | 8.8 |
| 9/30/2015 | 0.4 | 7.3 |
| 9/30/2016 | 11.1 | 9.2 |
| 9/30/2017 | 13.0 | 9.3 |
| 9/30/2018 | 8.6 | 8.7 |
| 9/30/2019 | 5.8 | 7.9 |
| Average Returns: | | |
| Last Five Years | 7.7 % | 8.5 % |
| Last Ten Years | 8.6 % | 6.5 % |
| All Years | 8.7 % | 8.3 % |



SECTION D

FINANCIAL ACCOUNTING INFORMATION

FASB NO. 35 INFORMATION

| | October 1, 2019 | October 1, 2018 |
|---|--------------------|--------------------|
| A. Valuation Date | | |
| B. Actuarial Present Value of Accumulated Plan Benefits | | |
| 1. Vested Benefits | | |
| a. Members Currently Receiving Payments | \$ 93,894,938 | \$ 88,512,800 |
| b. Terminated Vested Members | 973,039 | 898,572 |
| c. Other Members | <u>36,817,553</u> | <u>34,703,701</u> |
| d. Total | 131,685,530 | 124,115,073 |
| 2. Non-Vested Benefits | 2,612,708 | 1,928,195 |
| 3. Total Actuarial Present Value of Accumulated Plan Benefits: 1d + 2 | 134,298,238 | 126,043,268 |
| 4. Accumulated Contributions of Active Members | 10,588,733 | 10,119,252 |
| C. Changes in the Actuarial Present Value of Accumulated Plan Benefits | | |
| 1. Total Value at Beginning of Year | 126,043,268 | 119,126,697 |
| 2. Increase (Decrease) During the Period Attributable to: | | |
| a. Plan Amendment | 165,213 | 0 |
| b. Change in Actuarial Assumptions | 0 | 0 |
| c. Latest Member Data, Benefits Accumulated and Decrease in the Discount Period | 15,196,504 | 13,387,583 |
| d. Benefits Paid net of DROP activity | <u>(7,106,747)</u> | <u>(6,471,012)</u> |
| e. Net Increase | 8,254,970 | 6,916,571 |
| 3. Total Value at End of Period | 134,298,238 | 126,043,268 |
| D. Market Value of Assets | 102,137,758 | 95,986,708 |
| E. Actuarial Assumptions - See page entitled Actuarial Assumptions and Methods | | |



SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS

GASB Statement No. 67

| Fiscal year ending September 30, | 2020* | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total pension liability | | | | | | | |
| Service Cost | \$ 3,593,983 | \$ 3,403,511 | \$ 3,717,529 | \$ 3,330,443 | \$ 3,204,682 | \$ 2,988,536 | \$ 2,772,724 |
| Interest | 12,278,344 | 11,904,771 | 11,208,637 | 10,066,945 | 9,542,671 | 8,955,215 | 8,188,369 |
| Benefit Changes | 616,047 | (1,384,791) | - | - | - | - | - |
| Difference between actual & expected experience | 3,514,248 | (1,516,079) | 1,224,054 | 668,799 | (498,197) | 708,071 | (28,363) |
| Assumption Changes | - | - | - | 6,644,861 | - | 1,809,581 | - |
| Benefit Payments | (7,431,208) | (7,597,186) | (5,970,713) | (5,456,760) | (5,176,836) | (4,304,149) | (4,292,070) |
| Refunds | (19,901) | (26,917) | (105,981) | (53,290) | - | (4,622) | (50,673) |
| Other (Increase in Excess State Reserve) | (306,481) | (8,104) | (326,167) | (231,973) | (192,041) | 259,251 | 312,239 |
| Other (Rollovers into DROP) | - | 379,375 | 323,472 | 70,279 | 271,411 | 139,860 | 343,843 |
| Net Change in Total Pension Liability | 12,245,032 | 5,154,580 | 10,070,831 | 15,039,304 | 7,151,690 | 10,551,743 | 7,246,069 |
| Total Pension Liability - Beginning | 163,996,071 | 158,841,491 | 148,770,660 | 133,731,356 | 126,579,666 | 116,027,923 | 108,781,854 |
| Total Pension Liability - Ending (a) | \$ 176,241,103 | \$ 163,996,071 | \$ 158,841,491 | \$ 148,770,660 | \$ 133,731,356 | \$ 126,579,666 | \$ 116,027,923 |
| Plan Fiduciary Net Position | | | | | | | |
| Contributions - Employer (from City) | \$ 4,734,845 | \$ 5,627,597 | \$ 5,444,061 | \$ 4,293,563 | \$ 4,195,420 | \$ 3,930,996 | \$ 3,522,147 |
| Contributions - Employer (from State) | 830,904 | 830,904 | 789,121 | 883,314 | 923,246 | 963,573 | 1,016,561 |
| Contributions - Non-Employer Contributing Entity | - | - | - | - | - | - | - |
| Contributions - Members | 1,380,532 | 1,524,397 | 1,473,516 | 1,477,115 | 1,485,128 | 1,251,530 | 1,291,773 |
| Net Investment Income | 9,338,565 | 6,835,550 | 9,221,736 | 12,165,106 | 9,197,486 | 282,853 | 7,187,580 |
| Benefit Payments | (7,431,208) | (7,597,186) | (5,970,713) | (5,456,760) | (5,176,836) | (4,304,149) | (4,292,070) |
| Refunds | (19,901) | (26,917) | (105,981) | (53,290) | - | (4,622) | (50,673) |
| Administrative Expense | (163,160) | (184,750) | (141,569) | (151,010) | (161,122) | (132,439) | (122,390) |
| Other (Rollovers into DROP) | - | 379,375 | 323,472 | 70,279 | 271,411 | 139,860 | 343,843 |
| Net Change in Plan Fiduciary Net Position | 8,670,577 | 7,388,970 | 11,033,643 | 13,228,317 | 10,734,733 | 2,127,602 | 8,896,771 |
| Plan Fiduciary Net Position - Beginning | 122,792,356 | 115,403,386 | 104,369,743 | 91,141,426 | 80,406,693 | 78,279,091 | 69,382,320 |
| Plan Fiduciary Net Position - Ending (b) | \$ 131,462,933 | \$ 122,792,356 | \$ 115,403,386 | \$ 104,369,743 | \$ 91,141,426 | \$ 80,406,693 | \$ 78,279,091 |
| Net Pension Liability - Ending (a) - (b) | 44,778,170 | 41,203,715 | 43,438,105 | 44,400,917 | 42,589,930 | 46,172,973 | 37,748,832 |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | 74.59 % | 74.88 % | 72.65 % | 70.15 % | 68.15 % | 63.52 % | 67.47 % |
| Covered Employee Payroll | \$ 11,504,436 | \$ 12,156,508 | \$ 11,133,758 | \$ 11,219,225 | \$ 10,906,700 | \$ 9,962,067 | \$ 9,925,925 |
| Net Pension Liability as a Percentage of Covered Employee Payroll | 389.23 % | 338.94 % | 390.15 % | 395.76 % | 390.49 % | 463.49 % | 380.31 % |

* These figures are estimates only. Actual figures will be provided after the end of the fiscal year.



