

The Employees' Retirement System for the City of Norfolk

**Actuarial Valuation Report
as of June 30, 2015**

**The Seventy-Second
Actuarial Valuation**

Produced by Cheiron

September 2015

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September 29, 2015

Board of Trustees
Employees' Retirement System
City of Norfolk
Norfolk, Virginia 23510

***Re: The Employees' Retirement System for the City of Norfolk -
Actuarial Valuation as of June 30, 2015***

Dear Members of the Board:

At your request, we have conducted an annual actuarial valuation of the Employees' Retirement System for the City of Norfolk as of June 30, 2015. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.


The actuarial assumptions used in performing this valuation have been recommended by the actuary and adopted by the Board of Trustees based on the actuary's most recent review of the System's experience completed in October 2012. We believe the assumptions used, in the aggregate, reflect our best estimate of anticipated future experience of the Plan. The results of this report are only applicable to the contribution for fiscal year ending 2017 and rely on future plan experience conforming to the underlying assumptions. Future valuation reports may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

The purpose of this report is to present the annual actuarial valuation of the Employees' Retirement System for the City of Norfolk. The report also provides information regarding employer contribution levels.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This actuarial report was prepared exclusively for City of Norfolk for the purpose described herein. Other users of this valuation report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any such other users.

Sincerely,
Cheiron



Fiona E. Liston, FSA, EA, MAAA
Principal Consulting Actuary



Kevin J. Woodrich, FSA, EA, MAAA
Principal Consulting Actuary

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

FOREWORD

Cheiron has performed the actuarial valuation of the Employees' Retirement System for the City of Norfolk as of June 30, 2015. The purpose of this report is to:

- 1) **Measure and disclose**, as of the valuation date, the financial condition of the System;
- 2) **Indicate trends** in the financial progress of the System;
- 3) **Determine the contribution rate** to be paid by the City for fiscal year 2017; and
- 4) **Provide specific information** used in preparing the System's financial statement. All other disclosure information required under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 will be sent under separate cover.

An actuarial valuation establishes and analyzes the System's assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of the System's investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary containing our findings and discloses important trends experienced by the System in recent years.

Section II contains details on various asset measures, together with pertinent performance measurements.

Section III shows similar information on System liabilities, measured for actuarial, accounting, and government reporting purposes.

Section IV develops the employer contribution rate to be paid by the City effective July 1, 2016.

Section V includes certain required disclosures for financial statements.

The appendices to this report contain a summary of the System's membership at the valuation date, the actuarial methods and assumptions used in the valuation and a summary of the major provisions of the System.

In preparing our report, we relied without audit, on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice #23 Data Quality.

The actuarial assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent our best estimate for the future experience of the System. Future valuation reports may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

General Comments

In this section, we will first discuss the trends of the System over the past 12 years and then show projections of the contribution rate and funding status. Please remember that these projections make certain assumptions about future investment returns, future salary increases, future inflation, and future behavior of plan participants. We cannot know what will actually happen, but these projections should provide the Board with a better understanding of the sensitivity of the System's funding to future market performances.

The City Code states that each year the Board must certify to the City Manager the amount of appropriation required for the ensuing year to meet the normal and accrued liability contributions payable by the City. The results of this valuation determine the contribution rate for the fiscal year beginning July 1, 2016. The contribution rate for General Employees is determined to be 12.67%. The contribution rate for Firefighters and Police is determined to be 27.59%. The composite rate is equal to 17.79% of annual payroll. This is an increase from the composite rate of 17.51% determined in last year's valuation, which is applicable to the current fiscal year.

Forecasts show that should all assumptions be realized, including the 7.0% assumed annual investment return, the System's funded status would increase from 85% to 96% over the next 15 years. Please note that this projection does **not** recognize the City's tendency to offer ad hoc COLAs. If the assumptions were changed to recognize future COLAs up front, the System's funded ratio would be significantly lower, but the System would no longer experience losses each time a COLA is granted.

Recent Experience

The financial markets performed below expectation during the fiscal year ending June 30, 2015. The actual return on a market value basis was approximately 1.24%. However, due to the continued recognition of favorable investment performance for prior years, the System experienced a slight gain on the actuarial value of assets. On an actuarial value basis, the assets returned 7.31% compared with an assumed rate of return of 7.0%. The gain recognized for funding purposes was \$3.0 million.

On the liability side, the System's experience resulted in an actuarial gain of \$2.5 million (roughly 0.2% of the liabilities). This liability gain was due primarily to salaries not increasing as much as assumed. In addition, the City awarded a one-time lump sum payment of \$300 on July 1, 2015 to 1,176 in-pay participants.

The combination of liability and investment experience produced a slight increase in the System's funding ratio (actuarial value of assets over actuarial liability) from 84.5% at June 30, 2014 to 84.8% at June 30, 2015.

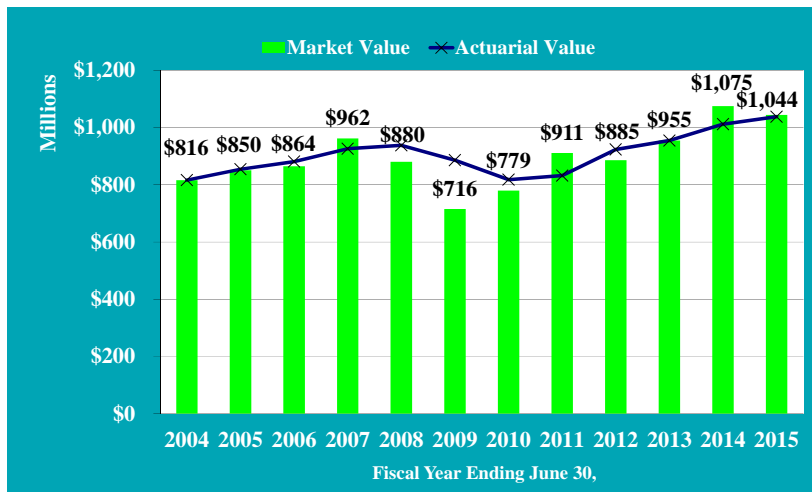
**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

Trends

It is important to take a step back from the latest results and view them in the context of the System's recent history. Here we present a series of graphs which display key factors in the valuations over the last twelve years. After the historical review, we present a few projection graphs showing the possible condition of the System over the next 15 years under various market return scenarios.

Growth in Assets

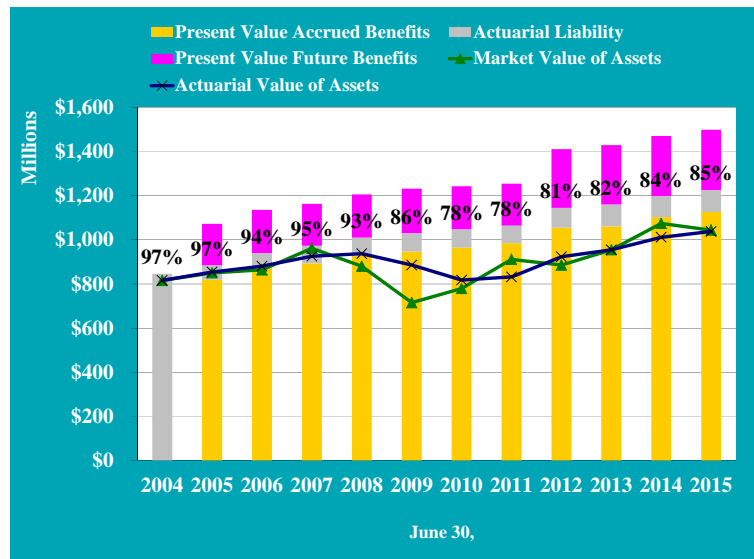


The market value of assets (MVA) experienced a return of 1.2% this year. Due to the asset smoothing method in place, the actuarial value of assets (AVA) increased as a result of market value gains experienced in prior years, albeit that only a portion of this gain is being recognized this year. As a result, the return on the AVA was 7.3%. The numbers refer to the MVA illustrated by the green bar. For funding purposes,

receivable City contributions are recognized.

Assets and Liabilities

The three colored bars represent the three different measures of liability mentioned in this report. For funding purposes, the target amount is represented by the top of the gray bar. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.



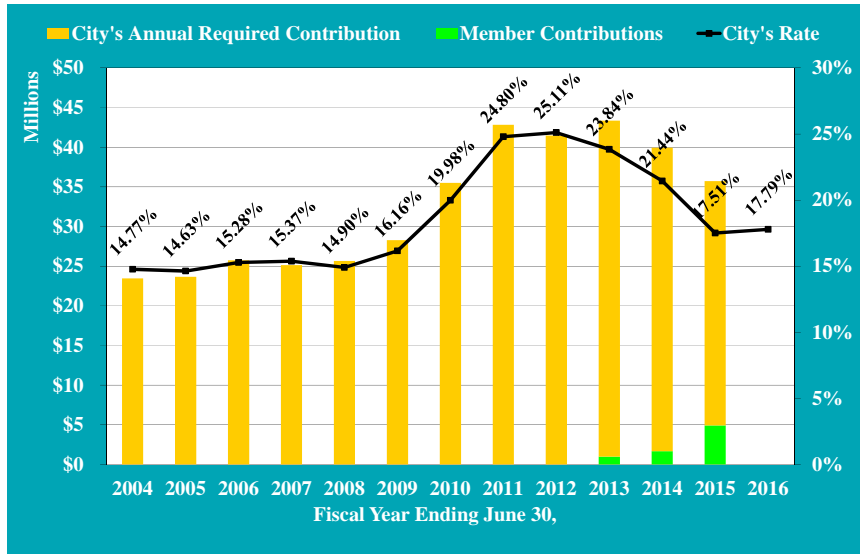
The amount represented by the top of the pink bars, the present value of future benefits, is the amount needed to provide all benefits for the current participants and their beneficiaries.

The top of the yellow bars measures the liability attributable to benefits accrued to date.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

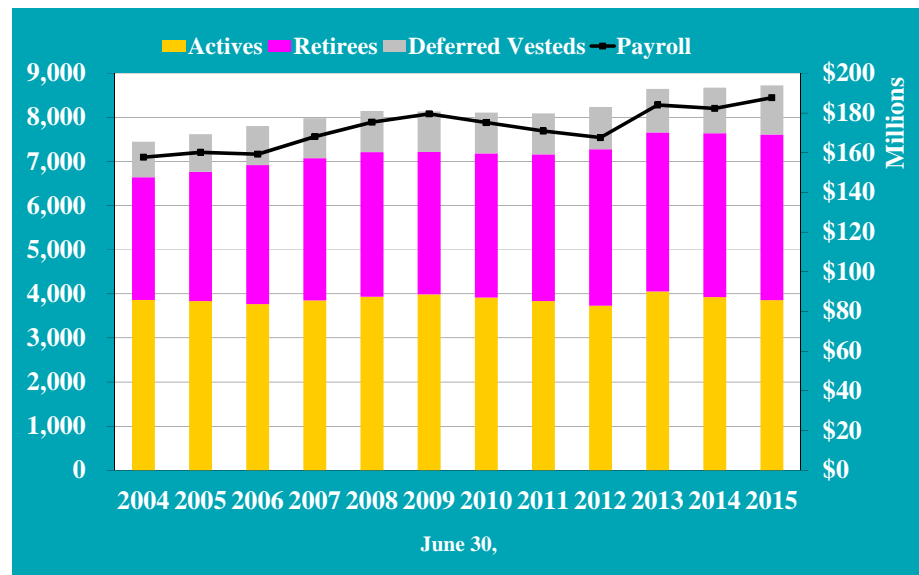
Contribution Rates



The yellow bars in this graph show the actual contribution amounts that have been booked by the City. The black line shows this contribution as a percent of payroll (right hand scale). The City contribution rate is set by the actuarial process. Please note there is a lag in the rate. For example, the June 30, 2014 valuation determined the annual required contribution for the period July 1, 2014 to June 30, 2015. While this amount was booked in Fiscal Year ending June 30, 2015 for funding purposes, it is actually being contributed in Fiscal Year ending June 30, 2016. Effective January 8, 2015, all members were required to contribute 5% of pay, with exception to City Council members hired before October 5, 2010. The increase in the member contributions (green bars) is indicative of that and is expected to increase next year to reflect this change being in effect for the whole year as well as any increase in pay.

