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March 23, 2015

PERSONAL & CONFIDENTIAL

milliman.com

Mr. Robert Thibeault
Finance Director
Town of Coventry
1670 Flat River Road
Coventry, RI 02816

Re: 2014 Experience Study – Town of Coventry Pension Plans

Dear Bob:

We are pleased to present the results of the 2014 Experience Study for the Town of Coventry pension plans:

Police Officers
Municipal Employees

The enclosed study reviews experience through June 30, 2014 and summarizes the results of the following economic and demographic experience: Consumer Price Inflation, Salary Scale, Payroll Growth Rate, Cost of Living Adjustment, Investment Return, Turnover, Retirement, Mortality, Disability, and Percent Married. The following actuarial methods are also reviewed: Asset Valuation Method (Actuarial Value), and the Actuarial Cost Method. Section II contains a discussion of the economic assumptions used in the actuarial valuation. Details regarding demographic assumptions are found in Section III. Section IV reviews the actuarial methods.

Our proposals for new assumptions are included in this report. We have also determined the estimated impact of the proposed assumptions on the funded ratio and the Actuarially Determined Contribution for each plan.

In preparing this study, we relied without audit on employee census data and financial information from July 1, 2010 through June 30, 2014, furnished by the Town of Coventry. This information includes, but is not limited to, plan provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, 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.

The calculations reported herein have been made on a basis consistent with our understanding of the plan provisions for the Town of Coventry pension plans. Furthermore, the calculations were determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

Milliman's work is prepared solely for the internal business use of the Town of Coventry. 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 of Coventry may provide a copy of Milliman's work, in its entirety, to the Town of Coventry'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 of Coventry; and (b) the Town of Coventry 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. If these results are distributed to other parties, we request that it be copied in its entirety and distributed along with a copy of the July 1, 2014 actuarial valuation reports in their entirety as well, because those documents provide background information that is important in understanding the basis for these results.

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 other purposes, 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. Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions

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Mr. Robert Thibeault
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made for this analysis. Actual experience will not conform exactly to the assumptions made for this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

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 impact the objectivity of our work.

I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I look forward to discussing this report with you. In the meantime, please call if I can be of assistance.

Respectfully submitted,



Steve A. Lemanski, FSA, FCA
Consulting Actuary



**TOWN OF COVENTRY
PENSION PLANS
2014 EXPERIENCE STUDY**

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

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This work product was prepared solely for the Town of Coventry for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**SECTION I
EXECUTIVE SUMMARY**

The following is a discussion of the key findings of the 2014 Experience Study for the Town of Coventry pension plans.

Consumer Price Inflation

Current Basis	2.75% per year.
Recommendation	Based on the history over the last 75 years and future expectations, we recommend changing to a rate of 2.70% per year. This rate will be used to build the net investment return, pension escalation, and salary scale assumptions.

Salary Scale

Current Basis	<p>A service-graded salary scale assumption, as follows:</p> <ul style="list-style-type: none">• For Police, the current assumption grades down from 9.75% to 3.75% per year with higher increases at certain years of service to reflect step and longevity increases (Note: includes 2.75% per year for inflation). Employees hired before January 1, 1994 are assumed to receive an additional 60% increase the year before retirement.• For Municipal, the current assumption grades down from 6.80% to 3.55% per year, with higher increases at certain years of service to reflect longevity increases. (Note: includes 2.75% per year for inflation).
Comment	For both Police and Municipal Employees, average annual salary increases from 2009 - 2014 were generally lower than the current basis.
Recommendation	<p>We recommend maintaining a service-based salary scale assumption, but with slightly lower rates.</p> <ul style="list-style-type: none">• For Police, the proposed assumption grades down from 9.70% to 3.50% per year with higher increases at certain years of service to reflect step and longevity increases (Note: includes 2.70% per year for inflation). Employees hired before January 1, 1994 are assumed to receive an additional 55% increase the year before

**TOWN OF COVENTRY PENSION PLANS
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**SECTION I
EXECUTIVE SUMMARY**

retirement.

- For Municipal, the proposed assumption grades down from 6.65% to 3.40% per year, with higher increases at certain years of service to reflect longevity increases. (Note: includes 2.70% per year for inflation).

Payroll Growth Rate

Current Basis	Police:	3.75% per year
	Municipal:	3.55% per year
Recommendation	Police:	3.50% per year
	Municipal:	3.40% per year

The proposed assumption is consistent with the “ultimate” proposed rate of salary increase for each plan.

Cost of Living Adjustment

Current Basis	Police:	1.50% (compounded) per year for members who retired prior to July 1, 1986. 2.50% (compounded) per year for members who retired on or after July 1, 1986 and were hired before January 1, 1994. 2.75% (non-compounded) per year for members who were hired on or after January 1, 1994.
	Municipal:	N/A

Comments Police are entitled to post-retirement benefit adjustments based on their date of hire and retirement. The assumption for post-January 1, 1994 hires should be consistent with the price inflation rate. For other members, the current assumption matches the applicable fixed rate cost of living adjustment.

Recommendation	Police:	1.50% (compounded) per year for members who retired prior to July 1, 1986. 2.50% (compounded) per year for members who retired on or after July 1, 1986 and were
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**TOWN OF COVENTRY PENSION PLANS
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**SECTION I
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hired before January 1, 1994.

2.70% (non-compounded) per year for members who were hired on or after January 1, 1994.

Municipal: N/A

Investment Return

Current Basis 7.00% per year, net of investment expenses.

Comment Based on updated capital market assumptions and your asset mix, we propose that the investment return assumption remain unchanged for both plans.

Recommendation No change.

Turnover

Current Basis No turnover assumed for Police. Moderate turnover scale assumed for Municipal.

Comment Experience for Police has been relatively on target. Turnover has been lighter than the current basis for Municipal, but with relatively little experience for analysis.

Recommendation No change.