SCHEDULE OF THE EMPLOYER'S NET PENSION LIABILITY
GASB Statement No. 67

| FY Ending September 30, | Total Pension Liability | Plan Net Position | Net Pension Liability | Plan Net Position as a % of Total Pension Liability | Covered Payroll | Net Pension Liability as a % of Coverd Payroll |
|----------------------------|-------------------------------|----------------------|--------------------------|---|--------------------|--|
| 2014 | \$ 116,027,923 | \$ 78,279,091 | \$ 37,748,832 | 67.47% | \$ 9,925,925 | 380.31% |
| 2015 | 126,579,666 | 80,406,693 | 46,172,973 | 63.52% | 9,962,067 | 463.49% |
| 2016 | 133,731,356 | 91,141,426 | 42,589,930 | 68.15% | 10,906,700 | 390.49% |
| 2017 | 148,770,660 | 104,369,743 | 44,400,917 | 70.15% | 11,219,225 | 395.76% |
| 2018 | 158,841,491 | 115,403,386 | 43,438,105 | 72.65% | 11,133,758 | 390.15% |
| 2019 | 163,996,071 | 122,792,356 | 41,203,715 | 74.88% | 12,156,508 | 338.94% |
| 2020* | 176,241,103 | 131,462,933 | 44,778,170 | 74.59% | 11,504,436 | 389.23% |

* These figures are estimates only. Actual figures will be provided after the end of the fiscal year.



NOTES TO NET PENSION LIABILITY

GASB Statement No. 67

Valuation Date: October 1, 2019
Measurement Date: September 30, 2020

Methods and Assumptions Used to Determine Net Pension Liability:

| | |
|---------------------------|---|
| Actuarial Cost Method | Entry Age Normal |
| Inflation | 2.5% |
| Salary Increases | Varies by years of service from 3.5% to 14.5% (see Table in Actuarial Assumptions Section) |
| Investment Rate of Return | 7.50% |
| Retirement Age | Rates vary by age and years of service (see Table in Actuarial Assumptions Section) |
| Mortality | RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the July 1, 2018 FRS actuarial valuation report. Florida Statutes Chapter 112.63(1)(f) mandates the use of the mortality tables used in either of the two most recently published actuarial valuation reports of FRS. |

Other Information:

Notes See Discussion of Valuation Results on Page 1.



SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

| FY Ending September 30, | Actuarially Determined Contribution | Actual Contribution | Contribution Deficiency (Excess) | Covered Payroll | Actual Contribution as a % of Covered Payroll |
|----------------------------|---|------------------------|--|--------------------|---|
| 2014 | \$ 4,226,469 | \$ 4,226,469 | \$ - | \$ 9,925,925 | 42.58% |
| 2015 | 4,635,318 | 4,635,318 | - | 9,962,067 | 46.53% |
| 2016 | 4,899,742 | 4,977,374 | (77,632) ** | 10,906,700 | 45.64% |
| 2017 | 5,075,517 | 5,075,517 | - | 11,219,225 | 45.24% |
| 2018 | 6,157,171 | 6,226,015 | (68,844) ** | 11,133,758 | 55.92% |
| 2019 | 6,409,551 | 6,458,501 | (48,950) ** | 12,156,508 | 53.13% |
| 2020* | 5,969,275 | 5,565,749 | 403,526 *** | 11,504,436 | 48.38% |

* These figures are estimates only. Actual figures will be provided after the end of the fiscal year.

**Prepaid contributions (resulting from the previous years' excess contributions) will be applied toward the Actuarially Determined Contributions for Fiscal Year Ending September 30, 2020 and 2021.

***The Deficiency in actual contribution is funded through the use of Prepaid contributions (\$172,045) plus Accumulated Excess Chapter 175 Premium Tax Revenue Reserves (\$231,481).



NOTES TO SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

Valuation Date: October 1, 2018
Notes Actuarially determined contribution rates are calculated as of the October 1st which is two years prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates:

| | |
|-------------------------------|---|
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level Percentage of Payroll, Closed |
| Remaining Amortization Period | 19 years (Single equivalent amortization period) |
| Asset Valuation Method | 5-year smoothed market |
| Inflation | 2.5% |
| Salary Increases | Varies by years of service from 3.5% to 14.5% (see Table in Actuarial Assumptions Section) |
| Investment Rate of Return | 7.50% |
| Retirement Age | Rates vary by age and years of service (see Table in Actuarial Assumptions Section) |
| Mortality | RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the July 1, 2018 FRS actuarial valuation report. Florida Statutes Chapter 112.63(1)(f) mandates the use of the mortality tables used in either of the two most recently published actuarial valuation reports of FRS. |

Other Information:
Notes See Discussion of Valuation Results on Page 1 of the October 1, 2018 Actuarial Valuation Report.