Participant Trends

This graph shows the number of actives, retirees and deferred vested members in the System as of each valuation date. The black line shows historic growth in the total covered payroll of the System (right hand scale).



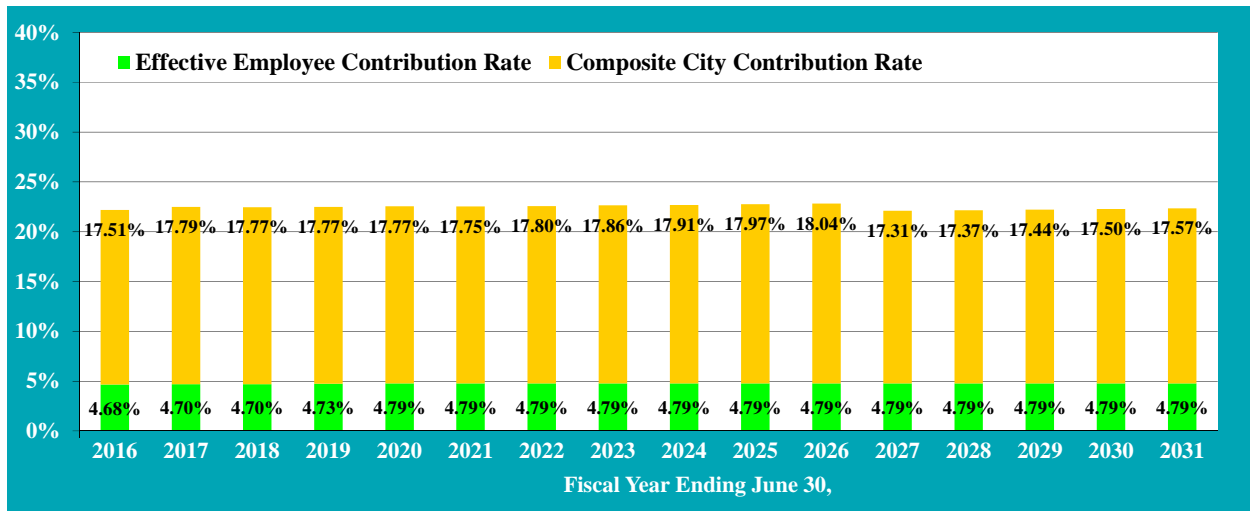
**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**SECTION I
BOARD SUMMARY**

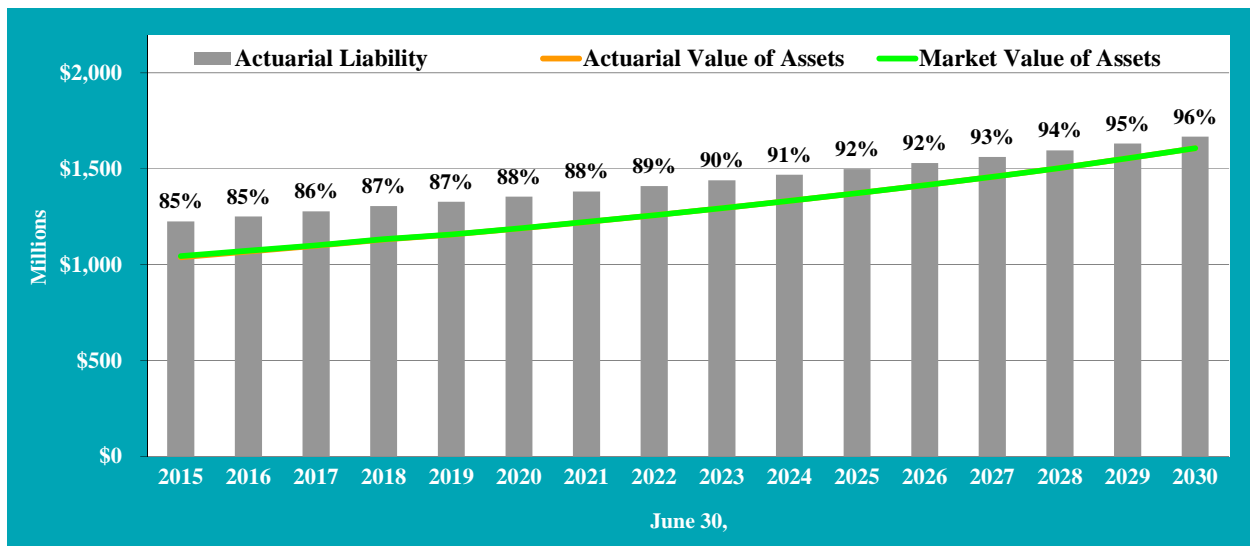
Future Outlook

Base Line Projections

The two graphs below show the expected progress of the Plan over the next 15 years, assuming the System's assets earn 7.0% of their *market value*. The first graph shows that the City's contribution rate is projected to remain relatively stable as a percentage of payroll if all actuarial assumptions are met, including the 7.0% interest rate. The effective employee contribution rate is less than 5% due to both City Council members and those participants who have elected the Deferred Retirement Option Program (DROP), but have yet to receive a monthly payment. However, because the City contributes to the System for these participants, their pay is included.



The graph below shows the projected funding status over the next 15 years. As you can see, the System's funded status is projected to improve to reach 96% by the end of the period shown as contributions pay down the existing unfunded liability. These projections do not include any assumption for future ad hoc COLAs.

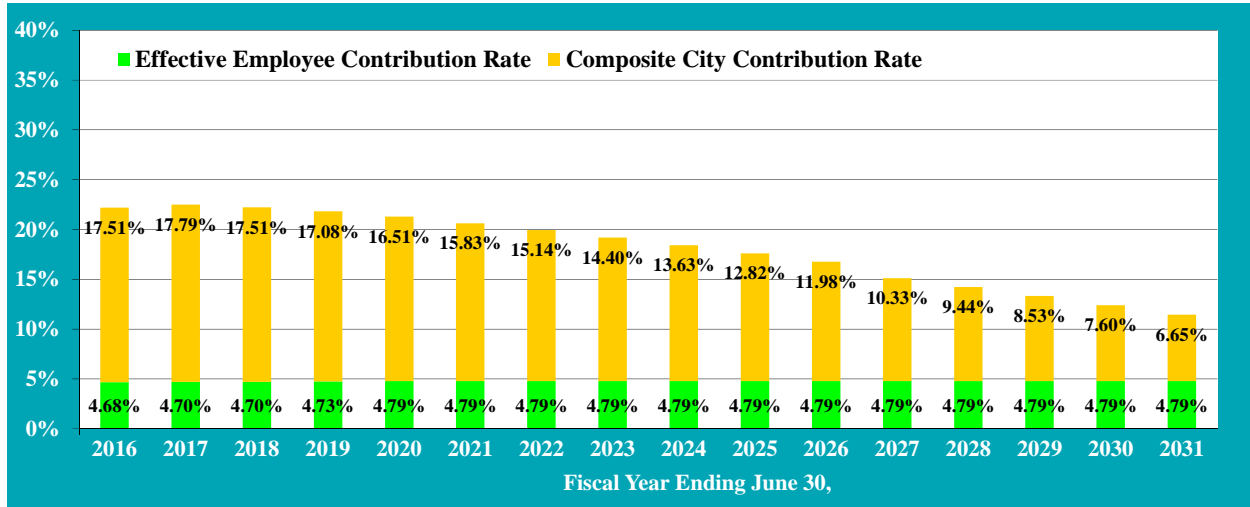


**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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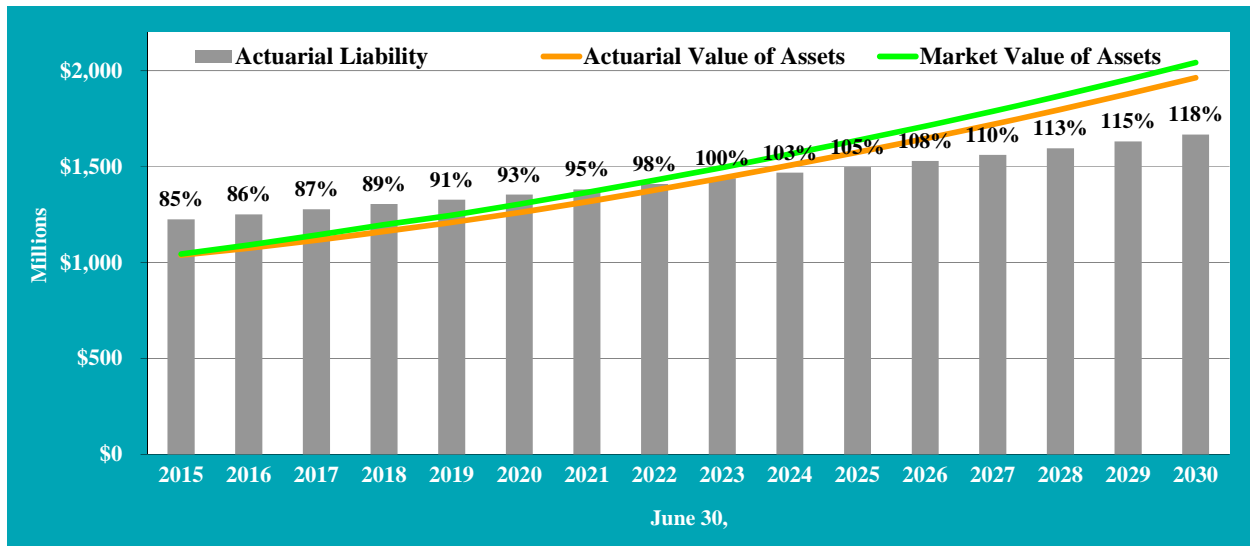
**SECTION I
BOARD SUMMARY**

Projections With Asset Returns of 9.0%

The future funding status of this System will be largely driven by the investment earnings. Due to the relatively well funded status of this Plan, the System is in a leveraged position. This means that relatively minor changes in the market returns can have significant effects on the System's status. The next two graphs show what the next 15 years would look like with a 9% annual return.



As you can see, the City's composite contribution rate would drop from its current level of 17.51% of payroll down to 6.65% of payroll by the end of the 15-year period. The System would reach a fully funded position by 2023. Again, these projections are absent any additional ad hoc COLAs.