Retirement

Current Basis Police: Employees hired prior to January 1, 1994:
50% assumed to retire when first eligible
30% assumed to retire for the next 3 years
15% assumed to retire in the years thereafter
100% assumed to retire at 30 years of service
Employees hired on or after January 1, 1994:
75% assumed to retire when first eligible

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**SECTION I
EXECUTIVE SUMMARY**

20% assumed to retire in the years thereafter
100% assumed to retire at 30 years of service

Municipal: Age based retirement assumption:

<u>Age</u>	<u>Rate</u>
55-58	3%
59	7
60-61	10
62	35
63-64	20
65	40
66-69	30
70	100

Comments Police are retiring generally earlier than assumed under the current basis. Experience indicates that Municipal employees are retiring generally later than assumed under the current basis.

Recommendation Police: For employees hired prior to January 1, 1994, change the retirement rates to 60% when first eligible, 35% in the next year, 25% for the next 2 years, 20% for the next 2 years, 15% for the next 4 years and 100% at 30 years of service. Maintain the current assumption for employees hired on or after January 1, 1994 as experience does not exist that would suggest a change in this assumption.

Municipal: Continue to use a retirement assumption that explicitly reflects assumed retirements throughout a range of ages, from age 55 to age 70 (minimum 10 years of service), but with slightly lower assumed rates at certain ages.

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Mortality

Current Basis	RP-2000 Combined Healthy Mortality Table with generational projection per Scale AA, with separate male and female tables.
Comments	Experience indicates that mortality has been generally consistent with the current assumption for both plans.
Recommendation	No change.

Disability

Current Basis	Police: 1987 Commissioner's Group D Disability Table, six month elimination period, separately for males and females. Municipal: 1987 Commissioner's Group D Disability Table, six month elimination period, separately for males and females.
Recommendation	We recommend continuation of the current assumption as credible experience does not exist that would suggest a change in this assumption.

Percent Married

Current Basis	Police: 75% of active and terminated vested members are assumed to be married at retirement, with husbands 3 years older than their spouses. Municipal: 75% of active and terminated vested members are assumed to be married at retirement, with husbands 3 years older than their spouses.
Comment	For both plans, experience has been generally consistent with the current assumptions.

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Recommendation No change.

Asset Valuation Method (Actuarial Value)

Current Basis You are using a smoothing method which phases in recognition of the difference between the actual return on market value and the expected return on market value over a five-year period at 20% per year.

Recommendation We recommend the continued use of this asset valuation method.

Actuarial Cost Method

Current Basis The current method is the Entry Age Normal Cost Method. It is used for determining the future rates of contributions needed for funding service retirements. This method is designed to provide “percentage of payroll” Normal Actuarial Costs which will remain stable as long as the average entry age of the group remains stable. It recognizes experience gains and losses immediately.

Recommendation We recommend the continued use of this funding method.

**TOWN OF COVENTRY PENSION PLANS
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**SECTION I
EXHIBIT A - CURRENT AND PROPOSED ACTUARIAL ASSUMPTIONS**

The current actuarial assumptions used in the 2014 Town of Coventry pension plans' valuations plus the proposed changes in actuarial assumptions are compared as follows:

	Current Assumption			Proposed Assumption		
Consumer Price Inflation	2.75% per year.			2.70% per year.		
Salary Scale	<u>Service</u>	<u>Police*</u>	<u>Municipal</u>	<u>Service</u>	<u>Police**</u>	<u>Municipal</u>
	1	9.75%	6.80%	1	9.70%	6.65%
	2	6.15%	6.80%	2	6.10%	6.65%
	3	13.55%	3.55%	3	13.50%	3.40%
	4	2.75%	3.55%	4	2.70%	3.40%
	5	7.75% / 3.75%	6.35%	5	7.70 / 3.70%	6.10%
	6-9	3.75%	3.55%	6-9	3.70%	3.40%
	10	7.15% / 3.75%	6.10%	10	7.10 / 3.70%	5.90%
	11-14	3.75%	3.55%	11-14	3.70%	3.40%
	15	5.15% / 3.75%	5.85%	15	5.10 / 3.70%	5.80%
	16-19	3.75%	3.55%	16-19	3.70%	3.40%
	20	3.75%	5.60%	20	3.70%	5.50%
	21-24	3.75%	3.55%	21	3.66%	3.40%
	25	3.75%	5.35%	22	3.62%	3.40%
	26-on	3.75%	3.55%	23	3.58%	3.40%
				24	3.54%	3.40%
				25	3.50%	5.20%
				26-on	3.50%	3.40%

* Employees hired prior to January 1, 1994 receive an additional 60% salary increase in the year before retirement.

** Employees hired prior to January 1, 1994 receive an additional 55% salary increase in the year before retirement.

In instances where Police salary scale entries are separated by "/" the rates are applicable to officers hired before/after January 1, 2013.

Includes 2.75% for inflation.

Includes 2.70% for inflation.

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**SECTION I
EXHIBIT A - CURRENT AND PROPOSED ACTUARIAL ASSUMPTIONS**

	Current Assumption	Proposed Assumption																											
Cost of Living Adjustment																													
Police	Pre July 1, 1986 retirees: 1.50% per year (compounded).	No change.																											
	Retirees on and after July 1, 1986 (and hired prior to January 1, 1994): 2.50% per year (compounded).	No change.																											
	For officers hired on and after January 1, 1994: 2.75% per year (non-compounded).	For officers hired on and after January 1, 1994: 2.70% per year (non-compounded).																											
Municipal	None is assumed.	None is assumed.																											
Investment Return	7.00% per year, net of investment expenses.	No change.																											
Turnover	<table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: center;"><u>Police</u></th> <th style="text-align: center;"><u>Municipal</u></th> </tr> </thead> <tbody> <tr><td>20</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">10.94%</td></tr> <tr><td>25</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">8.78%</td></tr> <tr><td>30</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">6.98%</td></tr> <tr><td>35</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">5.45%</td></tr> <tr><td>40</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">4.23%</td></tr> <tr><td>45</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">3.29%</td></tr> <tr><td>50</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">2.52%</td></tr> <tr><td>55</td><td style="text-align: center;">0.00%</td><td style="text-align: center;">1.89%</td></tr> </tbody> </table>	<u>Age</u>	<u>Police</u>	<u>Municipal</u>	20	0.00%	10.94%	25	0.00%	8.78%	30	0.00%	6.98%	35	0.00%	5.45%	40	0.00%	4.23%	45	0.00%	3.29%	50	0.00%	2.52%	55	0.00%	1.89%	No change.
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**TOWN OF COVENTRY PENSION PLANS
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**SECTION I
EXHIBIT A - CURRENT AND PROPOSED ACTUARIAL ASSUMPTIONS**