SINGLE DISCOUNT RATE GASB Statement No. 67

A single discount rate of 7.50% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.50%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the total actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments (7.50%) was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan’s net pension liability, calculated using a single discount rate of 7.50%, as well as what the plan’s net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

| 1% Decrease | Current Single Discount Rate Assumption | 1% Increase |
|--------------|--|--------------|
| 6.50% | 7.50% | 8.50% |
| \$64,578,569 | \$44,778,170 | \$28,571,754 |

* These figures are estimates only. Actual figures will be provided after the end of the fiscal year.



SECTION E

MISCELLANEOUS INFORMATION

| RECONCILIATION OF MEMBERSHIP DATA | | |
|---|------------------------------------|------------------------------------|
| | From 10/1/18 To 10/1/19 | From 10/1/17 To 10/1/18 |
| A. Active Members | | |
| 1. Number Included in Last Valuation | 113 | 124 |
| 2. New Members Included in Current Valuation | 8 | 1 |
| 3. Non-Vested Employment Terminations | (1) | (2) |
| 4. Vested Employment Terminations | 0 | 0 |
| 5. DROP Participation | (5) | (8) |
| 6. Service Retirements | 0 | (2) |
| 7. Disability Retirements | 0 | 0 |
| 8. Deaths | 0 | 0 |
| 9. Transfer from General Employees | <u>0</u> | <u>0</u> |
| 10. Number Included in This Valuation | 115 | 113 |
| B. Terminated Vested Members | | |
| 1. Number Included in Last Valuation | 2 | 3 |
| 2. Additions from Active Members | 0 | 0 |
| 3. Lump Sum Payments/Refund of Contributions | 0 | 0 |
| 4. Payments Commenced | 0 | (1) |
| 5. Deaths | 0 | 0 |
| 6. Other | <u>0</u> | <u>0</u> |
| 7. Number Included in This Valuation | 2 | 2 |
| C. DROP Plan Members | | |
| 1. Number Included in Last Valuation | 16 | 13 |
| 2. Additions from Active Members | 5 | 8 |
| 3. Retirements | (1) | (5) |
| 4. Deaths Resulting in No Further Payments | 0 | 0 |
| 5. Other (Death Resulting in Survivor Benefits) | <u>0</u> | <u>0</u> |
| 6. Number Included in This Valuation | 20 | 16 |
| D. Service Retirees, Disability Retirees and Beneficiaries | | |
| 1. Number Included in Last Valuation | 103 | 96 |
| 2. Additions from Active Members | 0 | 2 |
| 3. Additions from Terminated Vested Members | 0 | 1 |
| 4. Additions from DROP Plan | 1 | 5 |
| 5. Deaths Resulting in No Further Payments | (2) | (3) |
| 6. Deaths Resulting in New Survivor Benefits | 0 | 2 |
| 7. End of Certain Period - No Further Payments | 0 | 0 |
| 8. Other -- Lump Sum Distributions | <u>0</u> | <u>0</u> |
| 9. Number Included in This Valuation | 102 | 103 |



