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November 17, 2016

PERSONAL & CONFIDENTIAL

Ms. Ann Harter
Director of Finance
Town of Newington
131 Cedar Street
Newington, CT 06111

Re: Town of Newington Pension Plans
Actuarial Reports for Fiscal Year 2017-2018

Dear Ann:

We are pleased to provide these actuarial reports for the Town of Newington Pension Plans. The reports show the financial status of the plans as of July 1, 2016 and present the cost figures for 2017-2018. A summary of the principal results of each valuation can be found at the end of Section I.

The Actuarially Determined Contributions for FY 2017-2018 are shown below:

| | Administrative Plan | Municipal Plan | Police Plan | Total |
|---------------------------|--------------------------------|---------------------------|------------------------|------------------|
| Town | \$421,054 | \$787,717 | \$3,613,092 | \$4,821,863 |
| Board of Education | <u>70,387</u> | <u>953,955</u> | <u>0</u> | <u>1,024,342</u> |
| Total | 491,441 | 1,741,672 | 3,613,092 | 5,846,205 |

Please let me know if you have any questions.

Sincerely,

Rebecca A. Sielman, FSA
Consulting Actuary



TOWN OF NEWINGTON POLICE OFFICERS' PENSION PLAN

**Actuarial Valuation as of July 1, 2016
For Fiscal Year 2017-18**

Prepared by

Rebecca A. Sielman, FSA
Consulting Actuary

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2016 for fiscal year 2017-18. This report presents the results of our valuation.

The ultimate cost of a pension plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. Pension costs are met by contributions and by investment return on plan assets. The principal purpose of this report is to set forth an actuarial recommendation of the contribution, or range of contributions, which will properly fund the plan, in accordance with applicable government regulations. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Information needed to meet disclosure requirements.
- Review of plan experience for the previous year to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the funding and operation of the plan.

This report may not be used for purposes other than those listed above without Milliman's prior written consent. If this report is distributed to other parties, it must be copied in its entirety, including this certification section.

Milliman's work is prepared solely for the internal business use of the Town. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s): (a) the Town may provide a copy of Milliman's work, in its entirety, to the Town's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Town; and (b) the Town may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

In preparing this report, we relied on employee census data and financial information as of the valuation date, furnished by the Town. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Certification

The calculations reported herein have been made on a basis consistent with our understanding of ERISA and the related sections of the tax code. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting employer accounting requirements. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices.

We further certify that, in our opinion, each actuarial assumption, method and technique used is reasonable taking into account the experience of the Plan and reasonable expectations or would, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption, method, or technique were reasonable. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurement.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

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

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Rebecca A. Sielman, FSA
Consulting Actuary

Section I - Executive Summary

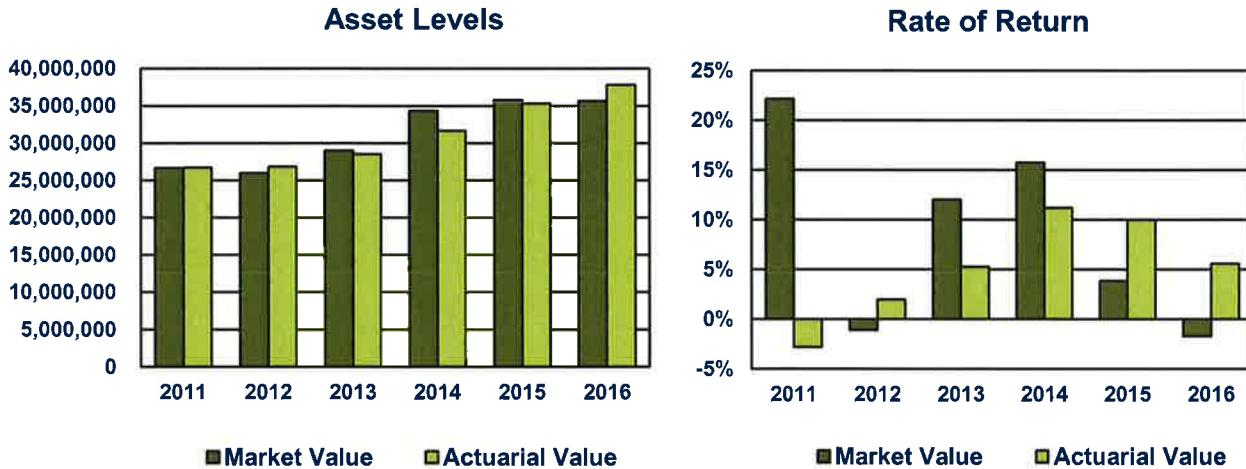
A. Highlights

Assets

There are two different measures of the plan's assets that are used throughout this report. The **Market Value** is a snapshot of the plan's investments as of the valuation date. The **Actuarial Value** is a smoothed asset value designed to temper the volatile fluctuations in the market by recognizing investment gains or losses over five years.

| | Market | Actuarial |
|--|--------------|--------------|
| Value as of July 1, 2015 | \$35,743,440 | \$35,321,259 |
| Contributions | 3,873,243 | 3,873,243 |
| Investment Income | (610,978) | 1,986,032 |
| Benefit Payments and Administrative Expenses | (3,345,357) | (3,345,357) |
| Value as of July 1, 2016 | 35,660,348 | 37,835,177 |

For fiscal year 2015-16, the plan's assets earned -1.70% on a Market Value basis and 5.58% on an Actuarial Value basis. The actuarial assumption for this period was 7.375%; the result is an asset loss of \$3,261,500 on a Market Value basis and a loss of \$638,900 on an Actuarial Value basis. Historical asset values are shown in the graph below to the left; historical returns are shown in the graph below to the right.