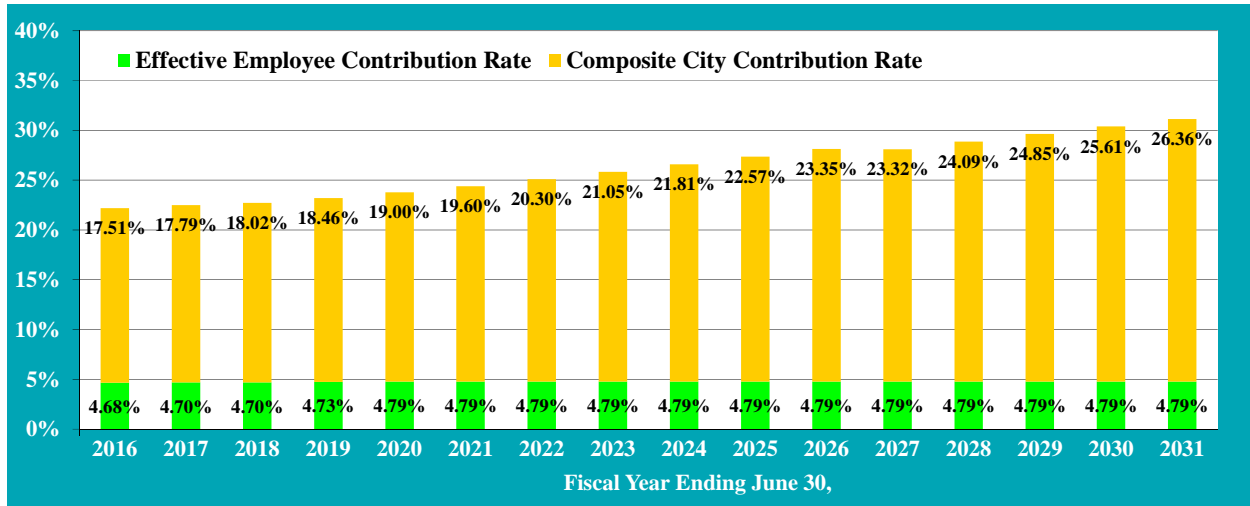
**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**SECTION I
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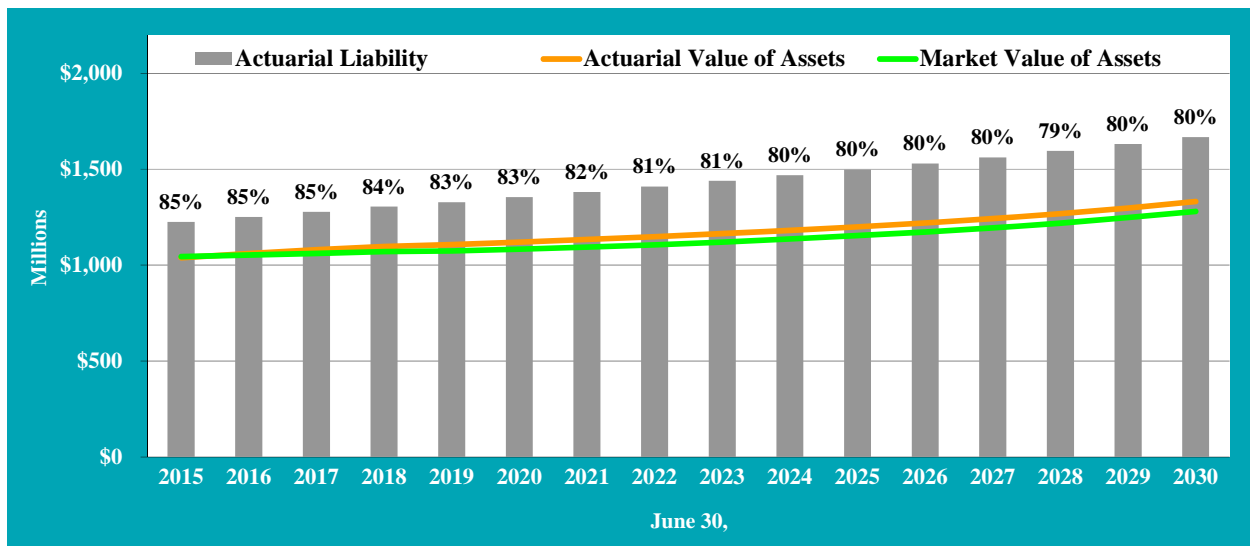
Projections With Asset Returns of 5.0%

The next two graphs show what the next 15 years would look like with a 5% annual return.

With assets projected to underperform, the City's composite contribution rate would increase steadily from now through the end of the 15-year period.



The System's funded level would ultimately decrease to 80%. There would still be no danger of benefit commitments going unmet as the Fund would have over one billion dollars. Again, these projections are absent any additional ad hoc COLAs.



**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

**Table I-1
Summary of Principal Plan Results
Combined**

| Valuation as of: | 6/30/2014 | 6/30/2015 | % Change |
|--|-------------------------|-------------------------|----------|
| <u>Participant Counts</u> | | | |
| Actives | 3,925 | 3,856 | (1.8%) |
| Leave of Absence ¹ | 28 | 22 | (21.4%) |
| Terminated Vested | 1,035 | 1,116 | 7.8% |
| Participants Due Account Balance | 8 | 19 | 137.5% |
| In Pay Status | 3,718 | 3,757 | 1.0% |
| DROP Participants | <u>0</u> | <u>58</u> | N/A |
| Total | 8,714 | 8,828 | 1.3% |
| Annual Salaries of Active Members ² | \$ 182,298,248 | \$ 187,711,934 | 3.0% |
| Annual Retirement Allowances ³ | \$ 77,321,000 | \$ 80,199,720 | 3.7% |
| <u>Assets and Liabilities</u> | | | |
| Actuarial Liability (AL) | \$ 1,197,466,212 | \$ 1,224,622,781 | 2.3% |
| Assets for Valuation Purposes (AVA) | <u>1,011,523,185</u> | <u>1,038,058,848</u> | 2.6% |
| Unfunded Actuarial Liability | \$ 185,943,027 | \$ 186,563,933 | |
| Funding Ratio (AVA ÷ AL) | 84.47% | 84.77% | |
| Funding Ratio (MVA ÷ AL) | 89.73% | 85.25% | |
| Present Value of Accrued Benefits | \$ 1,102,840,649 | \$ 1,125,773,088 | 2.1% |
| Market Value of Assets (MVA) ⁴ | <u>1,074,442,460</u> | <u>1,044,008,531</u> | (2.8%) |
| Unfunded Accrued Benefit Liability | \$ 28,398,189 | \$ 81,764,557 | |
| Accrued Benefit Funding Ratio | 97.42% | 92.74% | |
| <u>City Contributions as a % of Payroll</u> | | | |
| | Fiscal Year 2015 | Fiscal Year 2016 | |
| Normal Cost Contribution | 8.97% | 9.12% | |
| Unfunded Actuarial Liability Contribution | <u>8.54%</u> | <u>8.67%</u> | |
| Total Contribution | 17.51% | 17.79% | |

¹ 17 and 12 participants on Leave of Absence as of June 30, 2014 and June 30, 2015 respectively are entitled to a vested benefit.

² Salaries as of June 30, 2015 include 58 participants in DROP.

³ Includes the monthly benefit amounts for the 58 participants currently in DROP. For those in the DROP period as of June 30, 2015, the amount shown is 70% of the full monthly benefit.

⁴ Receivable City contributions are recognized for purposes of funding, but are excluded for purposes of reporting under GASB Statement No. 67.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

**Table I-1
Summary of Principal Plan Results
General Employees**

| Valuation as of: | 6/30/2014 | 6/30/2015 | % Change |
|--|-------------------------|-------------------------|----------|
| <u>Participant Counts</u> | | | |
| Actives | 2,709 | 2,704 | (0.2%) |
| Leave of Absence ¹ | 16 | 8 | (50.0%) |
| Terminated Vested | 816 | 879 | 7.7% |
| Participants Due Account Balance | 7 | 19 | 171.4% |
| In Pay Status | <u>2,537</u> | <u>2,574</u> | 1.5% |
| Total | 6,085 | 6,184 | 1.6% |
| Annual Salaries of Active Members | \$ 119,079,236 | \$ 123,366,429 | 3.6% |
| Annual Retirement Allowances | \$ 42,081,629 | \$ 42,841,068 | 1.8% |
| <u>Assets and Liabilities</u> | | | |
| Actuarial Liability | \$ 651,005,057 | \$ 662,018,498 | 1.7% |
| Assets for Valuation Purposes | <u>563,980,166</u> | <u>577,386,189</u> | 2.4% |
| Unfunded Actuarial Liability | \$ 87,024,891 | \$ 84,632,309 | |
| Funding Ratio (AVA ÷ AL) | 86.63% | 87.22% | |
| Funding Ratio (MVA ÷ AL) | 92.02% | 87.72% | |
| Present Value of Accrued Benefits | \$ 592,690,625 | \$ 601,958,193 | 1.6% |
| Market Value of Assets ² | <u>599,061,145</u> | <u>580,695,505</u> | (3.1%) |
| Unfunded Accrued Benefit Liability | \$ (6,370,520) | \$ 21,262,688 | |
| Accrued Benefit Funding Ratio | 101.07% | 96.47% | |
| <u>City Contributions as a % of Payroll</u> | | | |
| | Fiscal Year 2015 | Fiscal Year 2016 | |
| Normal Cost Contribution | 6.56% | 6.83% | |
| Unfunded Actuarial Liability Contribution | <u>5.96%</u> | <u>5.84%</u> | |
| Total Contribution | 12.52% | 12.67% | |

¹ 7 and 3 participants on Leave of Absence as of June 30, 2014 and June 30, 2015 respectively are entitled to a vested benefit.

² Receivable City contributions are recognized for purposes of funding but are excluded for purposes of reporting under GASB Statement No. 67.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION I
BOARD SUMMARY**

**Table I-1
Summary of Principal Plan Results
Firefighters and Police**

| Valuation as of: | 6/30/2014 | 6/30/2015 | % Change |
|--|-------------------------|-------------------------|----------|
| <u>Participant Counts</u> | | | |
| Actives | 1,216 | 1,152 | (5.3%) |
| Leave of Absence ¹ | 12 | 14 | 16.7% |
| Terminated Vested | 219 | 237 | 8.2% |
| Participants Due Account Balance | 1 | 0 | (100.0%) |
| In Pay Status | 1,181 | 1,183 | 0.2% |
| DROP Participants | <u>0</u> | <u>58</u> | N/A |
| Total | 2,629 | 2,644 | 0.6% |
| Annual Salaries of Active Members ² | \$ 63,219,012 | \$ 64,345,505 | 1.8% |
| Annual Retirement Allowances ³ | \$ 35,239,371 | \$ 37,358,652 | 6.0% |
| <u>Assets and Liabilities</u> | | | |
| Actuarial Liability | \$ 546,461,155 | \$ 562,604,283 | 3.0% |
| Assets for Valuation Purposes | <u>447,543,019</u> | <u>460,672,659</u> | 2.9% |
| Unfunded Actuarial Liability | \$ 98,918,136 | \$ 101,931,624 | |
| Funding Ratio (AVA ÷ AL) | 81.90% | 81.88% | |
| Funding Ratio (MVA ÷ AL) | 86.99% | 82.35% | |
| Present Value of Accrued Benefits | \$ 510,150,024 | \$ 523,814,895 | 2.7% |
| Market Value of Assets ⁴ | <u>475,381,315</u> | <u>463,313,026</u> | (2.5%) |
| Unfunded Accrued Benefit Liability | \$ 34,768,709 | \$ 60,501,869 | |
| Accrued Benefit Funding Ratio | 93.18% | 88.45% | |
| <u>City Contributions as a % of Payroll</u> | | | |
| | Fiscal Year 2015 | Fiscal Year 2016 | |
| Normal Cost Contribution | 13.51% | 13.50% | |
| Unfunded Actuarial Liability Contribution | <u>13.40%</u> | <u>14.09%</u> | |
| Total Contribution | 26.91% | 27.59% | |

¹ 10 and 9 participants on Leave of Absence as of June 30, 2014 and June 30, 2015 respectively are entitled to a vested benefit.

² Salaries as of June 30, 2015 include 58 participants in DROP.

³ Includes the monthly benefit amounts for the 58 participants currently in DROP. For those in the DROP period as of June 30, 2015, the amount shown is 70% of the full monthly benefit.

⁴ Receivable City contributions are recognized for purposes of funding but are excluded for purposes of reporting under GASB Statement No. 67.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

Pension plan assets play a key role in the financial operation of the System and in the decisions the Trustees may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact upon benefit levels, City contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on System assets including:

- **Disclosure** of system assets at June 30, 2014 and June 30, 2015;
- Statement of the **changes** in market values during the year;
- Development of the **actuarial value of assets**;
- An assessment of **investment performance**; and
- A projection of the System's expected **cashflows** for the next ten years.

Disclosure

The market value of assets represents "snap-shot" or "cash-out" values which provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not suitable for long-range planning.

The actuarial value, or "carrying values," is market values which have been smoothed based on actuarial methods used to estimate long-term asset values. They are used for evaluating the System's ongoing liability to meet its obligations.

Current methods employed by this System determine the actuarial value of assets by first calculating the expected actuarial value of assets based on last year's valuation interest rate, last year's actuarial value of assets, and the net cash flow (contributions less benefit payments) of the System over the year prior to the valuation. One-third of the difference between market value of assets and the expected actuarial value of assets is then added to the expected actuarial value of assets to determine the valuation assets.