ACTIVE PARTICIPANT DISTRIBUTION

| Age Group | Years of Service to Valuation Date | | | | | | | | | | Totals | |
|-----------|------------------------------------|--------|---------|---------|--------|-----------|-----------|-----------|-------|-----|--------|------------|
| | 0-1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-9 | 10-14 | 15-19 | 20-24 | 25+ | | |
| 15-19 NO. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AVG PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20-24 NO. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| TOT PAY | 45,350 | 0 | 0 | 78,920 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124,270 |
| AVG PAY | 45,350 | 0 | 0 | 78,920 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62,135 |
| 25-29 NO. | 3 | 1 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 13 |
| TOT PAY | 136,051 | 56,991 | 207,043 | 246,527 | 45,350 | 195,310 | 0 | 0 | 0 | 0 | 0 | 887,272 |
| AVG PAY | 45,350 | 56,991 | 69,014 | 82,176 | 45,350 | 97,655 | 0 | 0 | 0 | 0 | 0 | 68,252 |
| 30-34 NO. | 1 | 0 | 4 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 13 |
| TOT PAY | 45,350 | 0 | 259,648 | 0 | 0 | 622,539 | 118,472 | 0 | 0 | 0 | 0 | 1,046,009 |
| AVG PAY | 45,350 | 0 | 64,912 | 0 | 0 | 88,934 | 118,472 | 0 | 0 | 0 | 0 | 80,462 |
| 35-39 NO. | 0 | 0 | 2 | 2 | 0 | 9 | 14 | 6 | 0 | 0 | 0 | 33 |
| TOT PAY | 0 | 0 | 111,785 | 169,733 | 0 | 842,775 | 1,403,127 | 694,819 | 0 | 0 | 0 | 3,222,239 |
| AVG PAY | 0 | 0 | 55,893 | 84,867 | 0 | 93,642 | 100,223 | 115,803 | 0 | 0 | 0 | 97,644 |
| 40-44 NO. | 0 | 0 | 1 | 0 | 0 | 5 | 8 | 15 | 0 | 0 | 0 | 29 |
| TOT PAY | 0 | 0 | 71,030 | 0 | 0 | 486,663 | 788,874 | 1,737,248 | 0 | 0 | 0 | 3,083,815 |
| AVG PAY | 0 | 0 | 71,030 | 0 | 0 | 97,333 | 98,609 | 115,817 | 0 | 0 | 0 | 106,338 |
| 45-49 NO. | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 14 | 0 | 0 | 0 | 17 |
| TOT PAY | 45,350 | 0 | 0 | 0 | 0 | 99,127 | 101,471 | 1,627,121 | 0 | 0 | 0 | 1,873,069 |
| AVG PAY | 45,350 | 0 | 0 | 0 | 0 | 99,127 | 101,471 | 116,223 | 0 | 0 | 0 | 110,181 |
| 50-54 NO. | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 7 |
| TOT PAY | 0 | 0 | 0 | 0 | 0 | 0 | 177,020 | 565,316 | 0 | 0 | 0 | 742,336 |
| AVG PAY | 0 | 0 | 0 | 0 | 0 | 0 | 88,510 | 113,063 | 0 | 0 | 0 | 106,048 |
| 55-59 NO. | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TOT PAY | 0 | 0 | 0 | 147,542 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 147,542 |
| AVG PAY | 0 | 0 | 0 | 147,542 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 147,542 |
| 60-64 NO. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AVG PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65-99 NO. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AVG PAY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOT NO. | 6 | 1 | 10 | 7 | 1 | 24 | 26 | 40 | 0 | 0 | 0 | 115 |
| TOT AMT | 272,101 | 56,991 | 649,506 | 642,722 | 45,350 | 2,246,414 | 2,588,964 | 4,624,504 | 0 | 0 | 0 | 11,126,552 |
| AVG AMT | 45,350 | 56,991 | 64,951 | 91,817 | 45,350 | 93,601 | 99,576 | 115,613 | 0 | 0 | 0 | 96,753 |