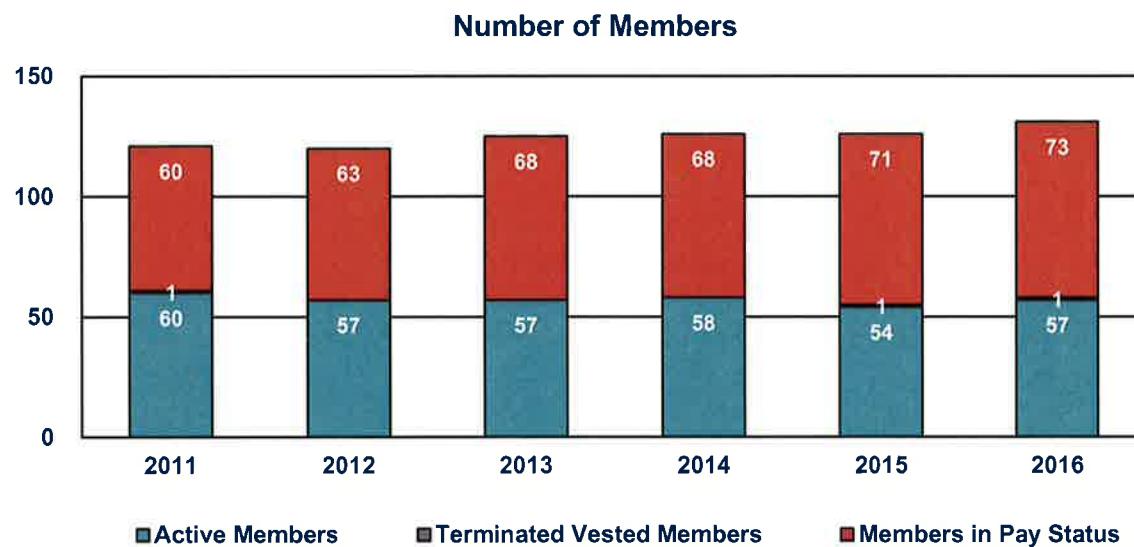
Please note that the Actuarial Value currently exceeds the Market Value by \$2,174,800. This figure represents investment losses that will be gradually recognized over the next five years. This process will exert upward pressure on the Town's contribution, unless there are offsetting market gains.

Section I - Executive Summary

A. Highlights

Membership

There are three basic categories of plan members included in the actuarial valuation: (1) active employees who have met the eligibility requirements for membership, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) members who are receiving monthly pension benefits.



From July 1, 2015 to July 1, 2016, the overall membership increased from 126 to 131. During this period, there were 5 new active member, 1 active and 1 disabled members retired, 1 active member terminated and is a benefit, 1 inactive member was paid a refund, 1 alternate payee commenced benefits, and 2 retirees died with benefits continuing to a beneficiary.



Section I - Executive Summary

A. Highlights

Plan Changes

The employee contribution rate changed and as of July 1, 2016 is 9% for all members. This change decreased the Actuarially Determined Contribution by \$61,400.

Please note that the employee contribution rate also changed effective July 1, 2015 from 8% to 8.5%. Due to an oversight, this change was not reflected in our July 1, 2015 valuation report. We have shown corrected figures throughout this report.

Changes in Actuarial Methods or Assumptions

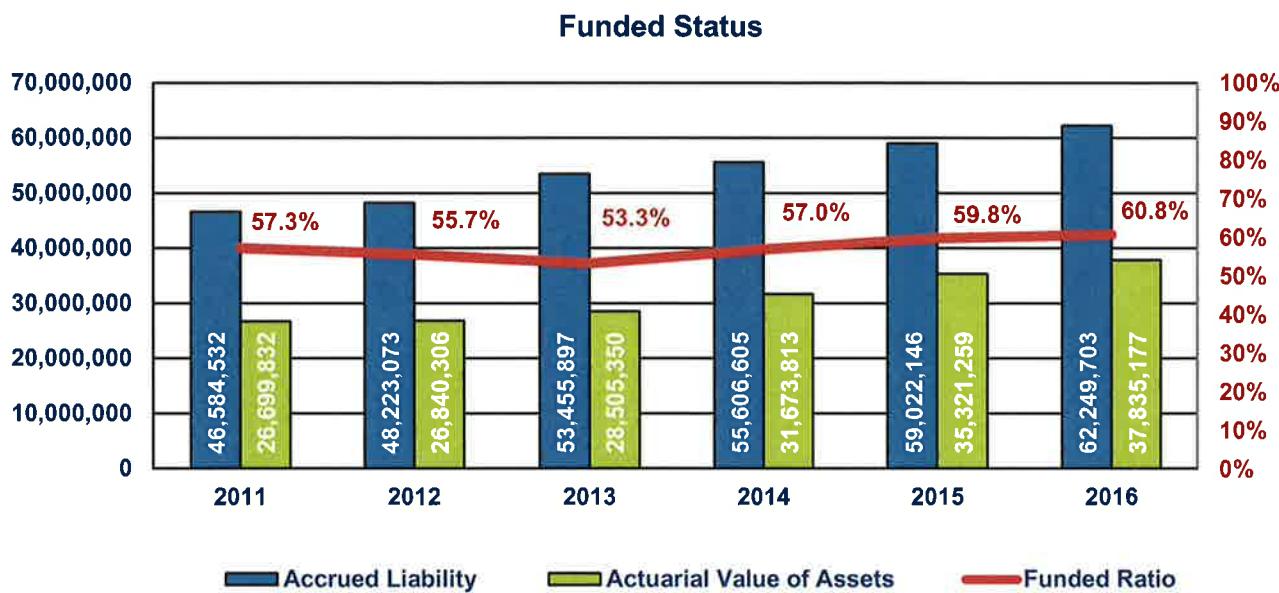
In order to better anticipate future market returns, we have lowered the interest rate assumption from 7.375% to 7.25%. This change increased the Unfunded Accrued Liability by \$887,000 and increased the Actuarially Determined Contribution by \$125,500. We will continue to reduce the interest rate assumption by increments over the next several years.

Section I - Executive Summary

A. Highlights

Funded Status

The chart below shows the plan's Accrued Liability and Actuarial Value of Assets for the past few years. Since investment gains and losses are recognized gradually over a five year period, the large market losses suffered in 2007-08 and 2008-09 are manifested by a gradual decline in the funded ratio. In addition, the interest rate assumption has been lowered, which results in a corresponding increase in the Accrued Liability.