The actuarial value of assets is then allocated between the General Employees' portion of the System and that covering Firefighters and Police. The allocation is performed annually based on the actual contribution and benefit payments made on behalf of each type of employee. The investment returns for the year are allocated based on the starting balance and the cash flow of each portion of the Fund.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

**Table II-1
Statement of Assets at Market Value**

| | June 30, 2014 | June 30, 2015 |
|---|-------------------------|-------------------------|
| <u>Assets</u> | | |
| Cash and Short-Term Investments | \$ 28,920,780 | \$ 46,527,331 |
| Receivables | | |
| Contributions from the City of Norfolk ¹ | \$ 38,263,500 | \$ 30,804,271 |
| Accrued Investment Income | 1,340,328 | 817,981 |
| Accounts Receivable | 198 | 198 |
| Due from Broker for Securities Sold | 5,491,241 | 190,815,744 |
| Total | <u>\$ 45,095,267</u> | <u>\$ 222,438,194</u> |
| Investments, at Fair Value | | |
| United States Treasury Securities | \$ 18,904,914 | \$ 40,963,059 |
| Fixed Income Securities | 128,679,128 | 94,647,887 |
| Equity Securities | 64,711,522 | 50,400,658 |
| Balanced Comingled Funds | 810,305,825 | 796,763,700 |
| Total | <u>\$ 1,022,601,389</u> | <u>\$ 982,775,304</u> |
| Total Assets | \$ 1,096,617,436 | \$ 1,251,740,829 |
| <u>Liabilities</u> | | |
| Accounts Payable | \$ 597,275 | \$ 523,877 |
| Due to Broker for Securities Purchased | 21,577,701 | 207,208,421 |
| Total Liabilities | <u>\$ 22,174,976</u> | <u>\$ 207,732,298</u> |
| Net Assets Available for Benefits | \$ 1,074,442,460 | \$ 1,044,008,531 |

¹ *Receivable City contributions are recognized for purposes of funding but are excluded for purposes of reporting under GASB Statement No. 67.*

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

| Table II-2 Changes in Market Value of Assets | |
|--|-------------------------------------|
| Value of Assets - June 30, 2014 | \$ 1,074,442,460 |
| Restated Value of Assets – June 30, 2014¹ | \$ 1,071,110,965 |
| <u>Additions</u> | |
| Contributions | |
| Employer Contributions | \$ 30,804,271 |
| Employee Contributions | 4,914,726 |
| Total | <u>\$ 35,718,997</u> |
| Investment Income: | |
| Net Appreciation (Depreciation) in Fair Value of Investments | \$ 6,993,401 |
| Interest | 7,360,605 |
| Dividends | 4,009,386 |
| Other | 190,304 |
| Total Investment Income | <u>\$ 18,553,696</u> |
| Investment Expenses | <u>(1,957,143)</u> |
| Net Income from Investing Activities | \$ 16,596,553 |
| Total Additions | \$ 52,315,550 |
| <u>Deductions</u> | |
| Benefits Paid directly to Participants | \$ (74,881,530) |
| Return of Contributions | (2,928) |
| Beneficiary Payments | (4,147,031) |
| Administrative Fees | (386,495) |
| Total Deductions | <u>\$ (79,417,984)</u> |
| <u>Total</u> | |
| Net Increase/(Decrease) | \$ (27,102,434) |
| Value of Assets - June 30, 2015 | \$ 1,044,008,531² |

¹ Restated value reflects City actually contributing \$34,932,005 during Fiscal Year ending June 30, 2015 in lieu of \$38,263,500 included in last year's valuation as a receivable.

² For GASB 67 disclosures, the System will report \$1,013,204,260, which excludes the receivable City contribution.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

Actuarial Value of Assets

The actuarial value of assets represents a “smoothed” value developed by the actuary to reduce, or eliminate, erratic results which could develop from short-term fluctuations in the market value of assets. For this System, the actuarial value has been calculated by first calculating the expected actuarial value of assets based on last year’s valuation interest rate, last year’s actuarial value of assets, and the net cash flow (contributions less benefit payments) of the System over the year prior to the valuation. One-third of the market value of assets less the expected actuarial value of assets is then added to the expected actuarial value of assets to determine the valuation assets.

| Table II-3 Development of the Actuarial Value of Assets | |
|--|-------------------------|
| 1. Actuarial Value of Assets - June 30, 2014 | \$ 1,011,523,185 |
| Employer Contributions | 30,804,271 |
| Employee Contributions | 4,914,726 |
| Benefit Payments | (79,031,489) |
| Expected Return at 7.0% | <u>66,873,314</u> |
| 2. Expected Value at June 30, 2015 (EV) | \$ 1,035,084,007 |
| 3. Actual Market Value at June 30, 2014 (AV) | 1,044,008,531 |
| 4. One-Third of AV less EV | <u>2,974,841</u> |
| 5. Actuarial Value of Assets - June 30, 2015 [2. + 4.] | \$ 1,038,058,848 |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

**Table II-4
Allocation of Actuarial Value of Assets as of June 30, 2015**

| | General Employees | Firefighters and Police | Total |
|---|------------------------------|------------------------------------|-------------------|
| 1. Actuarial Value of Assets at June 30, 2014 | \$ 563,980,166 | \$ 447,543,019 | \$1,011,523,185 |
| 2. Contributions | | | |
| 2a. Receivable City Contributions | \$ 14,216,293 | \$ 16,587,978 | \$ 30,804,271 |
| 2b. Member Contributions | <u>3,220,280</u> | <u>1,694,446</u> | <u>4,914,726</u> |
| 2c. Total Contributions | \$ 17,436,573 | \$ 18,282,424 | \$ 35,718,997 |
| 3. Benefit Payments (allocated on the basis of FY 2015 expected payments) | (43,012,556) | (36,018,933) | (79,031,489) |
| 4. Investment Earnings (based on 7.31% return) | <u>38,982,006</u> | <u>30,866,149</u> | <u>69,848,155</u> |
| 5. Actuarial Value of Assets at June 30, 2015 | \$ 577,386,189 | \$ 460,672,659 | \$1,038,058,848 |
| 6. Market Value of Assets at June 30, 2015 (used only for comparison to the Present Value of Accrued Benefits) | \$ 580,695,505 | \$ 463,313,026 | \$1,044,008,531 |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

Investment Performance

The market value of assets (MVA) returned 1.2% during fiscal year 2015, which is less than the expected 7.0% return (assumption in prior year's valuation) by 5.8%.

A return of 7.3% on the actuarial value of assets (AVA) is primarily the result of the asset smoothing method being utilized for the calculation of the actuarial value of assets. Since only a portion of the gain or loss from the performance of the System is recognized in a given year, in periods of very good performance, the AVA can lag significantly behind the MVA. In a period of negative returns, the AVA does not decline as rapidly as the MVA.

| Table II-5 Annual Rates of Return | | |
|--|---------------------|------------------------|
| Year Ending June 30, | Market Value | Actuarial Value |
| 1999 | 9.9% | 14.7% |
| 2000 | 8.8% | 11.9% |
| 2001 | (2.3%) | 5.4% |
| 2002 | (7.6%) | (0.9%) |
| 2003 | 5.4% | (2.5%) |
| 2004 | 11.1% | 9.5% |
| 2005 | 6.7% | 7.2% |
| 2006 | 4.7% | 6.2% |
| 2007 | 15.1% | 8.7% |
| 2008 | (5.2%) | 4.9% |
| 2009 | (15.3%) | (2.1%) |
| 2010 | 13.1% | (4.6%) |
| 2011 | 20.2% | 4.6% |
| 2012 | 0.4% | 11.2% |
| 2013 | 11.8% | 7.0% |
| 2014 | 17.1% | 10.5% |
| 2015 | 1.2% | 7.3% |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION II
ASSETS**

**Table II-6
Projection of System's Benefit Payments and Contributions**

| Fiscal Year Ending | Expected Benefit Payments | Expected City Contributions* | Expected Employee Contributions* |
|---------------------------|----------------------------------|-------------------------------------|---|
| 2016 | \$ 83,538,000 | \$ 30,804,000 | \$ 8,790,000 |
| 2017 | 85,492,000 | 33,413,000 | 9,083,000 |
| 2018 | 87,155,000 | 34,357,000 | 9,361,000 |
| 2019 | 95,349,000 | 35,388,000 | 9,704,000 |
| 2020 | 93,031,000 | 36,449,000 | 10,113,000 |
| 2021 | 94,770,000 | 37,501,000 | 10,417,000 |
| 2022 | 96,763,000 | 38,735,000 | 10,729,000 |
| 2023 | 99,396,000 | 40,031,000 | 11,051,000 |
| 2024 | 101,811,000 | 41,347,000 | 11,382,000 |
| 2025 | 104,115,000 | 42,730,000 | 11,724,000 |

* Assumes contributions are made uniformly throughout the year.

Expected benefit payments are projected for the closed group valued at June 30, 2015. Projecting any further than ten years using a closed-group would not yield reliable predictions due to the omission of new hires. These projections do not include additional ad hoc COLAs, which may be granted by the City Council in future years.

Expected City contributions are shown on a cash basis. That is, while the FY 2016 contribution amount was already booked for funding purposes in FY 2015, it is being contributed in FY 2016. The FY 2017 contribution is based on a 2015 valuation rate of 17.79%. Expected contributions for FY 2017 and beyond are projected based on an employer normal cost rate of 9.12%. The employer contribution also uses a closed 20-year amortization of the 2012 unfunded liability balance and 20-year bases for all changes and gains or losses arising since. In addition, the PSREP has ten years remaining. Future gains and losses are amortized over 20 years from the valuation in which they are first recognized. In all cases, the amortization assumes that annual payments will increase by 3% per year. The projections assume the market value of assets will earn 7.0% per year and that any previous investment losses or gains not yet recognized in the asset smoothing method through the June 30, 2015 valuation date, will be picked up throughout the period shown.

THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015

SECTION III
LIABILITIES

In this section, we present detailed information on System liabilities including:

- **Disclosure** of System liabilities at June 30, 2014 and June 30, 2015; and
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of Future Benefits:** Used for analyzing the financial outlook of the System, this represents the amount of money needed today to fully pay off all future benefits and expenses of the System, assuming participants continue to accrue benefits.
- **Actuarial Liability:** Used for funding calculations, this liability is calculated taking the Present Value of Benefits above and subtracting the present value of future Employer Normal Costs under an acceptable actuarial funding method. This method is referred to as the **Entry Age Normal** funding method.
- **Present Value of Accrued Benefits:** Used for communicating the current level of liabilities, this liability reflects the total amount of money needed today to fully fund the current accrued obligations of the System, assuming no future accruals of benefits, assets continue to earn 7% per year and no ad hoc COLAs are awarded. These liabilities are also required for accounting purposes (FASB ASC Topic No. 960) and used to assess whether the Plan can meet its current benefit commitments.

None of the liabilities disclosed in this report is appropriate for use in settling the liabilities of the System.