INACTIVE PARTICIPANT DISTRIBUTION

| Age | Terminated Vested | | Disabled | | Retired | | Deceased with Beneficiary | |
|--------------|-------------------|----------------|----------|----------------|------------|------------------|---------------------------|----------------|
| | Number | Total Benefits | Number | Total Benefits | Number | Total Benefits | Number | Total Benefits |
| Under 20 | - | - | - | - | - | - | - | - |
| 20-24 | - | - | - | - | - | - | - | - |
| 25-29 | - | - | - | - | - | - | - | - |
| 30-34 | - | - | - | - | - | - | - | - |
| 35-39 | - | - | - | - | - | - | - | - |
| 40-44 | 1 | 22,894 | - | - | 1 | 76,005 | - | - |
| 45-49 | 1 | 51,866 | 1 | 68,693 | 15 | 1,187,162 | - | - |
| 50-54 | - | - | 1 | 45,227 | 14 | 1,130,046 | - | - |
| 55-59 | - | - | - | - | 21 | 1,587,982 | 2 | 87,659 |
| 60-64 | - | - | - | - | 21 | 959,101 | - | - |
| 65-69 | - | - | - | - | 24 | 1,392,419 | 1 | 34,603 |
| 70-74 | - | - | - | - | 8 | 358,317 | 1 | 42,767 |
| 75-79 | - | - | - | - | 5 | 241,865 | 3 | 68,268 |
| 80-84 | - | - | - | - | 1 | 37,067 | 1 | 14,517 |
| 85-89 | - | - | - | - | - | - | 1 | 6,951 |
| 90-94 | - | - | - | - | - | - | 1 | 16,142 |
| 95-99 | - | - | - | - | - | - | - | - |
| 100 & Over | - | - | - | - | - | - | - | - |
| Total | 2 | 74,760 | 2 | 113,920 | 110 | 6,969,964 | 10 | 270,907 |
| Average Age | | 45 | | 50 | | 61 | | 74 |
| Liability | | 973,039 | | 1,709,561 | | 89,601,318 | | 2,584,059 |



SECTION F

SUMMARY OF PLAN PROVISIONS

SUMMARY OF PLAN PROVISIONS

A. Ordinances

Plan established under the Code of Ordinances for the City of Boynton Beach, Florida, Chapter 18, Article IV, and was most recently amended under Ordinance No. 20-003 passed and adopted on its second reading on February 18, 2020. The Plan is also governed by certain provisions of Chapter 175, Florida Statutes, Part VII, Chapter 112, Florida Statutes and the Internal Revenue Code.

B. Effective Date

Date was not provided.

C. Plan Year

October 1 through September 30

D. Type of Plan

Qualified, governmental defined benefit retirement plan; for GASB purposes it is a single employer plan.

E. Eligibility Requirements

All full-time firefighters are eligible to participate. Members hired before February 5, 2019 are classified as "Tier 1 members" and members hired on or after February 5, 2019 are classified as "Tier 2 members."

F. Credited Service

Service is measured as the total length of employment for which the firefighter received Compensation from the City and made Member Contributions to the plan. No service is credited for any periods of employment for which the member received a refund of their contributions.

G. Compensation

Cash compensation exclusive of bonuses and incentive pay, but including overtime earnings not to exceed 300 hours and lump sum payment of accumulated unused sick and vacation hours, but not to exceed the number of accumulated sick and vacation hours as of September 27, 2013.

H. Final Average Compensation (FAC)

The average of Compensation over the highest 3 years during the last 10 years of Credited Service.

I. Normal Retirement

Eligibility: A member may retire on the first day of the month coincident with or next following the earlier of:



Tier 1:

- (1) age 55 and 10 years of Credited Service, or
- (2) 20 years of Credited Service regardless of age.

Tier 2:

- (1) age 55 and 10 years of Credited Service, or
- (2) 25 years of Credited Service regardless of age.

Benefit: 3.00% of FAC multiplied by years of Credited Service.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the normal retirement benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year. This maximum benefit cap will be increased annually beginning on October 1, 2020 (and on each October 1st thereafter) by 1.5%. In accordance with Chapter 175 minimum benefit provisions, in no event will a Firefighter's retirement benefit be less than 2.75% of FAC multiplied by years of Credited Service.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each retiree, beneficiary and disability retiree who retires or enters the DROP on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

J. Early Retirement

Eligibility: A member may elect to retire earlier than the Normal Retirement Eligibility upon attainment of age 50 and 10 years of Credited Service.

Benefit: The Normal Retirement Benefit is reduced by 3.0% for each year by which the Early Retirement date precedes the Normal Retirement date.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the early retirement benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year, applied to the normal retirement benefit before reflecting any reductions for early retirement.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each retiree, beneficiary and disability retiree who retires or enters the DROP on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

K. Delayed Retirement

Same as Normal Retirement taking into account compensation earned and service credited until the date of actual retirement.