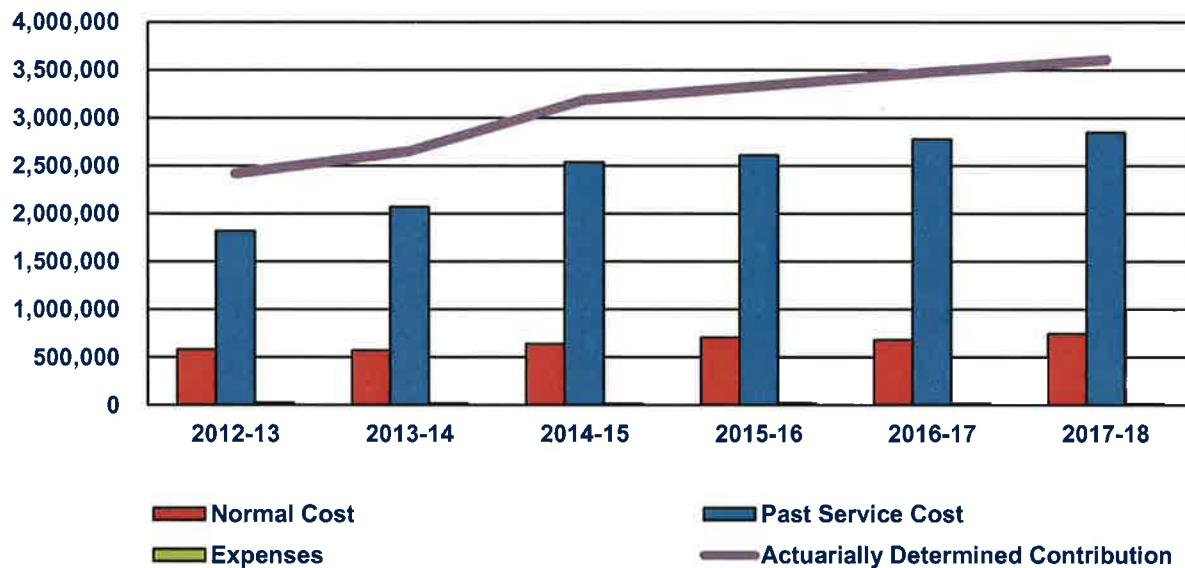
Section I - Executive Summary

A. Highlights

Actuarially Determined Contribution

The Actuarially Determined Contribution consists of three pieces: a **Normal Cost** payment to fund the benefits earned each year, a **Past Service Cost** to gradually reduce any unfunded or surplus liability, and **Expenses** expected to be paid from plan assets. If the plan has a sufficiently large surplus, the Past Service Cost may be large enough to cover the Normal Cost, in which case no contribution is required.

Contribution levels for the current year and the past few fiscal years are shown below.



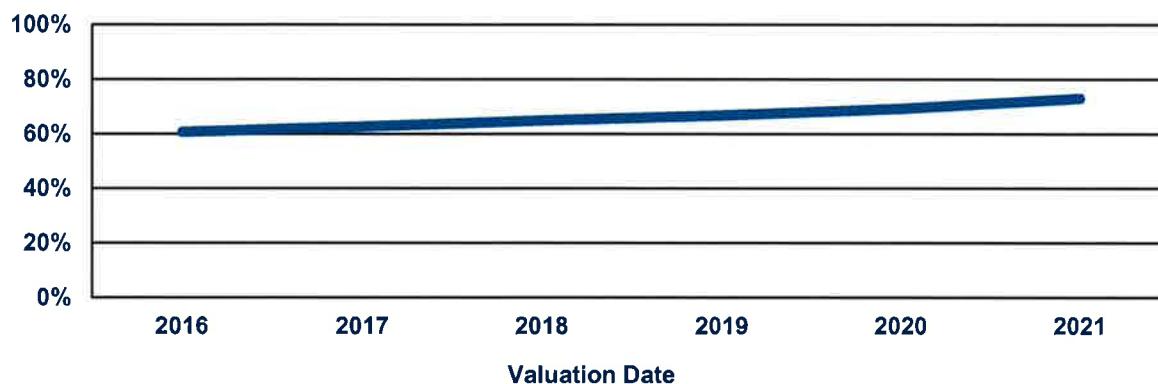
Section I - Executive Summary

A. Highlights

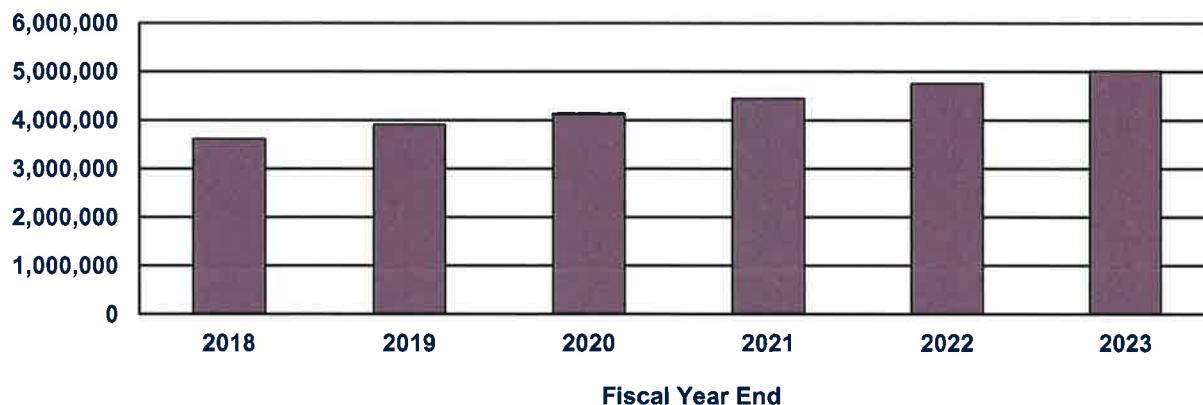
Long Range Forecast

The Town intends to reduce the interest rate assumption gradually over the next several years. This will depress the funded ratio and increase the Actuarially Determined Contribution while that process is underway.

Funded Ratio



Actuarially Determined Contribution



To the extent that there are future investment or liability gains or losses, changes in the actuarial assumptions or methods, or plan changes, the actual valuation results will differ from these forecasts. Please see Section III C for more details of the long range forecast.