The following table discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of System assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION III
LIABILITIES**

**Table III-1
Liabilities/Net (Surplus)/Unfunded
Combined**

| | June 30, 2014 | June 30, 2015 |
|---|-------------------------|-------------------------|
| Present Value of Future Benefits | | |
| Active Participant Benefits | \$ 653,359,737 | \$ 646,663,564 |
| Retiree Benefits | 772,800,764 | 776,311,843 |
| DROP Participants | 0 | 27,895,707 |
| Terminated Vested and Inactive Members | <u>43,487,160</u> | <u>46,534,540</u> |
| Present Value of Future Benefits (PVFB) | \$ 1,469,647,661 | \$ 1,497,405,654 |
| Market Value of Assets (MVA) | \$ 1,074,442,460 | \$ 1,044,008,531 |
| Future Member Contributions | 95,756,780 | 90,449,526 |
| Future City Contributions | <u>299,448,421</u> | <u>362,947,597</u> |
| Total Resources | \$ 1,469,647,661 | \$ 1,497,405,654 |
| Employer Normal Cost ¹ | \$ 16,352,486 | \$ 17,112,571 |
| Actuarial Liability | | |
| Active Participant Benefits | \$ 381,178,288 | \$ 373,880,691 |
| Retiree Benefits | 772,800,764 | 776,311,843 |
| DROP Participants | 0 | 27,895,707 |
| Terminated Vested and Inactive Members | <u>43,487,160</u> | <u>46,534,540</u> |
| Actuarial Liability (AL) | \$ 1,197,466,212 | \$ 1,224,622,781 |
| Actuarial Value of Assets (AVA) | 1,011,523,185 | 1,038,058,848 |
| Net (Surplus)/Unfunded (AL – AVA) | \$ 185,943,027 | \$ 186,563,933 |
| Present Value of Accrued Benefits | | |
| Present Value of Accrued Benefits (PVAB) | \$ 1,102,840,649 | \$ 1,125,773,088 |
| Market Value of Assets (MVA) | <u>1,074,442,460</u> | <u>1,044,008,531</u> |
| Net (Surplus)/Unfunded (PVAB – MVA) | \$ 28,398,189 | \$ 81,764,557 |

¹ Net of employee contributions

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION III
LIABILITIES**

**Table III-1
Liabilities/Net (Surplus)/Unfunded
General Employees**

| | June 30, 2014 | June 30, 2015 |
|---|-----------------------|-----------------------|
| Present Value of Future Benefits | | |
| Active Participant Benefits | \$ 337,338,989 | \$ 347,761,430 |
| Retiree Benefits | 406,289,785 | 409,497,439 |
| Terminated Vested and Inactive Members | <u>30,308,969</u> | <u>31,639,979</u> |
| Present Value of Future Benefits (PVFB) | \$ 773,937,743 | \$ 788,898,848 |
| Employer Normal Cost ¹ | \$ 7,811,598 | \$ 8,425,928 |
| Actuarial Liability | | |
| Active Participant Benefits | \$ 214,406,303 | \$ 220,881,080 |
| Retiree Benefits | 406,289,785 | 409,497,439 |
| Terminated Vested and Inactive Members | <u>30,308,969</u> | <u>31,639,979</u> |
| Actuarial Liability (AAL) | \$ 651,005,057 | \$ 662,018,498 |
| Actuarial Value of Assets (AVA) | <u>563,980,166</u> | <u>577,386,189</u> |
| Net (Surplus)/Unfunded (AAL – AVA) | \$ 87,024,891 | \$ 84,632,309 |
| Present Value of Accrued Benefits | | |
| Present Value of Accrued Benefits (PVAB) | \$ 592,690,625 | \$ 601,958,193 |

¹ Net of employee contributions

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION III
LIABILITIES**

**Table III-1
Liabilities/Net (Surplus)/Unfunded
Firefighters and Police**

| | June 30, 2014 | June 30, 2015 |
|---|-----------------------|-----------------------|
| Present Value of Future Benefits | | |
| Active Participant Benefits | \$ 316,020,748 | \$ 298,902,134 |
| Retiree Benefits | 366,510,979 | 366,814,404 |
| DROP Participants | 0 | 27,895,707 |
| Terminated Vested and Inactive Members | <u>13,178,191</u> | <u>14,894,561</u> |
| Present Value of Future Benefits (PVFB) | \$ 695,709,918 | \$ 708,506,806 |
| Employer Normal Cost ¹ | \$ 8,540,888 | \$ 8,686,643 |
| Actuarial Liability | | |
| Active Participant Benefits | \$ 166,771,985 | \$ 152,999,611 |
| Retiree Benefits | 366,510,979 | 366,814,404 |
| DROP Participants | 0 | 27,895,707 |
| Terminated Vested and Inactive Members | <u>13,178,191</u> | <u>14,894,561</u> |
| Actuarial Liability (AAL) | \$ 546,461,155 | \$ 562,604,283 |
| Actuarial Value of Assets (AVA) | <u>447,543,019</u> | <u>460,672,659</u> |
| Net (Surplus)/Unfunded (AAL – AVA) | \$ 98,918,136 | \$ 101,931,624 |
| Present Value of Accrued Benefits | | |
| Present Value of Accrued Benefits (PVAB) | \$ 510,150,024 | \$ 523,814,895 |

¹ Net of employee contributions

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION III
LIABILITIES**

Changes in Liabilities

Each of the liabilities disclosed in the prior tables are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in System assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure plan assets

In each valuation, we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the System. Below we present key changes in liabilities since the last valuation.

**Table III-2
Changes in Liabilities**

| | Present Value of Benefits | Actuarial Liability | Present Value of Accrued Benefits |
|--|------------------------------|------------------------|--------------------------------------|
| Liabilities as of 6/30/2014 | \$ 1,469,647,661 | \$ 1,197,466,212 | \$ 1,102,840,649 |
| Liabilities as of 6/30/2015 | \$ 1,497,405,654 | \$ 1,224,622,781 | \$ 1,125,773,088 |
| Liability Increase/(Decrease) | \$ 27,757,993 | \$ 27,156,569 | \$ 22,932,438 |
| Change Due to: | | | |
| Plan Amendments | \$ 352,800 | \$ 352,800 | \$ 352,800 |
| Assumption and Method Change | 0 | 0 | 0 |
| Actuarial (Gain)/Loss | NC* | (2,471,392) | NC* |
| Benefits Accumulated and Other Sources | \$ 27,405,193 | \$ 29,275,161 | \$ 22,579,638 |

* NC = not calculated

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION IV
CONTRIBUTIONS**

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the System. Typically, the actuarial process will use a funding scheme that will result in a pattern of contributions that are both stable and predictable.

For this System, the funding scheme employed is the **Entry Age Actuarial Cost Method**. Under this method, there are two components to the total contribution: the **normal cost rate** and the **unfunded actuarial liability rate** (UAL rate). The normal cost rate is determined by taking the value, as of entry age into the Plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary.

The second part is an amortization payment to pay off the unfunded actuarial liability (UAL). The unfunded actuarial liability is the difference between the actuarial assets of the System at the valuation date and the assets the System should hold as determined by the actuarial cost method. This also includes the fixed 20-year amortization of the Public Safety Retirement Enhancement Program (PSREP) beginning June 30, 2005, the fixed 20-year amortization of the Voluntary Retirement Incentive Program (VRIP) beginning June 30, 2012, the fixed 20-year amortization of the Plan changes first reflected June 30, 2014 and additional 20-year amortization layers recognized each year. Please see the table on page 24 for details.

Actuarially Determined Rate

The employer's normal cost rate for General Employees is 6.83% and 13.50% for Firefighters and Police for the fiscal year beginning July 1, 2015. The composite rate is shown in the table below.

The UAL rate is the level percent of member payroll which, when applied to each year's payroll, is sufficient to amortize the various layers of unfunded actuarial liability over their respective 20-year periods.

The table below presents and compares the actuarially determined contributions for the System for this valuation and the prior one.

| Table IV-1 Actuarially Determined Rate | | |
|---|----------------------|----------------------|
| | June 30, 2014 | June 30, 2015 |
| Normal Cost Rate | 8.97% | 9.12% |
| UAL Rate | <u>8.54%</u> | <u>8.67%</u> |
| Total City Rate | 17.51% | 17.79% |

THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015

SECTION IV
CONTRIBUTIONS

The net decrease in the contribution rate was due to the following:

| Source | Rate |
|---------------------------------------|--------------|
| Fewer employees paying 5% Member Rate | 0.31% |
| Actuarial liability gain | (0.10%) |
| Asset gain on actuarial basis | (0.12%) |
| Impact of salary changes | 0.08% |
| Plan changes | 0.01% |
| Change in Employer normal cost | (0.16%) |
| Other miscellaneous experience | <u>0.26%</u> |
| Total net change in City Rate | 0.28% |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION IV
CONTRIBUTIONS**

**Table IV-3
Schedule of Amortization Bases
As of June 30, 2015**

| Type of Base | Date Established | Initial Amount | Initial Amortization Years | 6/30/2015 Outstanding Balance | Remaining Amortization Years | Current Year Amortization Payment |
|--------------------------------|-------------------------|-----------------------|-----------------------------------|--------------------------------------|-------------------------------------|--|
| General Employees | | | | | | |
| 1. VRIP | 7/1/2012 | \$ 6,333,733 | 20 | \$ 6,187,547 | 17 | \$ 519,143 |
| 2. 2012 Initial Unfunded Base | 7/1/2012 | 103,418,782 | 20 | 101,031,817 | 17 | 8,476,699 |
| 3. 2013 Gain Base | 7/1/2013 | (12,102,537) | 20 | (11,949,807) | 18 | (963,089) |
| 4. 2014 Plan Changes | 7/1/2014 | 14,317,179 | 20 | 14,245,458 | 19 | 1,106,141 |
| 5. 2014 Gain Base | 7/1/2014 | (23,617,845) | 20 | (23,499,534) | 19 | (1,824,707) |
| 6. 2015 Plan Changes | 7/1/2015 | 293,400 | 20 | 293,400 | 20 | 22,008 |
| 7. 2015 Gain Base | 7/1/2015 | (1,676,572) | 20 | <u>(1,676,572)</u> | 20 | <u>(125,759)</u> |
| General Employees Total | | | | \$ 84,632,309 | | \$ 7,210,436 |
| Firefighters and Police | | | | | | |
| 1. PSREP | 1/1/2005 | \$ 16,691,568 | 20 | 11,791,835 | 10 | \$ 1,488,769 |
| 2. 2012 Initial Unfunded Base | 7/1/2012 | 1,487,770 | 20 | 1,453,431 | 17 | 121,945 |
| 3. VRIP | 7/1/2012 | 111,455,557 | 20 | 94,432,204 | 17 | 7,922,983 |
| 4. 2013 Gain Base | 7/1/2013 | (2,418,261) | 20 | (2,387,743) | 18 | (192,439) |
| 5. 2014 Plan Changes | 7/1/2014 | 6,372,663 | 20 | 6,340,740 | 19 | 492,350 |
| 6. 2014 Gain Base | 7/1/2014 | (14,332,013) | 20 | (14,260,218) | 19 | (1,107,287) |
| 7. 2015 Plan Changes | 7/1/2015 | 59,400 | 20 | 59,400 | 20 | 4,456 |
| 8. 2015 Gain Base | 7/1/2015 | 4,501,975 | 20 | <u>4,501,975</u> | 20 | <u>337,690</u> |
| Firefighters and Police Total | | | | \$ 101,931,624 | | \$ 9,068,467 |
| Combined Total | | | | \$ 186,563,933 | | 16,278,903 |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION IV
CONTRIBUTIONS**

**Table IV-4
Development of Actuarially Determined Contribution Rate
Composite Rate**

| | June 30, 2014 (expensed FY 2015) (paid FY 2016) | June 30, 2015 (expensed FY 2016) (paid FY 2017) |
|--|---|---|
| 1. Actuarial Liability | | |
| a. Active Employees | \$ 381,178,288 | \$ 373,880,691 |
| b. Retired Members | 772,800,764 | 776,311,843 |
| c. DROP Participants | 0 | 27,895,707 |
| d. Vested Terminated Members | <u>43,487,160</u> | <u>46,534,540</u> |
| e. Total Actuarial Liability | \$ 1,197,466,212 | \$ 1,224,622,781 |
| 2. Actuarial Value of Assets | <u>1,011,523,185</u> | <u>1,038,058,848</u> |
| 3. Unfunded Actuarial Liability (UAL) (1) – (2) | \$ 185,943,027 | \$ 186,563,933 |
| 4. UAL Amortizations | \$ 15,573,308 | \$ 16,278,903 |
| 5. Active Member Payroll¹ | \$ 182,298,248 | \$ 187,711,934 |
| 6. Employer Contribution Results | | |
| a. Employer Normal Cost Rate | 8.97% | 9.12% |
| b. Amortization of UAL (4) ÷ (5) | <u>8.54%</u> | <u>8.67%</u> |
| c. Total Employer Contribution Rate June 30 | 17.51% | 17.79% |