L. Service Connected Disability

Eligibility: Any member who becomes totally and permanently disabled as a result of an act occurring in the performance of service for the City is immediately eligible for a disability benefit.

Benefit: 66 2/3% of Compensation in effect on the date of disability, reduced by amounts payable under Social Security PIA with a minimum benefit equal to 42% of FAC.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the disability benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year.

Normal Form of Benefit: Payable until death or recovery from disability; other options are also available.

COLA: Each disability retiree who retires on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

M. Non-Service Connected Disability

Eligibility: Any member with 10 years of Credited Service who becomes totally and permanently disabled is immediately eligible for a disability benefit.

Benefit: 2.5% of FAC multiplied by years of Credited Service with a minimum benefit equal to 25% of FAC.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the disability benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year.

Normal Form of Benefit: Payable until death or recovery from disability; other options are also available.

COLA: Each disability retiree who retires on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

N. Death in the Line of Duty

Eligibility: Members are eligible for survivor benefits after the completion of 10 or more years of Credited Service.

Benefit: Spouse will receive 3.0% of the member's FAC multiplied by years of Credited Service.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the death benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year.



Normal Form
of Benefit: Paid for the life of the spouse with 10 years certain.

COLA: Each surviving spouse whose benefits began on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after benefits began.

The beneficiary of a plan member with less than 10 years of Credited Service at the time of death will receive a refund of the member's accumulated contributions.

O. Other Pre-Retirement Death

Eligibility: Members are eligible for survivor benefits after the completion of 10 or more years of Credited Service.

Benefit: Spouse will receive 3.0% of the member's FAC multiplied by years of Credited Service.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the death benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year.

Normal Form
of Benefit: Paid for the life of the spouse with 10 years certain.

COLA: Each surviving spouse whose benefits began on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after benefits began.

The beneficiary of a plan member with less than 10 years of Credited Service at the time of death will receive a refund of the member's accumulated contributions.

P. Post Retirement Death

Benefit determined by the form of benefit elected upon retirement.

Q. Optional Forms

In lieu of electing the Normal Form of benefit, the optional forms of benefits available to all retirees are a Single Life Annuity or the 50%, 66 2/3%, 75% and 100% Joint and Survivor options. A Social Security option is also available for members retiring prior to the time they are eligible for Social Security retirement benefits.

R. Vested Termination

Eligibility: A member has earned a non-forfeitable right to Plan benefits after the completion of 10 years of Credited Service.



Benefit: The benefit is the member's accrued Normal Retirement Benefit as of the date of termination. For Tier 1 members, benefit begins on the date that would have been the member's Normal Retirement date had they continued employment. For Tier 2 members, benefit begins at age 55. Alternatively, members can elect a reduced Early Retirement benefit any time after age 50.

Effective October 1, 2018, for all Firefighters who are not eligible for Normal Retirement as of October 1, 2018 the deferred vested retirement benefit shall be limited to a maximum benefit cap, initially set at \$95,000 per year, applied to the normal retirement benefit before reflecting any reductions for early retirement.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each member who retires on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

Members terminating employment with less than 10 years of Credited Service will receive a refund of their own accumulated contributions.

S. Refunds

Eligibility: All members terminating employment with less than 10 years of Credited Service are eligible. Optionally, vested members (those with 10 or more years of Credited Service) may elect a refund in lieu of the vested benefits otherwise due.

Benefit: Refund of the member's contributions.

T. Member Contributions

12% of compensation

U. Employer Contributions

Chapter 175 Premium Tax Refunds and any additional amount determined by the actuary needed to fund the plan properly according to State laws.

V. Cost of Living Increases

Each retiree, beneficiary and disability retiree who retires or enters the DROP on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

W. 13th Check

In years in which a cumulative net actuarial gain has been determined, there shall be payable an ad-hoc thirteenth check paid in December.