	Current Assumption	Proposed Assumption																																								
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Police	<p>Employees hired prior to January 1, 1994: 50% assumed to retire when first eligible 30% assumed to retire in the three years thereafter 15% assumed to retired in the six years thereafter 100% assumed to retire at 30 years of service</p> <p>Employees hired on or after January 1, 1994: 75% assumed to retire when first eligible 20 % assumed to retire in the years thereafter 100% assumed to retire at 30 years of service</p> <p>Employees hired on or after January 1, 2013: 75% assumed to retire at 25 years of service (no earlier than age 55) 20% assumed to retire in the years thereafter 100% assumed to retire at 30 years of service</p>	<p>Employees hired prior to January 1, 1994: 60% assumed to retire when first eligible 35% assumed to retire in the next year 25% assumed to retire in the next two years 20% assumed to retire in the next two years 15% assumed to retired in the four years thereafter 100% assumed to retire at 30 years of service</p> <p>No change.</p> <p>No change.</p>																																								
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Mortality	<p>RP-2000 Combined Healthy Mortality Table with generational projection per Scale AA with separate male and female tables</p>	No change.																																								

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**SECTION I
EXHIBIT A - CURRENT AND PROPOSED ACTUARIAL ASSUMPTIONS**

	Current Assumption	Proposed Assumption
Disability		
Police	1987 Commissioner's Group Disability Table, six month elimination period, separately for males and females.	No change.
Municipal	1987 Commissioner's Group Disability Table, six month elimination period, separately for males and females.	No change.
Percent Married		
Police	75% of active members are assumed to be married, with husbands 3 years older than their spouses.	No change.
Municipal	75% of active members are assumed to be married, with husbands 3 years older than their spouses.	No change.
Asset Valuation Method (Actuarial Value)	The total value of the plan assets is adjusted by phasing in recognition of the difference between the expected return on market value and the actual return on market value over a five-year period at 20% per year.	No change.
Actuarial Cost Method	Entry Age Normal actuarial cost method.	No change.

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**SECTION I
EXHIBIT B - ESTIMATED IMPACT OF PROPOSED ASSUMPTIONS
B-1: POLICE
(\$ millions)**

	<u>Current Assumptions</u>	<u>Proposed Assumption Changes</u>
	<u>July 1, 2014 Valuation</u>	<u>July 1, 2014 Valuation</u>
Funded Ratio*		
1. Actuarial Value of Assets at July 1, 2014	\$9.194	\$9.194
2. Actuarial Liability as of July 1, 2014	71.423	71.381
3. Unfunded Accrued Liability (UAL) as of July 1, 2014	62.228	62.187
4. Funded Ratio at July 1, 2014: (1) / (2)	12.9%	12.9%
Annual Town Cost for 2015-2016*		
1. Net Normal Cost	0.653	0.646
2. Past Service Cost (24 year amortization of UAL)	3.614	3.699
3. Interest on (1) + (2) to the end of the fiscal year	0.299	0.304
4. Total Town Cost for 2015-2016: (1) + (2) + (3)	4.566	4.649
5. Total Town Cost for 2015-2016 as a Percentage of Payroll	136.9%	139.4%
Actuarially Determined Contribution for 2015-2016	4.566	4.649

* Note: The estimated impact on the July 1, 2014 funded ratio and Actuarially Determined Contribution for 2015-2016 is for illustrative purposes only. We understand that any adopted changes in the actuarial assumptions would first be required to be included in the July 1, 2015 actuarial valuation (which develops the Actuarially Determined Contribution for 2016-2017).

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**SECTION I
EXHIBIT B - ESTIMATED IMPACT OF PROPOSED ASSUMPTIONS
B-2: MUNICIPAL
(\$ millions)**

	<u>Current Assumptions</u>	<u>Proposed Assumption Changes</u>
	<u>July 1, 2014 Valuation</u>	<u>July 1, 2014 Valuation</u>
Funded Ratio*		
1. Actuarial Value of Assets at July 1, 2014	\$6.725	\$6.725
2. Actuarial Liability as of July 1, 2014	20.895	20.630
3. Unfunded Accrued Liability (UAL) as of July 1, 2014	14.170	13.905
4. Funded Ratio at July 1, 2014: (1) / (2)	32.2%	32.6%
Annual Town Cost for 2015-2016*		
1. Net Normal Cost	0.036	0.019
2. Past Service Cost (28 year amortization of UAL)	0.761	0.759
3. Interest on (1) + (2) to the end of the fiscal year	0.056	0.055
4. Total Town Cost for 2015-2016: (1) + (2) + (3)	0.853	0.833
5. Total Town Cost for 2015-2016 as a Percentage of Payroll	15.8%	15.4%
Actuarially Determined Contribution for 2015-2016	0.853	0.833

* Note: The estimated impact on the July 1, 2014 funded ratio and Actuarially Determined Contribution for 2015-2016 is for illustrative purposes only. We understand that any adopted changes in the actuarial assumptions would first be required to be included in the July 1, 2015 actuarial valuation (which develops the Actuarially Determined Contribution for 2016-2017).

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**SECTION II
ECONOMIC ASSUMPTIONS**

A. OVERVIEW OF ECONOMIC ASSUMPTIONS

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries on selecting economic assumptions for measuring obligations under defined benefit plans. Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the Standard explicitly advises the actuary not to give undue weight to recent experience.

The Standard calls for the actuary to develop a single best estimate for each economic assumption. Each economic assumption should individually satisfy the Standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

In our opinion, the economic assumptions set forth in this report have been developed in accordance with ASOP No. 27.