¹ Includes payroll for DROP participants.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION IV
CONTRIBUTIONS**

**Table IV-4
Development of Actuarially Determined Contribution Rate
General Employees**

| | June 30, 2014 (expensed FY 2015) (paid FY 2016) | June 30, 2015 (expensed FY 2016) (paid FY 2017) |
|--|---|---|
| 1. Actuarial Liability | | |
| a. Active Employees | \$ 214,406,303 | \$ 220,881,080 |
| b. Retired Members | 406,289,785 | 409,497,439 |
| c. Vested Terminated Members | <u>30,308,969</u> | <u>31,639,979</u> |
| d. Total Actuarial Liability | \$ 651,005,057 | \$ 662,018,498 |
| 2. Actuarial Value of Assets | <u>563,980,166</u> | <u>577,386,189</u> |
| 3. Unfunded Actuarial Liability (UAL) (1) – (2) | \$ 87,024,891 | \$ 84,632,309 |
| 4. UAL Amortizations | \$ 7,101,152 | \$ 7,210,436 |
| 5. Active Member Payroll | \$ 119,079,236 | \$ 123,366,429 |
| 6. Employer Contribution Results | | |
| a. Employer Normal Cost Rate | 6.56% | 6.83% |
| b. Amortization of UAL (4) ÷ (5) | <u>5.96%</u> | <u>5.84%</u> |
| c. Total Employer Contribution Rate June 30 | 12.52% | 12.67% |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION IV
CONTRIBUTIONS**

**Table IV-4
Development of Actuarially Determined Contribution Rate
Firefighters and Police**

| | June 30, 2014 (expensed FY 2014) (paid FY 2015) | June 30, 2015 (expensed FY 2015) (paid FY 2016) |
|--|---|---|
| 1. Actuarial Liability | | |
| a. Active Employees | \$ 166,771,985 | \$ 152,999,611 |
| b. Retired Members | 366,510,979 | 366,814,404 |
| c. DROP Participants | 0 | 27,895,707 |
| c. Vested Terminated Members | <u>13,178,191</u> | <u>14,894,561</u> |
| d. Total Actuarial Liability | \$ 546,461,155 | \$ 562,604,283 |
| 2. Actuarial Value of Assets | <u>447,543,019</u> | <u>460,672,659</u> |
| 3. Unfunded Actuarial Liability (UAL) (1) – (2) | \$ 98,918,136 | \$ 101,931,624 |
| 4. UAL Amortizations | \$ 8,472,156 | \$ 9,068,467 |
| 5. Active Member Payroll¹ | \$ 63,219,012 | \$ 64,345,505 |
| 6. Employer Contribution Results | | |
| a. Employer Normal Cost Rate | 13.51% | 13.50% |
| b. Amortization of UAL (4) ÷ (5) | <u>13.40%</u> | <u>14.09%</u> |
| c. Total Employer Contribution Rate June 30 | 26.91% | 27.59% |

¹ Includes payroll for DROP participants.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION V
FINANCIAL STATEMENT INFORMATION**

Accounting Standard Codification Topic No. 960 of the Financial Accounting Standards Board specifies certain information for a plan to disclose regarding its funded status. FASB ASC Topic No. 960 disclosures provide a quasi “snap shot” view of how the plan’s assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to buy the benefits for all members if the Plan were to terminate.

The present value of accrued benefits (FASB ASC Topic No. 960) is determined assuming that the System is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.0% per annum.

FASB ASC Topic No. 960 specifies that a comparison of the present value of accrued (accumulated) benefits with the market value of the assets as of the valuation date must be provided. Table V-1 shows the FASB liabilities as of June 30, 2014 and June 30, 2015. Table V-2 then reconciles the FASB ASC Topic No. 960 liabilities determined as of the prior valuation, June 30, 2014, to the liabilities as of June 30, 2015.

Tables V-3 can be used with the City’s CAFR. Table V-3 is the Solvency Test which shows the portion of Accrued Liability covered by Assets.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**SECTION V
FINANCIAL STATEMENT INFORMATION**

**Table V-1
Accounting Statement Information
Employees' Retirement System for the City of Norfolk**

| | June 30, 2014 | June 30, 2015 |
|---|----------------------|----------------------|
| FASB ASC Topic No. 960 | | |
| 1. Present Value of Benefits Accrued and Vested to Date | | |
| a. Members Currently Receiving Payments | \$ 772,800,764 | \$ 804,207,550 |
| b. Vested Terminated Members | 43,487,160 | 46,534,540 |
| c. Active Members | <u>277,184,700</u> | <u>267,573,998</u> |
| d. Total PVVB | \$ 1,093,472,624 | \$ 1,118,316,087 |
| 2. Present Value of Non-Vested Accrued Benefits for Active Members | <u>9,368,026</u> | <u>7,457,000</u> |
| 3. Total Present Value of Accrued Benefits | \$ 1,102,840,649 | \$ 1,125,773,088 |
| 4. Assets at Market Value | <u>1,074,442,460</u> | <u>1,044,008,531</u> |
| 5. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero | \$ 28,398,189 | \$ 81,764,557 |
| 6. Ratio of Assets to Value of Benefits (4) / (3) | 97.4% | 92.7% |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**SECTION V
FINANCIAL STATEMENT INFORMATION**

**Table V-2
Statement of Changes in Total Actuarial
Present Value of All Accrued Benefits**

| | Accumulated Benefit Obligation (FASB ASC Topic No. 960) |
|---|--|
| Actuarial Present Value of Accrued Benefits as of June 30, 2014 | \$ 1,102,840,649 |
| Increase/(Decrease) During Years Attributable to: | |
| Passage of Time | \$ 74,432,743 |
| Benefit Paid – FY 2014-2015 | (79,031,489) |
| Change in Assumptions | 0 |
| Plan Changes | 352,800 |
| Benefits Accrued, Other Gains/Losses | <u>27,178,384</u> |
| Net Increase/(Decrease) | \$ <u>22,932,438</u> |
| Actuarial Present Value of Accrued Benefits as of June 30, 2015 | \$ 1,125,773,088 |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**SECTION V
FINANCIAL STATEMENT INFORMATION**

**Table V-3
SOLVENCY TEST
Aggregate Accrued Liabilities For**

| Valuation Date July 1, | (1) Active Member Contributions | (2) Retirees Vested Terms, Beneficiaries | (3) Active Members (Employer Financed Portion) | Reported Assets ¹ | Portion of Accrued Liabilities Covered by Reported Assets | | |
|------------------------------|--|---|--|---------------------------------|--|------|------|
| | | | | | (1) | (2) | (3) |
| 2001 | N/A | \$ 351,458,128 | \$ 391,145,346 | \$ 838,073,790 | 100% | 100% | 100% |
| 2002 | N/A | 372,747,805 | 411,904,507 | 798,070,877 | 100% | 100% | 100% |
| 2003 | N/A | 397,310,521 | 415,925,946 | 760,502,908 | 100% | 100% | 94% |
| 2004 | \$215,208 | 421,470,962 | 423,984,074 | 816,120,329 | 100% | 100% | 93% |
| 2005 | 198,018 | 469,436,407 | 414,295,992 | 854,146,038 | 100% | 100% | 93% |
| 2006 | 84,360 | 566,232,610 | 372,779,959 | 881,035,790 | 100% | 100% | 84% |
| 2007 | 83,376 | 585,584,308 | 386,563,802 | 925,821,257 | 100% | 100% | 88% |
| 2008 | 78,685 | 605,567,032 | 403,409,400 | 937,766,796 | 100% | 100% | 82% |
| 2009 | 72,008 | 617,813,260 | 411,732,258 | 885,609,003 | 100% | 100% | 65% |
| 2010 | 54,808 | 637,488,648 | 409,218,088 | 817,698,124 | 100% | 100% | 44% |
| 2011 | 196,733 | 658,831,846 | 404,945,415 | 831,975,004 | 100% | 100% | 43% |
| 2012 | 629,200 | 768,508,092 | 375,269,338 | 923,198,558 | 100% | 100% | 41% |
| 2013 | 1,044,830 | 782,859,810 | 375,809,231 | 954,499,184 | 100% | 100% | 45% |
| 2014 | 1,707,965 | 816,287,924 | 379,470,323 | 1,011,523,185 | 100% | 100% | 51% |
| 2015 | 8,424,567 | 850,742,090 | 365,456,124 | 1,038,058,848 | 100% | 100% | 49% |

¹ Reported assets are actuarial value of assets. If assets were market value of assets, the results would be different.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**APPENDIX A
MEMBERSHIP INFORMATION**

| Table A-1 Summary of Active Membership as of June 30, 2015 ¹ | | | | |
|--|--------------|--------------------|------------------------|-----------------------|
| Plan | Count | Average Age | Average Service | Average Salary |
| General | 2,704 | 47.5 | 10.8 | \$45,624 |
| Firefighters and Police | <u>1,152</u> | <u>39.4</u> | <u>11.3</u> | <u>52,390</u> |
| Total System | 3,856 | 45.1 | 11.0 | \$47,645 |

¹ Excludes those on Leave of Absence

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-2
Summary of Inactive Membership as of June 30, 2015**

| | Count | Annual Benefit | Average Annual Benefit |
|--|------------|-------------------|------------------------|
| Service Retirements | | | |
| General | 2,049 | \$ 37,388,145 | \$ 18,247 |
| Firefighters and Police | <u>878</u> | <u>30,472,156</u> | <u>34,706</u> |
| Total | 2,927 | \$ 67,860,302 | \$ 23,184 |
| DROP Participants¹ | | | |
| General | 0 | \$ 0 | \$ 0 |
| Firefighters and Police | <u>58</u> | <u>1,782,148</u> | <u>30,727</u> |
| Total | 58 | \$ 1,782,148 | \$ 30,727 |
| Contingent Annuitants | | | |
| General | 324 | \$ 2,715,690 | \$ 8,382 |
| Firefighters and Police | <u>175</u> | <u>2,105,655</u> | <u>12,032</u> |
| Total | 499 | \$ 4,821,344 | \$ 9,662 |
| Disableds | | | |
| General | 201 | \$ 2,737,233 | \$ 13,618 |
| Firefighters and Police | <u>130</u> | <u>2,998,693</u> | <u>23,067</u> |
| Total | 331 | \$ 5,735,925 | \$ 17,329 |
| Vested Former Members² | | | |
| General | 882 | \$ 4,733,712 | \$ 5,367 |
| Firefighters and Police | <u>246</u> | <u>2,292,124</u> | <u>9,318</u> |
| Total | 1,128 | \$ 7,025,836 | \$ 6,229 |

¹ For those in the DROP period as of June 30, 2015, the amount shown is 70% of the full monthly benefit.