X. Deferred Retirement Option Plan

Eligibility: Plan members who have less than 30 years of Credited Service but have met one of the following criteria are eligible for the DROP:

- (1) age 55 with 10 years of Credited Service, or
- (2) 20 years of Credited Service (25 years for Tier 2 members) regardless of age.

Members who meet eligibility must submit a written election to participate in the DROP.

Benefit: The member's Credited Service and FAC are frozen upon entry into the DROP. The monthly retirement benefit as described under Normal Retirement is calculated based upon the frozen Credited Service and FAC.

Maximum

DROP Period: The earlier of 5 years of participation in the DROP or 30 years of employment.

Interest

Credited: For members hired before January 21, 2020, the member's DROP account is credited at an interest rate based upon the option chosen by the member. Members must elect from 1 of the 3 following options:

1. Gain or loss at the same rate earned by the Plan, or
2. Guaranteed rate of 7%, or
3. The rate earned by a self-directed account utilizing mutual funds selected by the Board.

For members hired on or after January 21, 2020, the member's DROP account is credited at the same rate earned by the Plan, no less than 0% and no more than 8%. Such members must also withdraw the DROP balance within 30 days of separating from employment and exiting the DROP.

Normal Form

of Benefit: Options include a lump sum or equal periodic payments.

COLA: Each member who enters the DROP on or after December 1, 2006 will receive a 2.0% increase in benefits on October 1st of each year beginning 5 years after retirement.

Y. Other Ancillary Benefits

There are no ancillary retirement type benefits not required by statutes but which might be deemed a City of Boynton Beach Municipal Firefighters' Pension Trust Fund liability if continued beyond the availability of funding by the current funding source.

Z. Changes from Previous Valuation

There have been the following revisions in benefits since the previous valuation:



- The maximum benefit cap (currently \$95,000 as of October 1, 2019) will be increased annually beginning on October 1, 2020 (and on each October 1st thereafter) by 1.5%.
- The Survivor's benefit for line of duty and non-line of duty death benefits was increased from 2.5% 3.0% of the member's average final compensation multiplied by years of Credited Service.
- A "Consolidated Deferred Retirement Option Plan" has been created which applies to members hired on or after January 21, 2020. Benefit provisions for the Consolidated DROP that differ from the current DROP include the following:
 - Members in the Consolidated Deferred Retirement Option Plan earn interest credited on their DROP account balance at the same rate earned by the Plan, no less than 0% and no more than 8%.
 - Members in the Consolidated Deferred Retirement Option Plan must withdraw or roll over their DROP balances within 30 days of separating from employment and exiting the DROP.
- The Board of Trustees may adopt uniform administrative rules relating to rebuttable presumptions and to non-rebuttable conclusive cancer presumptions and for the determination of any disqualifying events reflected in Chapter 112 and 175, Florida Statutes.

Although not specifically stated in the Ordinance, we have assumed that as a result of the proposed change to adopt uniform administrative rules relating to rebuttable disease presumptions and to non-rebuttable conclusive cancer presumptions reflected in Chapters 112 and 175, Florida Statutes, the following provisions are added to the Plan:

- In compliance with newly adopted Florida Statutes Chapter 112.1816:
 - If a firefighter is initially diagnosed with cancer while employed as a firefighter, and as a result of the diagnosis of cancer or circumstances arising from the treatment of such cancer, he or she is determined to be wholly prevented from rendering useful and efficient service as a firefighter, and likely to remain so disabled continuously and permanently, the disability or death shall be considered in the line-of-duty.
- In compliance with newly adopted Florida Statutes Chapter 112.181:
 - Disability or death resulting from a condition or impairment of health that is caused by hepatitis, meningococcal meningitis, tuberculosis, hypertension or heart disease resulting in a member being determined to be wholly prevented from rendering useful and efficient service as a firefighter, and likely to remain so disabled continuously and permanently shall be presumed to have been accidental and suffered in the line of duty unless the contrary is shown by competent evidence.