The remainder of this section contains the study results for the following economic assumptions:

- Consumer Price Inflation (CPI)
- Salary Scale and Payroll Growth Rate
- Cost of Living Adjustment
- Investment Return

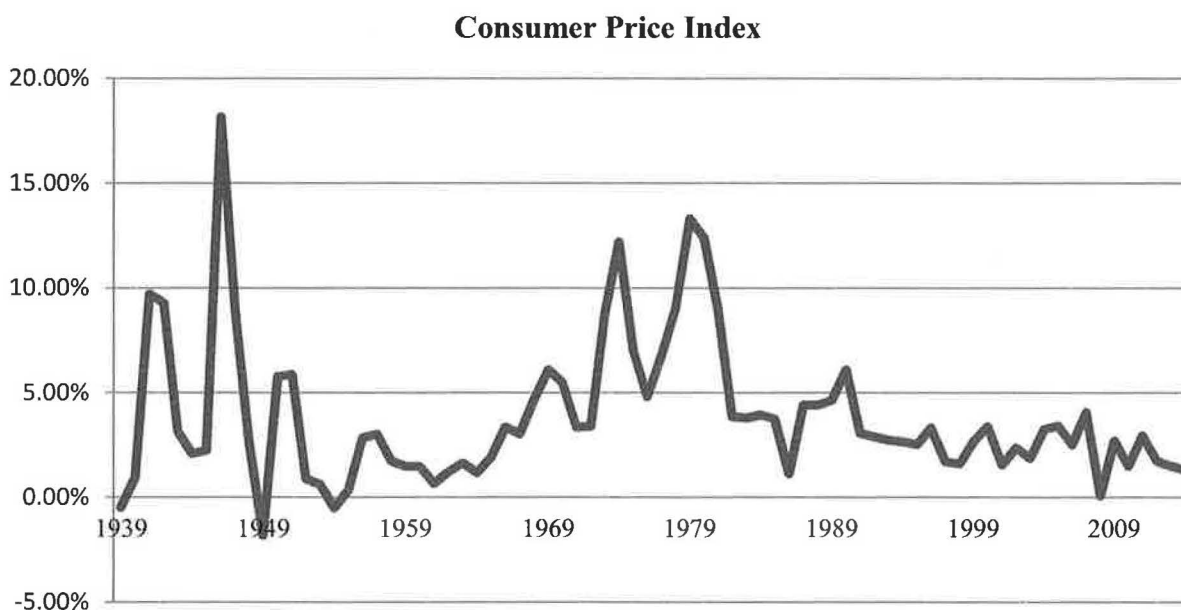
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B. CONSUMER PRICE INFLATION (CPI)

Use in the Valuation: Future price inflation has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return, cost of living adjustment, and salary scale.

The current assumption for price inflation is 2.75% per year.



Historical Perspective: We have used certain published economic statistics that have been accumulated on a monthly basis over the last 75 years. The data for price inflation is based on the Consumer Price Index, US City Average, All Urban Consumers (CPI). The data for periods ending in December of each year is shown graphically above.

There are numerous ways to review this data. The table below shows the compounded annual price inflation rate for various 10 year periods and for longer periods ended in December 2014. Standard Deviation is a measure of the extent to which inflation varied from the Mean, or average, for the period.

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B. CONSUMER PRICE INFLATION (CPI)

Period	Mean	Standard Deviation
2004-2014	2.18%	1.11%
1994-2004	2.43%	0.69%
1984-1994	3.58%	1.31%
1974-1984	7.34%	3.31%
1964-1974	5.20%	2.97%
2004-2014	2.18%	1.11%
1994-2014	2.31%	0.93%
1984-2014	2.73%	1.23%
1974-2014	3.86%	2.82%
1964-2014	4.13%	2.90%
75 years	3.84%	3.41%
25 years	2.54%	1.13%

Many economists forecast that future price inflation will be lower than the current assumption of 2.75%, but they may be looking at shorter periods than are appropriate for a pension valuation. To find an economic forecast with a long enough time frame to suit our purpose, we looked at the expected increase in the CPI by the Office of the Chief Actuary for the Social Security Administration. In the 2014 Trustees Report, the projected average annual increase in the CPI over the next 30 years under the intermediate cost assumptions was 2.7%. The reasonable range was stated as 2.0% to 3.4%.

Recommendation: Based on the history over the last 75 years, and future expectations, we recommend changing the current long-term assumed price inflation rate to 2.70%. This rate will be used to build the net investment return, pension escalation, and salary scale assumptions.

Consumer Price Inflation	
Current Assumption	2.75%
Recommended Assumption	2.70%

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C. SALARY SCALE AND PAYROLL GROWTH RATE

Current Assumption: Overall pay increases (that is, both real wage growth and pay increases related to merit, longevity, promotions, etc.) are assumed to vary by service per the following table:

<u>Service</u>	<u>Police*</u>	<u>Municipal</u>
1	9.75%	6.80%
2	6.15%	6.80%
3	13.55%	3.55%
4	2.75%	3.55%
5	7.75%/3.75%	6.35%
6-9	3.75%	3.55%
10	7.15%/3.75%	6.10%
11-14	3.75%	3.55%
15	5.15%/3.75%	5.85%
16-19	3.75%	3.55%
20	3.75%	5.60%
21-24	3.75%	3.55%
25	3.75%	5.35%
26+	3.75%	3.55%

* Employees hired prior to January 1, 1994 receive an additional 60% salary increase in the year before retirement.

In instances where Police salary scale entries are separated by “/” the rates are applicable to officers hired before / after January 1, 2013. The current payroll growth rate assumption is 3.75% and 3.55% per year for the Police and Municipal plans, respectively.

Study Design: We looked at the impact on annual salary increases for each individual in our study. The results indicate the combined impact of general wage growth, step increases, step longevity increases, as well as promotions.

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Results: For both groups, the salary schedules incorporated into Collective Bargaining Agreements have step and longevity increases that reflect years of service.