Section I - Executive Summary

B. Summary of Principal Results

| Membership | July 1, 2015 | July 1, 2016 |
|--|---------------------|---------------------|
| Active Members | 54 | 57 |
| Terminated Vested Members | 1 | 1 |
| Members in Pay Status | 71 | 73 |
| Payroll | \$5,827,731 | \$6,151,253 |
| Assets and Liabilities | July 1, 2015 | July 1, 2016 |
| Market Value of Assets | \$35,743,440 | \$35,660,348 |
| Actuarial Value of Assets | 35,321,259 | 37,835,177 |
| Accrued Liability for Active Members | \$17,606,347 | \$19,549,164 |
| Accrued Liability for Terminated Vested Members | 7,571 | 126,625 |
| Accrued Liability for Members in Pay Status | 41,408,228 | 42,573,914 |
| Total Accrued Liability | 59,022,146 | 62,249,703 |
| Unfunded Accrued Liability | 23,700,887 | 24,414,526 |
| Funded Ratio | 59.8% | 60.8% |
| Actuarially Determined Contribution for Fiscal Year | 2016-17 | 2017-18 |
| Normal Cost | \$682,792 | \$746,183 |
| Past Service Cost | 2,780,864 | 2,850,609 |
| Expenses | 22,600 | 16,300 |
| Actuarially Determined Contribution | 3,486,256 | 3,613,092 |

Section II - Plan Assets

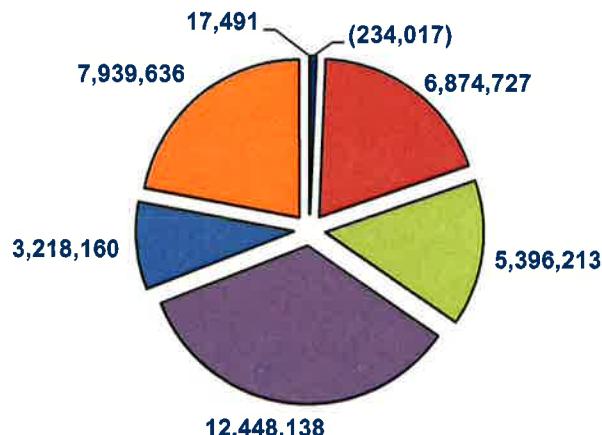
A. Summary of Fund Transactions

| | |
|--|---------------------|
| Market Value as of July 1, 2015 | \$35,743,440 |
| Employer Contributions | 3,338,285 |
| Employee Contributions | 534,958 |
| Benefit Payments | (3,329,560) |
| Interest and Dividends | 573,933 |
| Capital Gains/(Losses) | (993,268) |
| Investment Expenses | (191,643) |
| Administrative Expenses | (15,797) |
| Market Value as of July 1, 2016 | 35,660,348 |
| Approximate Rate of Return | -1.70% |

Note: The rate shown here is not the dollar or time weighted investment yield rate which measures investment performance. It is an approximate net return assuming all activity occurred on average midway through the fiscal year.

Asset Allocation

- Cash
- Core Fixed Income
- Intermediate Term Bonds
- Large Cap US Equities
- Small Cap US Equities
- Developed Foreign Equities
- Accrued Income/(Expenses)/(Benefits)



Section II - Plan Assets

B. Development of Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses over a five year period. The Actuarial Value of Assets as of July 1, 2016 is determined below.

1. Expected Market Value of Assets:

| | |
|--|------------------|
| a. Market Value of Assets as of July 1, 2015 | \$35,743,440 |
| b. Employer and Employee Contributions | 3,873,243 |
| c. Benefit Payments and Administrative Expenses | (3,345,357) |
| d. Expected Investment Return Based on 7.375% Interest | <u>2,650,566</u> |
| e. Expected Market Value of Assets as of July 1, 2016 | 38,921,892 |

2. Actual Market Value of Assets as of July 1, 2016

35,660,348

3. Market Value (Gain)/Loss: (1e) - (2)

3,261,544

4. Delayed Recognition of Market (Gains)/Losses:

| Plan Year End | (Gain)/Loss | Percent Not Recognized | Amount Not Recognized |
|---------------|-------------|------------------------|-----------------------|
| 06/30/2016 | \$3,261,544 | 80% | \$2,609,235 |
| 06/30/2015 | 1,254,807 | 60% | 752,884 |
| 06/30/2014 | (2,406,578) | 40% | (962,631) |
| 06/30/2013 | (1,123,296) | 20% | <u>(224,659)</u> |
| | | | 2,174,829 |

5. Actuarial Value as of July 1, 2016: (2) + (4)

37,835,177

6. Approximate Rate of Return on Actuarial Value

5.58%

7. Actuarial Value (Gain)/Loss

638,876

Section III - Development of Contribution

A. Past Service Cost

For determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over a period of 10 years.

| | July 1, 2015 | July 1, 2016 |
|---|------------------|------------------|
| 1. Accrued Liability | | |
| Active Members | \$17,606,347 | \$19,549,164 |
| Terminated Vested Members | 7,571 | 126,625 |
| Retired Members | 36,157,210 | 36,505,737 |
| Disabled Members | 1,558,647 | 1,082,607 |
| Beneficiaries of Deceased Members | <u>3,692,371</u> | <u>4,985,570</u> |
| Total | 59,022,146 | 62,249,703 |
| 2. Actuarial Value of Assets (see Section II B) | 35,321,259 | 37,835,177 |
| 3. Unfunded Accrued Liability: (1) - (2) | 23,700,887 | 24,414,526 |
| 4. Funded Ratio: (2) / (1) | 59.8% | 60.8% |
| 5. Amortization Period | 10 | 10 |
| 6. Amortization Growth Rate | 3.50% | 3.50% |
| 7. Past Service Cost: (3) amortized over (5) | 2,780,864 | 2,850,609 |

Section III - Development of Contribution

B. Actuarially Determined Contribution

| | Fiscal Year 2016-17 | Fiscal Year 2017-18 |
|---|------------------------|------------------------|
| 1. Total Normal Cost | \$1,177,497 | \$1,299,140 |
| 2. Expected Employee Contributions | 494,705 | 552,957 |
| 3. Expected Expenses | 22,600 | 16,300 |
| 4. Net Normal Cost: (1) - (2) + (3) | 705,392 | 762,483 |
| 5. Past Service Cost (see Section III A) | 2,780,864 | 2,850,609 |
| 6. Actuarially Determined Contribution: (4) + (5) | 3,486,256 | 3,613,092 |