² Benefits are payable at age 60 for General Employees and age 55 for Firefighters and Police. Includes 12 participants on leave of absence (3 General employees and 9 Firefighters and Police) that are currently vested.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-3
Data Reconciliation**

| | Actives | Vested Former Members | Service Retirements | DROP Participants | Contingent Annuitants | Disableds | Total |
|---------------------------|----------------|--------------------------------------|--------------------------------|------------------------------|----------------------------------|------------------|--------------|
| Count as of June 30, 2014 | 3,925 | 1,052 | 2,882 | 0 | 500 | 336 | 8,695 |
| New Entrants | 407 | 6 | 2 | 0 | 9 | 0 | 424 |
| Terminations/Retirements | | | | | | | |
| - Vested | (266) | 128 | 80 | 58 | 0 | 0 | 0 |
| - Non-Vested | (197) | 0 | 0 | 0 | 0 | 0 | (197) |
| Disablements | (14) | (3) | 0 | 0 | 0 | 17 | 0 |
| Vested | | | | | | | |
| - that Retired | N/A | (44) | 44 | 0 | 0 | 0 | 0 |
| - that Returned to Work | 3 | (3) | 0 | 0 | 0 | 0 | 0 |
| Deaths | | | | | | | |
| - With a Beneficiary | (2) | (1) | (26) | 0 | 35 | (6) | 0 |
| - Without a Beneficiary | NC | (7) | (55) | 0 | (45) | (16) | (123) |
| Count as of June 30, 2015 | 3,856 | 1,128 | 2,927 | 58 | 499 | 331 | 8,799 |

NC = Not Calculated. Any participants who died during the plan year are included in the non-vested terminations.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX A
MEMBERSHIP INFORMATION**

| Table A-4 Distribution of Active Participants - General Employees | | | | | | | | | | | |
|--|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|--------------|
| COUNTS BY AGE/SERVICE | | | | | | | | | | | |
| Age | Service | | | | | | | | | | Total |
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 & up | |
| Under 25 | 16 | 23 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 25 to 29 | 67 | 111 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 207 |
| 30 to 34 | 61 | 125 | 72 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| 35 to 39 | 29 | 107 | 66 | 38 | 11 | 0 | 0 | 0 | 0 | 0 | 251 |
| 40 to 44 | 26 | 101 | 56 | 75 | 30 | 9 | 0 | 0 | 0 | 0 | 297 |
| 45 to 49 | 30 | 91 | 59 | 64 | 45 | 29 | 13 | 1 | 0 | 0 | 332 |
| 50 to 54 | 30 | 81 | 91 | 73 | 64 | 36 | 60 | 22 | 4 | 0 | 461 |
| 55 to 59 | 20 | 66 | 52 | 70 | 72 | 27 | 50 | 39 | 23 | 4 | 423 |
| 60 to 64 | 10 | 48 | 39 | 35 | 37 | 20 | 39 | 28 | 28 | 19 | 303 |
| 65 to 69 | 2 | 14 | 11 | 13 | 14 | 10 | 10 | 3 | 9 | 6 | 92 |
| 70 & up | 0 | 5 | 2 | 3 | 1 | 3 | 1 | 3 | 2 | 3 | 23 |
| Total | 291 | 772 | 476 | 390 | 274 | 134 | 173 | 96 | 66 | 32 | 2,704 |

| TOTAL SALARY BY AGE/SERVICE | | | | | | | | | | | |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|------------------|--------------------|
| Age | Service | | | | | | | | | | Total |
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 & up | |
| Under 25 | 530,715 | 629,478 | 36,223 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,196,416 |
| 25 to 29 | 2,406,853 | 3,756,488 | 942,418 | 58,949 | 0 | 0 | 0 | 0 | 0 | 0 | 7,164,708 |
| 30 to 34 | 2,152,981 | 4,608,353 | 2,845,405 | 639,029 | 0 | 0 | 0 | 0 | 0 | 0 | 10,245,768 |
| 35 to 39 | 1,131,770 | 4,479,011 | 2,711,809 | 1,572,093 | 474,409 | 0 | 0 | 0 | 0 | 0 | 10,369,092 |
| 40 to 44 | 992,370 | 4,565,106 | 2,417,569 | 3,642,283 | 1,476,471 | 394,142 | 0 | 0 | 0 | 0 | 13,487,941 |
| 45 to 49 | 1,297,338 | 3,655,942 | 2,639,214 | 3,055,448 | 2,250,129 | 1,529,640 | 645,614 | 78,921 | 0 | 0 | 15,152,246 |
| 50 to 54 | 1,244,545 | 3,999,424 | 3,942,292 | 3,272,213 | 3,179,047 | 1,845,878 | 3,189,550 | 1,201,762 | 270,727 | 0 | 22,145,438 |
| 55 to 59 | 1,088,603 | 3,193,310 | 2,269,441 | 3,201,030 | 3,391,352 | 1,403,258 | 2,574,739 | 2,389,751 | 1,284,312 | 234,395 | 21,030,191 |
| 60 to 64 | 408,660 | 2,567,059 | 1,896,221 | 1,464,671 | 2,020,132 | 995,345 | 2,235,678 | 1,885,198 | 1,695,231 | 1,233,207 | 16,401,402 |
| 65 to 69 | 58,381 | 742,739 | 467,387 | 572,941 | 776,306 | 554,313 | 631,728 | 194,178 | 544,193 | 410,867 | 4,953,033 |
| 70 & up | 0 | 209,112 | 36,978 | 122,724 | 31,471 | 316,968 | 52,165 | 134,833 | 123,745 | 192,198 | 1,220,194 |
| Total | 11,312,216 | 32,406,022 | 20,204,957 | 17,601,381 | 13,599,317 | 7,039,544 | 9,329,474 | 5,884,643 | 3,918,208 | 2,070,667 | 123,366,429 |

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
ACTUARIAL VALUATION AS OF JUNE 30, 2015**

**APPENDIX A
MEMBERSHIP INFORMATION**

| Table A-4 Distribution of Active Participants (including DROP) - Firefighters & Police Employees | | | | | | | | | | | |
|---|-----------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|----------|--------------|
| COUNTS BY AGE/SERVICE | | | | | | | | | | | |
| Age | Service | | | | | | | | | | Total |
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 & up | |
| Under 25 | 11 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 25 to 29 | 6 | 120 | 51 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 179 |
| 30 to 34 | 5 | 57 | 98 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 207 |
| 35 to 39 | 2 | 18 | 45 | 73 | 18 | 0 | 0 | 0 | 0 | 0 | 156 |
| 40 to 44 | 0 | 11 | 40 | 53 | 70 | 22 | 0 | 0 | 0 | 0 | 196 |
| 45 to 49 | 0 | 9 | 24 | 35 | 66 | 39 | 24 | 1 | 0 | 0 | 198 |
| 50 to 54 | 0 | 1 | 2 | 11 | 28 | 21 | 40 | 17 | 2 | 0 | 122 |
| 55 to 59 | 0 | 1 | 2 | 5 | 6 | 8 | 12 | 14 | 12 | 1 | 61 |
| 60 to 64 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 6 | 6 | 7 | 27 |
| 65 to 69 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 5 |
| 70 & up | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 24 | 265 | 263 | 226 | 192 | 92 | 81 | 38 | 20 | 9 | 1,210 |

| TOTAL SALARY BY AGE/SERVICE | | | | | | | | | | | |
|-----------------------------|----------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|----------------|-------------------|
| Age | Service | | | | | | | | | | Total |
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 & up | |
| Under 25 | 418,484 | 1,981,810 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,400,294 |
| 25 to 29 | 228,103 | 5,075,833 | 2,290,806 | 100,845 | 0 | 0 | 0 | 0 | 0 | 0 | 7,695,587 |
| 30 to 34 | 197,529 | 2,407,756 | 4,551,862 | 2,413,031 | 0 | 0 | 0 | 0 | 0 | 0 | 9,570,178 |
| 35 to 39 | 75,950 | 752,110 | 2,079,699 | 3,913,950 | 1,099,390 | 0 | 0 | 0 | 0 | 0 | 7,921,099 |
| 40 to 44 | 0 | 438,343 | 1,838,576 | 2,842,973 | 4,294,735 | 1,415,825 | 0 | 0 | 0 | 0 | 10,830,452 |
| 45 to 49 | 0 | 356,990 | 1,078,759 | 1,813,858 | 4,057,795 | 2,505,806 | 1,727,901 | 73,905 | 0 | 0 | 11,615,014 |
| 50 to 54 | 0 | 37,975 | 93,330 | 575,298 | 1,602,822 | 1,344,888 | 2,984,725 | 1,330,428 | 164,792 | 0 | 8,134,258 |
| 55 to 59 | 0 | 40,164 | 93,330 | 265,324 | 354,254 | 494,323 | 820,234 | 982,971 | 948,559 | 81,721 | 4,080,880 |
| 60 to 64 | 0 | 0 | 0 | 0 | 184,532 | 55,206 | 275,043 | 371,158 | 503,704 | 518,150 | 1,907,793 |
| 65 to 69 | 0 | 0 | 25,000 | 0 | 25,000 | 25,000 | 27,000 | 0 | 0 | 87,950 | 189,950 |
| 70 & up | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 920,066 | 11,090,981 | 12,051,362 | 11,925,279 | 11,618,528 | 5,841,048 | 5,834,903 | 2,758,462 | 1,617,055 | 687,821 | 64,345,505 |

* Tables above include 58 participants in DROP

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

A. Actuarial Assumptions

Interest Rate

7.0% per annum, compounded annually (adopted as of June 30, 2012).

Mortality

Pre-Retirement: RP-2000 Combined Health Mortality projected to 2010 by Scale AA*

Health Annuitants: RP-2000 Combined Health Mortality projected to 2010 by Scale AA

Disableds: RP-2000 Disability Mortality projected to 2010 by Scale AA

* 5% of deaths are assumed to be accidental for general employees;
50% of deaths are assumed to be accidental for firefighters and police.

Margin for Future Mortality Improvement – Mortality experience for the period 2006-2012 was most closely approximated by the RP-2000 table without projection, therefore the projection to 2010 should provide for improvement through the 2018 valuation date.

Salary Increase

Representative values are as follows:

| Annual Rate of Salary Increase | | |
|--------------------------------|---------|-------------------------|
| Service | General | Firefighters and Police |
| 0 | 7.12% | 11.24% |
| 1 | 6.97 | 8.15 |
| 2 | 6.81 | 7.63 |
| 3 | 6.66 | 7.63 |
| 4 | 6.50 | 7.63 |
| 5 | 6.35 | 7.63 |
| 10 | 5.85 | 7.63 |
| 15 | 5.70 | 7.33 |
| 20 | 5.26 | 5.78 |
| 25 | 4.74 | 4.55 |
| 30 | 4.23 | 4.55 |

The table above includes an annual inflation rate of 3.00%.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

Withdrawal

| Service | General | Firefighters and Police |
|---------|---------|-------------------------|
| 0 | 15.00% | 10.00% |
| 1 | 13.00 | 9.00 |
| 2 | 11.00 | 8.00 |
| 3 | 9.00 | 7.00 |
| 4 | 9.00 | 6.00 |
| 5 | 7.50 | 5.00 |
| 10 | 2.50 | 2.80 |
| 15 | 2.50 | 1.00 |
| 20 | 2.50 | 1.00 |
| 25 | 1.00 | 1.00 |
| 30 | 1.00 | 1.00 |

Disability

| Age | General* | | Firefighters and Police** |
|-----|----------|--------|---------------------------|
| | Male | Female | Unisex |
| 20 | 0.07% | 0.05% | 0.04% |
| 25 | 0.08 | 0.05 | 0.06 |
| 30 | 0.09 | 0.06 | 0.08 |
| 35 | 0.14 | 0.10 | 0.11 |
| 40 | 0.22 | 0.15 | 0.22 |
| 45 | 0.34 | 0.23 | 0.40 |
| 50 | 0.51 | 0.35 | 0.67 |
| 54 | 0.66 | 0.45 | 0.90 |
| 55 | 0.70 | 0.48 | 0.96 |
| 59 | 1.02 | 0.70 | 1.26 |

* 20% of General disabilities are assumed to be accidental

**70% of Police & Fire disabilities are assumed to be accidental

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

Retirement
General:

| Age | Early Retirement | Normal Service Retirement |
|------------|-------------------------|----------------------------------|
| 45 | 5.00% | 7.50% |
| 50 | 7.50 | 7.50 |
| 51 | 5.00 | 7.50 |
| 52 | 5.00 | 7.50 |
| 53 | 5.00 | 7.50 |
| 54 | 5.00 | 7.50 |
| 55 | 5.00 | 7.50 |
| 56 | 5.00 | 7.50 |
| 57 | 5.00 | 7.50 |
| 58 | 5.00 | 7.50 |
| 59 | 5.00 | 7.50 |
| 60 | | 12.50 |
| 61 | | 12.50 |
| 62 | | 12.50 |
| 63 | | 12.50 |
| 64 | | 12.50 |
| 65 | | 25.00 |
| 66 | | 15.00 |
| 67 | | 15.00 |
| 68 | | 15.00 |
| 69 | | 15.00 |
| 70 | | 100.00 |

THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Firefighters and Police:

For those eligible for the Deferred Retirement Option Program (DROP):

| Service | Rate of Retirement* |
|-----------|---------------------|
| 20 | 2.50% |
| 21 | 3.00 |
| 22 | 3.50 |
| 23 | 4.00 |
| 24 | 5.00 |
| 25 | 35.00 |
| 26 | 35.00 |
| 27 and up | 35.00 |

For those not eligible for the Deferred Retirement Option Program (DROP):

| Service | Rate of Retirement* |
|-----------|---------------------|
| 20 | 2.50% |
| 21 | 3.00 |
| 22 | 3.50 |
| 23 | 4.00 |
| 24 | 5.00 |
| 25 | 10.00 |
| 26 | 25.00 |
| 27 and up | 10.00 |

*In lieu of the rates above, any active participant at least age 65 are assumed to retire immediately.