Salary Scale Recommendation: Based on our judgment, we believe that the salary scale rates should generally be slightly reduced relative to the current assumption, with an “ultimate” rate of salary increase of 3.40% for Municipal and 3.50% for Police (an estimate of general wage growth for each plan). In instances where Police salary scale entries are separated by “/” the rates are applicable to officers hired before / after January 1, 2013. Our recommended assumption is shown below:

<u>Service</u>	<u>Police*</u>	<u>Municipal</u>
1	9.70%	6.65%
2	6.10%	6.65%
3	13.50%	3.40%
4	2.70%	3.40%
5	7.70 / 3.70%	6.10%
6-9	3.70%	3.40%
10	7.10 / 3.70%	5.90%
11-14	3.70%	3.40%
15	5.10 / 3.70%	5.80%
16-19	3.70%	3.40%
20	3.70%	5.50%
21	3.66%	3.40%
22	3.62%	3.40%
23	3.58%	3.40%
24	3.54%	3.40%
25	3.50%	5.20%
26+	3.50%	3.40%

Note: The rates shown above for both plans include 2.70% for inflation.

* For the Police plan, final average earnings for members hired prior to January 1, 1994 include the impact of any applicable additional pensionable compensation received upon retirement. For such members, we also analyzed data provided to us by the Town with respect to the members who retired through June 30, 2014. For each retiree, we calculated the percentage increase in final average earnings due to the impact of additional pensionable compensation paid in the final year. We then analyzed the results, calculating the mean and median percentage increase.

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**Impact of Additional Final Year Salary
Increase on Retirement Benefits**

Number of new Retirees since last experience study	4
Mean % Increase	47%
Median % Increase	49%
Number of Retirees	26
Mean % Increase	59%
Median % Increase	61%

Final Year Additional Salary Increase Recommendation: We recommend that the final year additional salary increase assumption be changed to 55% to better reflect plan experience.

Payroll Growth Rate Recommendation: We recommend that the payroll growth rate be reduced to 3.40% for Municipal and 3.50% for Police. These rates are consistent with the “ultimate” rates of salary increase for the two plans.

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D. COST OF LIVING ADJUSTMENT (COLA)

Use in the Valuation: Retired Police members receive annual benefit adjustments based on their dates of hire and retirement:

Retirements	Current COLA Assumption
Prior to July 1, 1986	1.50% (compounded)
On or after July 1, 1986 (and hired before January 1, 1994)	2.50% (compounded)
Officers hired on or after January 1, 1994	2.75% (non-compounded)

Recommendation: For officers hired on or after January 1, 1994, we recommend changing the COLA assumption to 2.70%, to be consistent with the 2.70% price inflation assumption. For the other groups, the COLA is a fixed percentage increase and the current assumptions are equal to the fixed percentages.

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E. INVESTMENT RETURN

Current Assumption: 7.00% (net of investment-related administrative expenses).

Recommendation: No change.

Basis for Recommendation: Based on the following analysis, we have developed an assumption for the long-term annualized rate of return on Plan assets, net of investment-related fees.

Investment Return	
Current Assumption	7.00%
Recommended Assumption	7.00%

The investment return assumption is one of the primary determinants in the allocation of the expected cost of the Fund's benefits, providing a discount of the estimated future benefit payments to reflect the time value of money. The valuation investment return assumption should represent the expected long-term rate of return on the actuarial value of assets, considering the Fund's asset allocation policy, expected long-term real rates of return on specific asset classes, the underlying inflation rate and investment-related expenses.

ASOP No. 27 provides guidance to actuaries on selecting assumptions for measuring obligations under defined benefit pension plans. Because the future cannot be accurately predicted, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a combination of past experience, future expectations, and professional judgment. The actuary should consider a number of factors including the purpose and nature of the measurement and appropriate recent and long-term historical economic data. However, ASOP No. 27 explicitly advises the actuary not to give undue weight to recent experience.

ASOP No. 27 calls for the actuary to develop a single best estimate for each economic assumption. Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

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The Fund's Investment Policy

The Fund's long-term rate of return on its investments will be mostly determined by its allocation to various asset classes. According to Addendum A in the Plan's 2014 Statement of Investment Policy, Objectives, and Guidelines, the target asset allocation is 24.7% U.S. Core Fixed Income, 15.9% U.S. Large Cap Equity, 11.4% Non-U.S. Developed Equity, 9.0% U.S. Small Cap Equity, 6.0% Emerging Markets Equity, 5.0% U.S. Mid Cap Growth Equity, 5.0% U.S. Mid Cap Value Equity, 5.0% High Yield Bonds, 5.0% Emerging Markets Bonds, 3.0% U.S. REITs, 2.5% Commodities, 2.5% Global Hedge Funds, and 2.5% Global Tactical Asset Allocation (55% Equity / 45% Fixed Income).

We use capital asset pricing theory to develop expected returns for asset classes. The theory holds that the expected return for an asset class is based on its contribution to the risk of the total market portfolio containing all assets. Assets that bring high risk to the market portfolio have higher expected returns than assets that bring low risk. Risk is measured by covariance. The level of expected return associated with the amount of risk is calibrated by the expected returns developed below for U.S. large cap equity and U.S. aggregate fixed income.

U.S. Large Cap Equity

We use the Dividend Discount Model to forecast the long-term return on U.S. large cap equity. According to this model, the expected annualized return on the equity market is the sum of long-term inflation, the current dividend yield (based on next year's expected dividend), and the expected long-term real growth rate in dividends.

Our long-term assumption for the annualized rate of inflation is 2.70%. This is based on the long-term inflation assumption used by the Social Security Trustees in their 2014 Report.