Section III - Development of Contribution

C. Long Range Forecast

This forecast is based on the results of the July 1, 2016 actuarial valuation and assumes that the Town will pay the Actuarially Determined Contribution each year, the assets will return the assumed interest rate on a market value basis each year, and there are no future changes in the actuarial methods or assumptions or in the plan provisions. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

| Valuation Date | Interest Rate | Accrued Liability | Values as of the Valuation Date | | | Cash Flows Projected to the Following Fiscal Year | | | | |
|----------------|---------------|-------------------|---------------------------------|----------------------------|--------------|---|--------------------|------------------------|------------------|----------------|
| | | | Actuarial Value of Assets | Unfunded Accrued Liability | Funded Ratio | Fiscal Year Ending | Town Contributions | Employee Contributions | Benefit Payments | Net Cash Flows |
| 7/1/2016 | 7.250% | \$62,249,703 | \$37,835,177 | \$24,414,526 | 60.8% | 2018 | \$3,613,092 | \$563,000 | (\$3,541,000) | \$635,092 |
| 7/1/2017 | 7.125% | 65,049,000 | 40,839,000 | 24,210,000 | 62.8% | 2019 | 3,914,000 | 557,000 | (3,730,000) | 741,000 |
| 7/1/2018 | 7.000% | 67,400,000 | 43,826,000 | 23,574,000 | 65.0% | 2020 | 4,145,000 | 564,000 | (3,944,000) | 765,000 |
| 7/1/2019 | 6.875% | 69,680,000 | 46,631,000 | 23,049,000 | 66.9% | 2021 | 4,445,000 | 561,000 | (4,186,000) | 820,000 |
| 7/1/2020 | 6.750% | 71,887,000 | 49,913,000 | 21,974,000 | 69.4% | 2022 | 4,758,000 | 569,000 | (4,371,000) | 956,000 |
| 7/1/2021 | 6.750% | 73,959,000 | 54,111,000 | 19,848,000 | 73.2% | 2023 | 5,014,000 | 571,000 | (4,547,000) | 1,038,000 |
| 7/1/2022 | 6.750% | 75,964,000 | 58,732,000 | 17,232,000 | 77.3% | 2024 | 5,284,000 | 577,000 | (4,715,000) | 1,146,000 |
| 7/1/2023 | 6.750% | 77,906,000 | 63,750,000 | 14,156,000 | 81.8% | 2025 | 5,640,000 | 583,000 | (4,896,000) | 1,327,000 |
| 7/1/2024 | 6.750% | 79,785,000 | 69,216,000 | 10,569,000 | 86.8% | 2026 | 6,123,000 | 592,000 | (5,051,000) | 1,664,000 |
| 7/1/2025 | 6.750% | 81,601,000 | 75,239,000 | 6,362,000 | 92.2% | 2027 | 7,108,000 | 595,000 | (5,212,000) | 2,491,000 |
| 7/1/2026 | 6.750% | 83,374,000 | 82,016,000 | 1,358,000 | 98.4% | 2028 | 2,105,000 | 602,000 | (5,397,000) | (2,690,000) |
| 7/1/2027 | 6.750% | 85,083,000 | 90,104,000 | (5,021,000) | 105.9% | 2029 | 0 | 618,000 | (5,497,000) | (4,879,000) |
| 7/1/2028 | 6.750% | 86,707,000 | 93,382,000 | (6,675,000) | 107.7% | 2030 | 0 | 621,000 | (5,638,000) | (5,017,000) |
| 7/1/2029 | 6.750% | 88,359,000 | 94,617,000 | (6,258,000) | 107.1% | 2031 | 0 | 632,000 | (5,823,000) | (5,191,000) |
| 7/1/2030 | 6.750% | 89,966,000 | 95,793,000 | (5,827,000) | 106.5% | 2032 | 0 | 644,000 | (5,945,000) | (5,301,000) |
| 7/1/2031 | 6.750% | 91,498,000 | 96,866,000 | (5,368,000) | 105.9% | 2033 | 0 | 651,000 | (6,094,000) | (5,443,000) |
| 7/1/2032 | 6.750% | 93,022,000 | 97,900,000 | (4,878,000) | 105.2% | 2034 | 0 | 660,000 | (6,283,000) | (5,623,000) |
| 7/1/2033 | 6.750% | 94,497,000 | 98,854,000 | (4,357,000) | 104.6% | 2035 | 0 | 677,000 | (6,407,000) | (5,730,000) |
| 7/1/2034 | 6.750% | 95,881,000 | 99,686,000 | (3,805,000) | 104.0% | 2036 | 0 | 683,000 | (5,538,000) | (5,855,000) |
| 7/1/2035 | 6.750% | 97,253,000 | 100,462,000 | (3,209,000) | 103.3% | 2037 | 0 | 702,000 | (6,638,000) | (5,936,000) |

For purposes of this forecast the amortization period declines to 1 year to illustrate the progress of the plan towards becoming fully funded; in actual practice the amortization period will not be less than 10 years in order to shield the Town from contribution volatility.

Section IV - Accounting Information

A. Notes to Required Supplementary Information

The information presented in Section IV has been determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

| | |
|-------------------------------|---------------------------------|
| Valuation Date | July 1, 2016 |
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level percent |
| Amortization Period | Open 10 years from July 1, 2015 |
| Asset Valuation Method | 5 Year Smoothed Market Value |
| Actuarial Assumptions | |
| Investment Rate of Return | 7.25% |
| Projected Salary Increases | 3.50% |
| Amortization Growth Rate | 3.50% |
| Inflation | 2.75% |
| Cost-of-Living Adjustments | 1.50% |

Section IV - Accounting Information

B. Historical Schedule of Funding Progress

| Actuarial Valuation Date | For Fiscal Year | Actuarial Value of Assets | Accrued Liability (AAL) | Unfunded AAL (UAAL) | Funded Ratio (1) / (2) | Covered Payroll (3) / (5) | UAAL as a Percentage of Covered Payroll (6) |
|--------------------------|-----------------|---------------------------|-------------------------|---------------------|------------------------|---------------------------|---|
| 07/01/2007 | 2008-09 | \$26,546,049 | \$38,205,414 | \$11,659,365 | 69.5% | \$4,499,543 | 259.1% |
| 07/01/2008 | 2009-10 | 28,004,694 | 41,214,834 | 13,210,140 | 67.9% | 4,788,496 | 275.9% |
| 07/01/2009 | 2010-11 | 27,947,368 | 43,198,720 | 15,251,352 | 64.7% | 5,237,052 | 291.2% |
| 07/01/2010 | 2011-12 | 27,902,613 | 45,387,810 | 17,485,197 | 61.5% | 5,247,720 | 333.2% |
| 07/01/2011 | 2012-13 | 26,699,832 | 46,584,532 | 19,884,700 | 57.3% | 5,828,742 | 341.1% |
| 07/01/2012 | 2013-14 | 26,840,306 | 48,223,073 | 21,382,767 | 55.7% | 5,561,136 | 384.5% |
| 07/01/2013 | 2014-15 | 28,505,350 | 53,455,897 | 24,950,547 | 53.3% | 5,535,655 | 450.7% |
| 07/01/2014 | 2015-16 | 31,673,813 | 55,606,605 | 23,932,792 | 57.0% | 5,765,839 | 415.1% |
| 07/01/2015 | 2016-17 | 35,321,259 | 59,022,146 | 23,700,887 | 59.8% | 5,827,731 | 406.7% |
| 07/01/2016 | 2017-18 | 37,835,177 | 62,249,703 | 24,414,526 | 60.8% | 6,151,253 | 396.9% |