NOTE: Rates apply to each member based on eligibility requirements as defined in the Summary of Benefit and Contribution Provisions.

Future Expenses

The assumed interest rate is net of the anticipated future administrative expenses of the Fund.

Loading or Contingency Reserves

A load of 0.85% for General Employees and 1.05% for Firefighters and Police is applied to retirement benefits for active employees to account for unused sick leave balances at time of retirement.

**THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

Marital Status

65% of the General Employees and 75% of the Firefighters and Police are assumed to be married, with males three-years older than females.

Rationale for Economic and Demographic Assumptions

Assumptions were set by the Board of Trustees on the basis of recommendations made by Cheiron as a result of an experience study presented in October 2012. This presentation is incorporated by reference into the valuation report as the rationale to both economic and demographic assumptions.

Changes in Assumptions

None.

THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

Actuarial Cost Method: Entry Age Normal Cost Method. The unfunded actuarial liability (UAL) that arose from the offering of the Public Safety Retirement Enhancement Program is being amortized over a closed 20-year period commencing as of July 1, 2005. The UAL as of June 30, 2012 was amortized over a closed period of 20 years. Future annual changes in the UAL due to Plan changes and gains or losses will be amortized over its own closed 20-year period. All rates are developed using a level-percent of pay amortization method with a 3% per annum increase in the payments.

Asset Valuation Method: The actuarial value of assets are determined by first calculating the expected actuarial value of assets based on last year's valuation interest rate, last year's actuarial value of assets, and the net cash flow (contributions less benefit payments and administrative expenses) of the System over the year prior to the valuation. One-third of the difference between market value of assets and the expected actuarial value of assets is then added to the expected actuarial value of assets to determine the valuation assets.

Changes in Actuarial Methods

None.

THE EMPLOYEES' RETIREMENT SYSTEM FOR THE CITY OF NORFOLK
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APPENDIX C
SUMMARY OF PLAN PROVISIONS

The following is intended to summarize the key benefits valued in this valuation. Members of the System and other parties should not rely on this summary as a substitute for or interpretation of the laws and ordinances of the Norfolk City Code covering this retirement plan.

1. Membership

Any permanent regular full-time employee entering the service of the City of Norfolk is required to become a member of the Retirement System. Upon entering the System, members are classified according to their occupational group, either as General Employees, Firefighters, Police Officers, or Paramedics.

Paramedics, formerly members of the General Employees Group, were reclassified as members of firefighters and police effective June 9, 1992. City Council members on or after July 1, 2001 are classified as members of firefighters and police.

For each full calendar year beginning on or after January 1, 1997, any permanent part-time employees shall be members of and entitled to benefits in proportion to which their annual hours bear to that of full-time employees.

A member, who was a Norfolk Community Services Board employee on June 30, 2012, who became a City employee on July 1, 2012 began participating in this retirement plan on such date. Prior service for these employees was credited towards benefit eligibility only. Lastly, these employees are exempt from the member's mandatory contributions applicable to anyone hired on or after October 5, 2010.

2. Normal Service Retirement Allowance

Eligibility

The earlier of age 60 or 30 years of creditable service for General Employees. The earlier of age 55 or 25 years of creditable service for Firefighters, Police Officers, and Paramedics. Mandatory retirement is age 65 for Firefighters and Police Officers.

Amount

Employees Hired Before July 1, 1980

For General Employees, the pension earned is 2% of average final compensation for each year of creditable service.

Effective January 1, 1997 for General Employees, the maximum number of years of creditable service is the greater of 35 years or the number of years of service as of December 31, 1996.

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For Firefighters, Police Officers, and Paramedics, the pension earned is 2.5% of average final compensation for each year of creditable service up to a maximum of 65% of average final compensation.

Employees Hired on or After July 1, 1980

For General Employees, the pension earned is 1.75% of average final compensation for each year of creditable service up to a maximum of 35 years.

For Firefighters, Police Officers, and Paramedics, the pension earned is 2.5% of average final compensation for each year of creditable service up to a maximum of 65% of average final compensation.

“Average Final Compensation” means the average annual earnable compensation for the three years of creditable service which produces the highest average. Creditable service consists of membership service plus 100% of accumulated unused sick leave for all employees except Firefighters. For Firefighters, 46% of unused sick leave accumulated prior to July 1, 1985 and 100% of unused sick leave accumulated on and after July 1, 1985 is included.

3. Early Service Retirement Allowance

Eligibility

Within five years of eligibility for normal service retirement.

Amount

Accrued service retirement allowance deferred to normal service retirement age. A member may elect to receive an immediate benefit equal to the accrued service retirement allowance reduced by $\frac{1}{4}$ of 1% for each month commencement date precedes the normal retirement date for General Employees, and $\frac{1}{2}$ of 1% for each month commencement date precedes the normal retirement date for firefighters, police officers, and paramedics.

4. Vested Allowance

Eligibility

Five years of creditable service.

Amount

Accrued service retirement allowance deferred to normal retirement age. If not eligible for retirement, a member may elect to leave their contributions made prior to July 1, 1972 with interest, if any, in the System until normal service retirement date.

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5. **Ordinary Disability Retirement Allowance**

Eligibility

Five years of creditable service and total and permanent disability not due to an accident in the performance of duty.

Amount

Accrued service retirement allowance with a minimum of 25% of average final compensation. The minimum cannot exceed the normal service retirement allowance based on average final compensation and creditable service projected to normal service retirement date.

6. **Accidental Disability Retirement Allowance**

Eligibility

Total and permanent disability as a result of an accident in the performance of duty, regardless of length of service. Applications must be filed within six years from date of accident.

The disability of a firefighter, police officer, sheriff, or deputy sheriff caused by hypertension, heart disease, or respiratory disease is presumed to have been suffered in the line of duty unless the contrary is shown by medical evidence.

Amount

The amount payable is 66⅔% of average final compensation.

7. **Ordinary Death Benefit**

Eligibility

Death in active service due to causes not the result of an accident in the performance of duty. Benefits are paid to a designated beneficiary or estate.

Amount

All contributions, if any, made by the member with not less than one-half of the interest credited are paid. In addition, if the member had one year of creditable service if he became a member prior to July 1, 1979 and five years of creditable service if he became a member on or after July 1, 1979, an additional lump-sum benefit equal to 50% of their earnable compensation during the year immediately preceding their death is payable. If a member

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dies in service after the earlier of completion of 10 years of service or early service retirement eligibility and if the designated beneficiary for the lump-sum death benefit is the spouse, the spouse may elect to receive, in lieu of the lump sum death benefit, a monthly pension payable until death or remarriage. If the member was eligible for early or normal service retirement, the spouse's benefit is equal to one-half of the retirement allowance that would have been payable to the member had the member retired and immediately commenced payment. If the member was not eligible for early or normal service retirement, the spouse's benefit is equal to one-half of the normal service retirement allowance, which would have been payable to the member if he or she had been vested, such benefit to commence at the same time as the vested benefit would have been paid to the member. If the spouse dies or remarries before the youngest unmarried child attains age 18, the pension shall continue to the date that all the children have died, married, or attained age 18, whichever occurs first. If the spouse was receiving benefits on or before June 30, 1978, payments shall continue after remarriage with no further payments after death.

8. Accidental Death Benefit

Eligibility

Death in active service resulting from an accident in the performance of duty within six years from the date of the accident. The death of a firefighter, police officer, sheriff, or deputy sheriff caused by hypertension, heart disease, or respiratory disease in the case of firefighters is presumed to have been suffered in the line of duty, unless the contrary is shown by medical evidence.

Amount

Fifty percent of average final compensation is payable to spouse until death or remarriage. If there is no spouse or if spouse dies or remarries, benefit is payable to children under age 18 or dependent parents. In addition, all contributions, if any, made by the member with not less than one-half of the interest credited are paid to their designated recipient or estate. If there is no spouse, a lump-sum benefit equal to 50% of their earnable compensation during the year immediately preceding their death is payable.

Offset on Account of Workers' Compensation

All benefits paid under the provisions of any workers' compensation act or any similar law to any member or beneficiary, or to the dependents of any member or beneficiary on account of any disability or death are in such manner as the Board determines, offset against any benefits provided from City contributions to the Employees' Retirement System.

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9. **Death Benefit After Retirement**

Eligibility

Death of a retired member receiving retirement allowance payments and who completed five years of creditable service, if they became a member after July 1, 1979, or of a spouse receiving an accidental death benefit.

Amount

Lump sum equal to one-half of the average final compensation on which the retirement allowance of the deceased retired member or spouse was based. The lump sum is payable to the surviving spouse, to unmarried children under age 18, or unmarried children over age 18 who are physically or mentally unable to make a living.

In the case of a retired member who dies and leaves a surviving spouse, the spouse may elect to receive, in lieu of the lump-sum death benefit, a monthly benefit payable until death or remarriage, which is equal to one-half of the retirement allowance, which the deceased member was receiving at the time of their death, provided the member had not made an optional election. If the spouse dies or remarries before the youngest unmarried child attains age 18, the pension will continue to the date that all the children have died, married, or attained age 18, whichever occurs first. If the spouse was receiving payments on or before June 30, 1978, payments shall continue after remarriage with no further payments after death.

10. **Return of Contributions**

Eligibility

Termination of membership prior to death.

Amount

If not eligible for a retirement allowance, all contributions with not less than one-half of interest credited. If eligible for normal or early service, ordinary disability, accidental disability, or vested retirement allowance, their contributions, if any, is not less than one-half of the interest credited. The member may elect, prior to the commencement of their retirement allowance, to receive an annuity which is the actuarial equivalent of their accumulated contributions.

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11. Normal and Optional Forms of Benefits

| Normal Life | Life Annuity |
|--------------------|--|
| Option A | A reduced pension with the provision that at death the reduced pension will be continued throughout the life of the designated beneficiary. |
| Option B | A reduced pension with the provision that at death, one-half of the reduced pension will be continued throughout the life of the designated beneficiary. |
| Option C | A reduced pension with the provision that at death some other benefit approved by the Board of Trustees will be payable. |

12. Contributions

| | |
|------------|---|
| By Members | 5% of pay for anyone hired on or after October 5, 2010. Effective January 8, 2015, all members (except City Council members hired before October 5, 2010) will be required to contribute 5% of pay. |
| By City | Annual contributions actuarially computed to be required to cover the cost of benefits of the System. |

Both member and City contributions will continue to be made throughout the DROP period for any eligible participant who has elected to participate in DROP.

13. Deferred Retirement Option Program (DROP)

Eligibility

Any police officer or fireman member in service who attains his or her Normal Retirement Age may elect to participate.

Amount

The DROP period may be elected by the police officer or fireman member but shall not exceed four years. During the DROP period, 70% of the participant's monthly retirement allowance shall be paid to the DROP account. No interest shall accrue on this account during the DROP period. At the end of the DROP period, the participant will receive a lump sum of the DROP account and shall begin receiving his or her full monthly benefit payment as a retired member.

Only City contributions will continue to be made throughout the DROP period.

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14. Changes in Plan Provisions

Effective July 1, 2015, 1,176 in-pay participants received a one-time supplemental payment of \$300. Eligible participants were those receiving retirement benefits for a year (retired on or before June 30, 2014) with 15 or more years of creditable service or disability retirement who receive less than \$24,250 in annual retirement benefits and workers' compensation benefits.