We assume that, over the long run, the growth rate in real earnings and dividends per share will track the rate of productivity growth in the economy. Our assumption for long-term productivity growth is 1.70%. This matches the long-term assumption for productivity used by the Social Security Trustees in their 2014 Report. This is also very close to the growth rate in dividends per share since 1950. Over this same time period, the average dividend payout ratio was 45%. Applying the 45% payout ratio to current earnings produces a dividend yield of 2.35%. Therefore, the current dividend yield based

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on next year's expected dividend is 2.39% ($2.35\% \times 1.0170 = 2.39\%$). Adding the dividend growth rate to the yield gives us an expected real return of 4.09% ($2.39\% + 1.70\% = 4.09\%$). Finally, we add (using geometric addition) expected inflation of 2.70% per year to adjust the real return to a nominal return. This leads to the expected annualized return for U.S. large cap equity of 6.90%.

$$(1 + 4.09\%) \times (1 + 2.70\%) - 1 = 6.90\%$$

U.S. Aggregate Fixed Income

The December 2014 issue of the *Blue Chip Financial Forecasts* includes forecasts from economists for key interest rates over each of the next ten years. These include yields on Treasury securities of different maturities, corporate bonds, and mortgages. Based on historical relationships between the yield on the Barclays Aggregate Bond Index and these key rates, we estimate the path for the yield of the Index over the next ten years. We calculate total returns each year by adding the expected income return and the capital gain or loss due to changes in yield. Beyond ten years, we assume that the yield on the U.S. 10-Year Treasury bond will closely track nominal GDP while the yields on other fixed income assets will move in lockstep with the 10-Year Treasury bond. Based on the Social Security Trustees 2014 Report, we assume that real GDP will grow at 2.20% per year and, adding inflation of 2.70%, nominal GDP will grow at 4.90% per year.

The yield to maturity of the Barclays Aggregate Bond Index was 2.25% at the end of December 2014. Applying this process leads to an expected yield of 5.21% in 5 years and 5.64% for periods after 10 years. The annualized total return over the next 75 years is estimated to be 5.22%.

Asset Classes in the Fund's Portfolio

The expected returns for the portfolio's asset classes are shown in the tables below for the current blended benchmark asset mix. The expected returns are based on the capital asset pricing model calibrated to the expected returns developed above for U.S. large cap equity and U.S. aggregate fixed income. We show both the expected annualized rate of return and the expected arithmetic average return for each asset class and the total portfolio. The expected arithmetic average return for each asset class is a necessary input to determine the expected annualized return on the total portfolio. The expected arithmetic average return is the best estimate of the return in any single year, and is always higher than the expected annualized return. The annualized return over a multiple-year period is less than the arithmetic average return due to volatility and the

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process of compounding. The expected annualized rate of return is based on a 75-year horizon. We also show the expected standard deviation of annual returns for each asset class. The standard deviations and the correlations between each pair of assets (not shown) are estimated based on actual returns over the last 45 years (or longest time period available).

Current Blended Benchmark:

Asset Class	Benchmark Weight	Expected 75-Year Annualized Return	Expected Arithmetic Average Annual Return	Expected Annual Standard Deviation
U.S. Aggregate Fixed Income	24.7%	5.22%	5.33%	4.68%
U.S. Large Cap Equity	15.9%	6.90%	8.15%	16.65%
Non-U.S. Developed Equity	11.4%	7.48%	9.14%	19.40%
U.S. Small Cap Equity	9.0%	7.42%	9.42%	21.35%
Emerging Markets Equity	6.0%	8.02%	11.43%	28.45%
U.S. Mid Cap Growth Equity	5.0%	7.39%	9.79%	23.53%
U.S. Mid Cap Value Equity	5.0%	6.83%	8.33%	18.34%
High Yield Bonds	5.0%	7.17%	7.65%	10.28%
Emerging Markets Bonds	5.0%	7.21%	8.28%	15.41%
U.S. REITs	3.0%	6.31%	8.17%	20.48%
N. American Nat. Res. Equity	2.5%	7.13%	8.46%	17.26%
Commodities	2.5%	4.68%	6.22%	18.40%
Global Hedge Funds	2.5%	4.75%	5.06%	8.09%
Global Tactical (55 Eq/45 Fixed)	2.5%	6.81%	7.26%	9.86%
Total Portfolio	100%	7.15%	7.81%	11.98%*

* The derivation of the portfolio's annualized rate of return and standard deviation are complicated and cannot be calculated by what is provided in the above table.

Under the current benchmark asset mix, our best estimate assumption for the long-term annualized rate of return on the Fund's portfolio is 7.15% before investment management

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fees. Our best estimate for the long-term arithmetic average return is 7.81% before investment management fees.

Since the Fund's assets accumulate at the long-term annualized rate of return, this is the expected rate of return that should be used as the basis for selecting the investment return assumption.

Active Management and Investment Management Fees

Most funds pay considerable fees to active investment managers. If active management fails to outperform an index fund by at least the amount of the difference between active management fees and index fund fees, the Fund always has the option to use index funds. So, over the long run, we would expect the Fund's long-term rate of return, net of fees, to be the same or higher than that which could be earned using index funds. For a Fund this size, index fees are estimated to be about 15 basis points, or 0.15%.

Under the current benchmark asset mix, our best estimate assumption for the long-term annualized rate of return on the Fund's policy portfolio is 7.00% (7.15% - 0.15%) after reflecting active management and active management fees. Our best estimate assumption for the long-term arithmetic average return on the Fund's policy portfolio is 7.66% after reflecting investment management fees.

Recommendation: Based on the ASOP No. 27 guidelines, we conclude that a reasonable assumption for the annualized rate of return over the next 75 years, less investment-related expenses, is 7.00%.

Investment Return	
Current Assumption	7.00%
Recommended Assumption	7.00%

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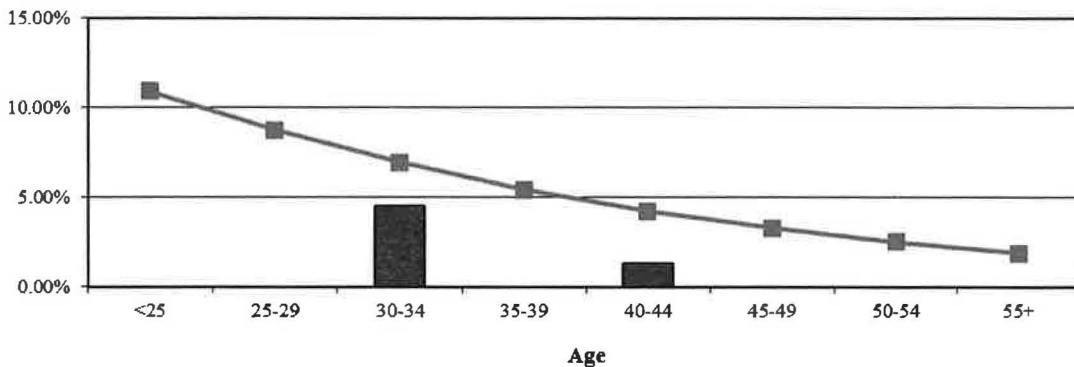
A. TURNOVER