Section IV - Accounting Information

C. Schedule of Employer Contributions

| Fiscal Year Ending June 30 | (1) Actuarially Determined Contribution | (2) Contribution in Relation to the Actuarially Determined Contribution | | (3) Contribution Deficiency/ (Excess) (1) - (2) | (4) Covered Payroll | (5) Contribution as a Percentage of Covered Payroll (2) / (4) |
|----------------------------------|--|--|--|---|---------------------------|---|
| | | Actuarially Determined Contribution | Contribution Deficiency/ (Excess) (1) - (2) | | | |
| 2009 | \$1,335,957 | \$1,335,957 | \$0 | \$4,499,543 | | 29.7% |
| 2010 | 1,525,296 | 1,525,296 | 0 | 4,788,496 | | 31.9% |
| 2011 | 1,799,656 | 1,799,656 | 0 | 5,237,052 | | 34.4% |
| 2012 | 2,064,999 | 2,064,999 | 0 | 5,247,720 | | 39.4% |
| 2013 | 2,426,210 | 2,804,586 | (378,376) | 5,828,747 | | 48.1% |
| 2014 | 2,661,462 | 2,661,462 | 0 | 5,561,136 | | 47.9% |
| 2015 | 3,195,093 | 3,195,093 | 0 | 5,535,655 | | 57.7% |
| 2016 | 3,338,285 | 3,338,285 | 0 | 5,765,839 | | 57.9% |
| 2017 | 3,486,256 | TBD | TBD | 5,827,731 | | TBD |
| 2018 | 3,613,092 | TBD | TBD | 6,151,253 | | TBD |

Section IV - Accounting Information

D. Accrued and Vested Benefits

The actuarially computed Value of Accrued Benefits represents the present value of (a) the benefits based on earnings and service to date expected to become payable at future dates to present employees, (b) the benefits expected to become payable to former employees who have terminated service with vested rights or who have become inactive, and (c) the benefits currently payable to retired participants and beneficiaries.

| | As of July 1, 2015 | As of July 1, 2016 |
|---|-----------------------|-----------------------|
| 1. Value of Vested Benefits | | |
| Active Members | \$12,334,116 | \$14,161,591 |
| Terminated Vested Members | 7,571 | 126,625 |
| Retired Members | 36,157,210 | 36,505,737 |
| Disabled Members | 1,558,647 | 1,082,607 |
| Beneficiaries of Deceased Members | <u>3,692,371</u> | <u>4,985,570</u> |
| Total Value of Vested Benefits | 53,749,915 | 56,862,130 |
| 2. Value of Non-Vested Benefits | 959,858 | 933,883 |
| 3. Total Value of Accrued Benefits: (1) + (2) | 54,709,773 | 57,796,013 |
| 4. Market Value of Assets | 35,743,440 | 35,660,348 |
| 5. Vested Funded Ratio: (4) / (1) | 66.5% | 62.7% |
| 6. Accrued Funded Ratio: (4) / (3) | 65.3% | 61.7% |

Section IV - Accounting Information
E. Statement of Changes in Accrued Plan Benefits

Increase/(Decrease) during the 2015-2016 plan year attributable to:

| | |
|--|-------------|
| Increase for interest due to the decrease in the discount period | \$3,914,252 |
| Benefits Accumulated/(Forfeited) | 1,671,580 |
| Benefit Payments | (3,329,560) |
| Plan Amendments | 0 |
| Changes in Actuarial Assumptions | 829,968 |
| Net Increase/(Decrease) | 3,086,240 |

Value of Accrued Plan Benefits:

| | |
|-------------------------|--------------|
| July 1, 2016 | \$57,796,013 |
| July 1, 2015 | 54,709,773 |
| Net Increase/(Decrease) | 3,086,240 |

Section V - Membership Data

A. Reconciliation of Membership from Prior Valuation

Details of the changes in the Plan membership since the last valuation are shown below. Additional details on the Plan membership are provided in the remainder of Section V.

| | Active | Term. Vested | Retirees | Disabled | Bene- ficiaries | Total |
|---------------------------------|--------|-----------------|----------|----------|--------------------|-------|
| Count as of July 1, 2015 | 54 | 1 | 57 | 4 | 10 | 126 |
| Terminated not vested | - | - | - | - | - | 0 |
| Terminated, benefits due | (1) | 1 | - | - | - | 0 |
| Retired | (1) | - | 2 | (1) | - | 0 |
| Died, with beneficiary | - | - | (2) | - | - | (2) |
| Died, no beneficiary | - | - | - | - | - | 0 |
| Paid refund | - | (1) | - | - | - | (1) |
| New member | 5 | - | - | - | - | 5 |
| New beneficiary | - | - | - | - | 2 | 2 |
| QDRO alternate payee | - | - | - | - | 1 | 1 |
| Correction | - | - | - | - | - | 0 |
| Count as of July 1, 2016 | 57 | 1 | 57 | 3 | 13 | 131 |

Section V - Membership Data

B. Statistics of Membership

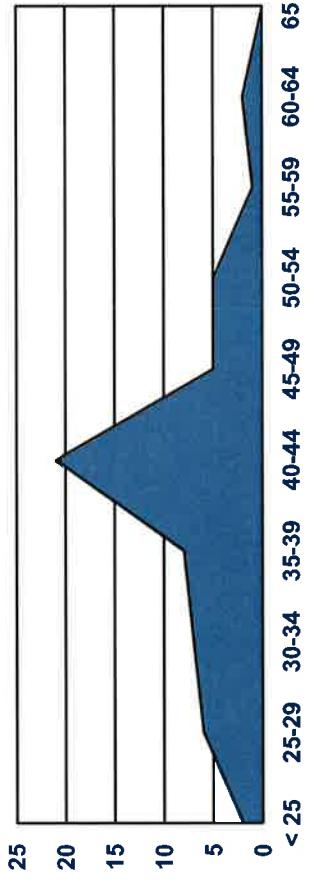
| | As of July 1, 2015 | As of July 1, 2016 |
|--|-----------------------|-----------------------|
| Active Members | | |
| Number | 54 | 57 |
| Average Age | 40.1 | 39.9 |
| Average Service | 11.0 | 10.7 |
| Total Payroll | \$5,827,731 | \$6,151,253 |
| Average Payroll | 107,921 | 107,917 |
| Terminated Vested Members | | |
| Number | 1 | 1 |
| Total Annual Benefit | \$0 | \$22,674 |
| Average Annual Benefit | 0 | 22,674 |
| Average Age | 40.0 | 36.0 |
| Retired Members | | |
| Number | 57 | 57 |
| Total Annual Benefit | \$2,846,498 | \$2,865,281 |
| Average Annual Benefit | 49,939 | 50,268 |
| Average Age | 62.9 | 63.3 |
| Disabled Members | | |
| Number | 4 | 3 |
| Total Annual Benefit | \$134,059 | \$91,961 |
| Average Annual Benefit | 33,515 | 30,654 |
| Average Age | 53.5 | 54.0 |
| Beneficiaries of Deceased Members | | |
| Number | 10 | 13 |
| Total Annual Benefit | \$316,282 | \$440,264 |
| Average Annual Benefit | 31,628 | 33,866 |
| Average Age | 68.9 | 68.0 |

Section V - Membership Data

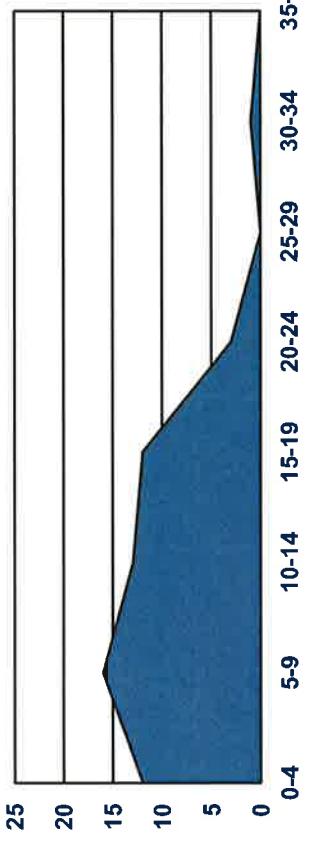
C. Distribution of Active Members as of July 1, 2016 - Count

| Age | Years of Service | | | | | | Total | | |
|--------------|------------------|-----------|-----------|-----------|----------|----------|----------|----------|-----------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | |
| < 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 30-34 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 35-39 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| 40-44 | 4 | 2 | 7 | 8 | 0 | 0 | 0 | 0 | 21 |
| 45-49 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 5 |
| 50-54 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 5 |
| 55-59 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 60-64 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 |
| 65 + | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 12 | 16 | 13 | 12 | 3 | 0 | 1 | 0 | 57 |

Distribution By Age



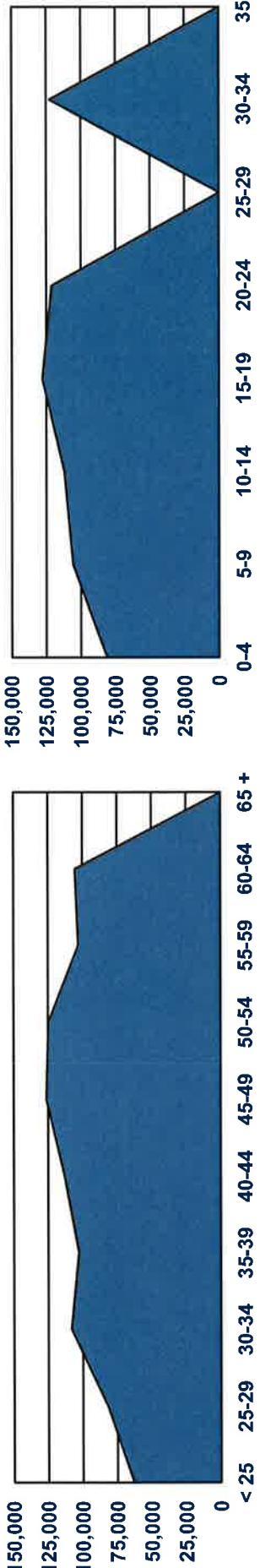
Distribution by Years of Service



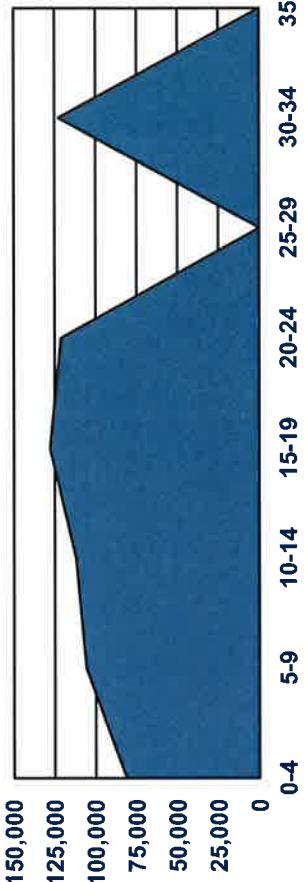
Section V - Membership Data
D. Distribution of Active Members as of July 1, 2016 - Average Pay

| Age | Years of Service | | | | | | Total | | |
|--------------|------------------|----------------|----------------|----------------|----------------|----------|----------------|----------|----------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | |
| < 25 | 63,124 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63,124 |
| 25-29 | 82,139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82,139 |
| 30-34 | 0 | 108,367 | 0 | 0 | 0 | 0 | 0 | 0 | 108,367 |
| 35-39 | 0 | 102,846 | 103,444 | 0 | 0 | 0 | 0 | 0 | 102,995 |
| 40-44 | 89,162 | 107,643 | 121,899 | 119,211 | 0 | 0 | 0 | 0 | 113,282 |
| 45-49 | 0 | 0 | 107,882 | 129,502 | 135,683 | 0 | 0 | 0 | 126,414 |
| 50-54 | 0 | 0 | 101,230 | 193,636 | 114,208 | 0 | 0 | 0 | 124,902 |
| 55-59 | 0 | 103,229 | 0 | 0 | 0 | 0 | 0 | 0 | 103,229 |
| 60-64 | 0 | 0 | 88,103 | 0 | 0 | 0 | 122,810 | 0 | 105,457 |
| 65 + | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 81,311 | 105,885 | 112,202 | 127,986 | 121,366 | 0 | 122,810 | 0 | 107,917 |