Current Assumption: Age-graded rates for Municipal members per the following table; no turnover is assumed for Police members:

Rates of Turnover		
Age	Police	Municipal
20	0%	10.94%
25	0%	8.78%
30	0%	6.98%
35	0%	5.45%
40	0%	4.23%
45	0%	3.29%
50	0%	2.52%
55+	0%	1.89%

Results: We analyzed the data for 2010 through 2014 by age for each individual in our study. We combined the experience into 5-year age groups (i.e. ages 25-29, 30-34, etc.) and then smoothed the raw experience data to develop the proposed turnover assumption. Any turnover experience occurring at central ages of 55 and above was considered to be an “outlier” and was not used for purposes of developing the proposed turnover assumption. Actual experience is shown in blue and the results predicted by the current assumptions are shown in green.

Municipal



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For the Police plan, there was very light turnover the period, which is reasonably consistent with our assumption of no turnover.

Recommended Assumption: Based on our judgment, the current Municipal age-graded rates are reasonable. During economic downturns, turnover experience tends to be lighter than expected. We recommend the continued use of the current assumptions for both plans.

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B. RETIREMENT

Current Assumption: Rates per the following tables vary by service for Police and age for Municipal:

Rates of Retirement - Police

For participants hired before January 1, 1994

<u>Service</u>	<u>Rate</u>
20	50%
21-23	30
24-29	15
30	100

**For participants hired on and after January 1, 1994
and before January 1, 2013**

<u>Service</u>	<u>Rate</u>
23	75%
24-29	20
30	100

For participants hired on or after January 1, 2013

<u>Service</u>	<u>Rate</u>
25	75%
26-29	20
30	100

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Rates of Retirement - Municipal

<u>Age</u>	<u>Rate</u>
55-58	3%
59	7
60-61	10
62	35
63-64	20
65	40
66-69	30
70	100

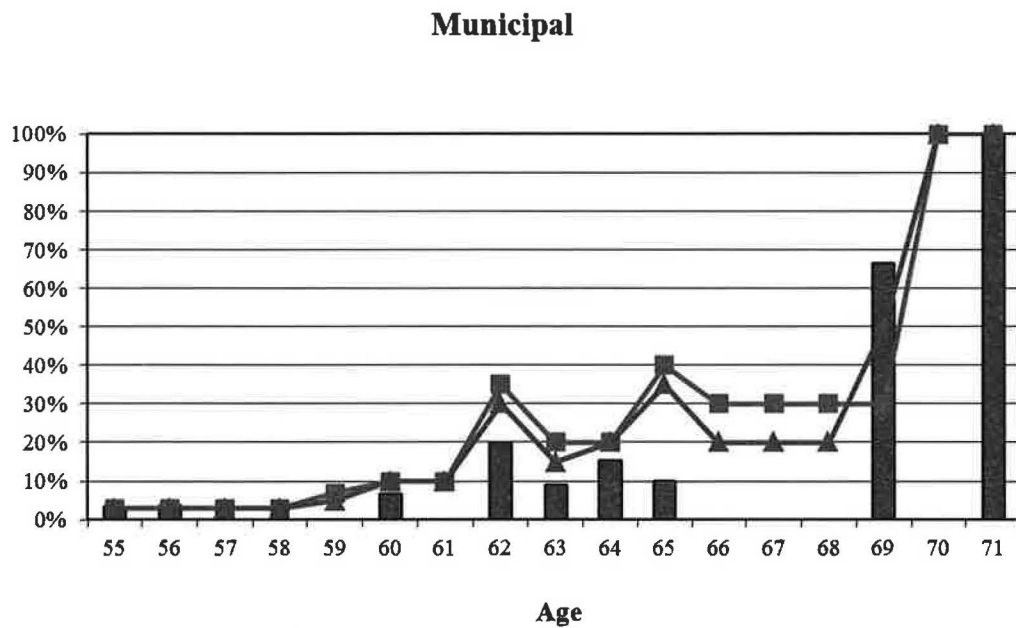
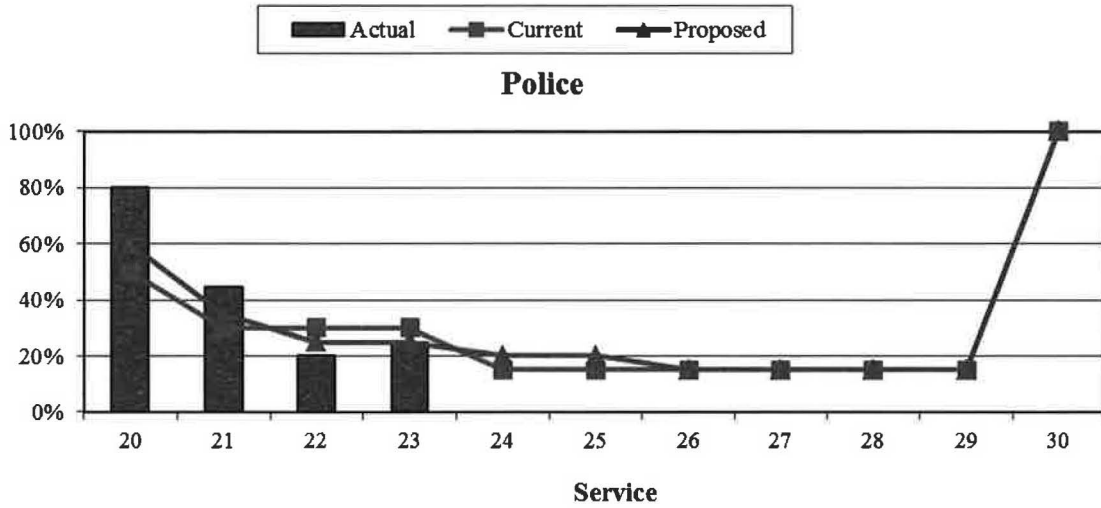
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Study Design: We analyzed the data for 2010 through 2014 by age for each individual in our study. We smoothed the raw experience data to develop the proposed retirement assumption for each plan. Each graph below shows the results by age group. Actual experience is shown in blue. The results predicted by the current assumptions are shown in green, and the results predicted by the proposed assumptions are shown in red. Please note that the Police plan only shows participants hired before January 1, 1994 as there have not been any retirements for participants hired on or after January 1, 1994.