Distribution By Age



Distribution by Years of Service



Section V - Membership Data

E. Distribution of Inactive Members as of July 1, 2016

| | Age | Number | Annual Benefits |
|--|---------|--------|-----------------|
| Terminated Vested Members / Members Due Refunds | | | |
| | < 30 | 0 | \$0 |
| | 30 - 39 | 1 | 22,674 |
| | 40 - 49 | 0 | 0 |
| | 50 - 59 | 0 | 0 |
| | 60 - 64 | 0 | 0 |
| | 65 + | 0 | 0 |
| | Total | 1 | 22,674 |
| Retired Members | | | |
| | < 50 | 7 | \$344,330 |
| | 50 - 59 | 17 | 993,285 |
| | 60 - 69 | 13 | 603,149 |
| | 70 - 79 | 14 | 709,977 |
| | 80 - 89 | 6 | 214,540 |
| | 90 + | 0 | 0 |
| | Total | 57 | 2,865,281 |
| Disabled Members | | | |
| | < 50 | 1 | \$43,770 |
| | 50 - 59 | 1 | 26,247 |
| | 60 - 69 | 1 | 21,945 |
| | 70 - 79 | 0 | 0 |
| | 80 - 89 | 0 | 0 |
| | 90 + | 0 | 0 |
| | Total | 3 | 91,962 |
| Beneficiaries of Deceased Members | | | |
| | < 50 | 1 | \$6,684 |
| | 50 - 59 | 2 | 130,437 |
| | 60 - 69 | 3 | 124,782 |
| | 70 - 79 | 6 | 164,661 |
| | 80 - 89 | 1 | 13,700 |
| | 90 + | 0 | 0 |
| | Total | 13 | 440,264 |

Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the **Entry Age Normal Cost Method**. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.

The **Normal Cost** is determined by calculating the present value of future benefits for present active Members that will become payable as the result of death, disability, retirement or termination. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the **Accrued Liability**. In fact, it is calculated by adding the present value of benefits for Retired Members and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Cost contributions.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

The unfunded liability for the plan is the excess of the Accrued Liability over the assets which have been accumulated for the plan. This Unfunded Accrued Liability is amortized as a level percent. Beginning on July 1, 2005, the amortization period is 20 years; the amortization period will decrease each year until it reaches 10 years, after which point it will remain at 10 years.

The **Actuarial Value of Assets** is determined by recognizing asset gains and losses over **five** years.

Appendix B - Actuarial Assumptions

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

| | |
|----------------------------------|---|
| Interest | Current: 7.25% |
| | Prior: 7.375% |
| Salary Scale | 3.50% |
| Amortization Growth Rate | 3.50% |
| Expenses | Administrative expenses paid in the prior year, increased by 3% and rounded to the nearest \$100. |
| Healthy Mortality | RP-2000 Combined Healthy Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA. This assumption includes a margin for improvements in longevity beyond the valuation date. |
| Turnover | None. |
| Retirement | 50% in the first year eligible for Normal Retirement. 15% in each following year. 100% at age 65. For employees hired after January 1, 2007, no retirements are assumed prior to the completion of 25 years of service. |
| Disability | 11th Railroad Retirement Board Disability Rates. |
| Disabled Mortality | RP-2000 Disabled Mortality Table, Male and Female. This assumption does not include a margin for improvements in longevity beyond the valuation date. |
| Marital Status | 80% of members are assumed to be married with wives 3 years younger than husbands. |
| Cost of Living Adjustment | 1.50% |
| Worker's Compensation | 10% of Final Average Earnings. |

Appendix C - Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

| | |
|------------------------------------|---|
| Eligibility | Employed for twenty or more hours a week for more than 5 months per calendar year. |
| Employee Contributions | 8% of after tax earnings, 8.5% of after tax earnings effective July 1, 2015 and 9% of after tax earnings effective July 1, 2016. Interest is credited at 4% per annum. |
| | Refund of Employee Contributions with interest to date of termination of employment or death, unless the employee is eligible for a deferred retirement income. |
| Continuous Service | The period of continuous employment with the Police Department beginning with the first of the month following date of employment measured in years and full months. |
| Final Average Earnings | Highest average earnings received in any three full calendar years. |
| Normal Retirement Date | Earlier of age 50 or completion of 20 years of service or for employees hired after October 1, 2013, age 45 and completion of 20 years of service. For employees hired after January 1, 2007 the completion of 25 years of service is required to be eligible for retiree medical benefits. For employees hired after January 1, 2007 but before October 1, 2013 the completion of 25 years of service is required to be eligible for cost of living adjustments. |
| Normal Retirement Benefit | 2.5% of Final Average Earnings multiplied by Continuous Service. For employees hired after January 1, 2007 the benefit is capped at the lesser of 70% of base compensation in the year prior to retirement and 62.5% of Final Average Earnings. |
| Early Retirement Date | Age 45 and 10 years of Continuous Service. |
| Early Retirement Benefit | Benefit is based on Continuous Service and Final Average Earnings to actual retirement date actuarially reduced for early commencement. |
| Deferred Retirement Date | Members may continue to work beyond Normal Retirement. |
| Deferred Retirement Benefit | Benefit based on Continuous Service and Final Average Earnings to actual date of retirement. |

Appendix C - Summary of Plan Provisions

| | |
|--|---|
| Death Benefit Eligibility | Married Member (for at least one year) or with minor children. Age 25 with 1 year of Aggregate Service. |
| Death Benefit | 35% of benefit accrued to date of death. |
| Disability Retirement | Members not covered under the Long Term Disability Contract. |
| Disability Retirement Benefit | 60% of earnings at the time of disability, less Worker's Compensation. |
| Termination Benefit Eligibility | Ten years of Continuous Service. |
| Termination Benefit | Benefit accrued to date of termination with payment commencing on Normal Retirement Date. |
| Cost of Living Adjustment | One half of active salary increases. |