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Note: For Police, 100% of members eligible for retirement are assumed to retire at 30 years of service. For Municipal, 100% of members eligible for retirement are assumed to retire at age 70.

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Results and Recommended Assumption:

The current service-related (Police) and age-related (Municipal) rate structures are still appropriate, but the assumed rates should be generally increased for Police participants hired before January 1, 1994. For Municipal, the assumed rates at certain ages should be modified to better reflect anticipated experience. The recommended rates are shown below:

Rates of Retirement - Police

For participants hired before January 1, 1994

<u>Service</u>	<u>Rate</u>
20	60%
21	35
22-23	25
24-25	20
26-29	15
30	100

**For participants hired on and after January 1, 1994
and before January 1, 2013**

<u>Service</u>	<u>Rate</u>
23	75%
24-29	20
30	100

For participants hired on or after January 1, 2013

<u>Service</u>	<u>Rate</u>
25	75%
26-29	20
30	100

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Rates of Retirement - Municipal

<u>Age</u>	<u>Rate</u>
55-58	3%
59	5
60-61	10
62	30
63	15
64	20
65	35
66-68	20
69	50
70	100

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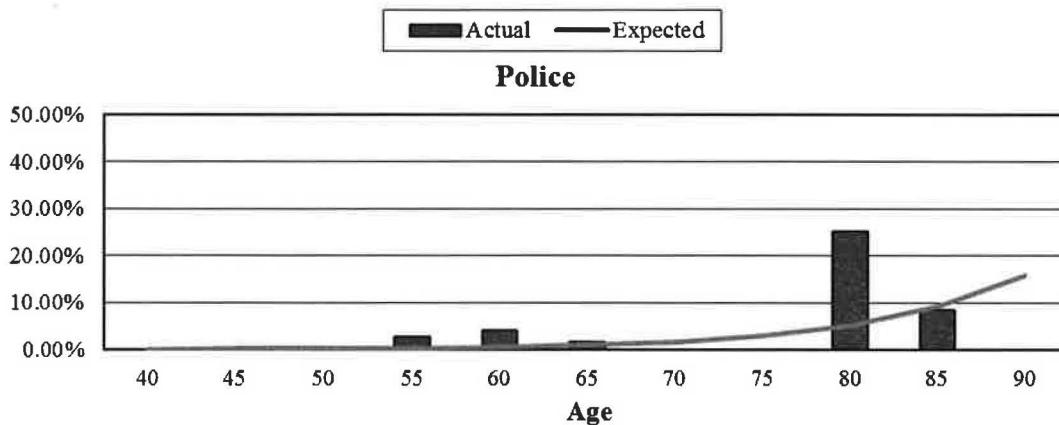
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C. MORTALITY

Current Assumption: The RP-2000 Combined Healthy Mortality Table with generational projection with Scale AA, with separate male and female tables.

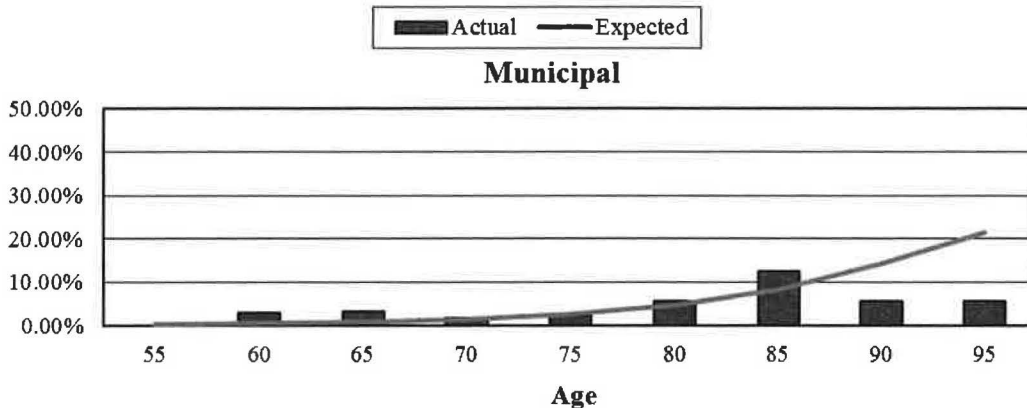
Study Design: We looked at the rates of mortality among retirees and beneficiaries.

Results: The graphs below show the actual rate of deaths during the study period along with the rate of deaths predicted by the current mortality table. Please note that all graphs show the rates of actual and expected deaths, not the number of deaths. Actual experience is shown in blue; the results predicted by the current assumptions are shown in green. The results show that the current Police and Municipal assumptions are generally reasonable.



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Recommended Assumption: The plan’s population is not large enough to generate full credible mortality experience. As the current mortality assumption reflects a standard published table, we recommend that the mortality assumption remain the RP-2000 Combined Healthy Mortality Table with generational projection per Scale AA.

We note that the new RP-2014 Mortality Tables were published by the Society of Actuaries (SOA) in October 2014, subsequent to the June 30, 2014 ending date for analyzing plan experience for purposes of this study. However, as part of this report, we are providing you with some feedback and perspective regarding the RP-2014 Mortality Tables.

It is important to note that the main reason for the updated tables is that the statutory mortality tables for private sector pensions plans are required to be reviewed by the Secretary of the Treasury at least every 10 years. The statutory tables are one of the underlying assumptions in actuarial funding valuations for private sector plans, for purposes of determining the annual minimum required employer contribution to those plans.

In February 2014, the proposed tables were issued in Exposure Draft form, and comments were solicited from the actuarial community, as well as from plan sponsors. To say that the proposed tables were controversial is an understatement. A number of commenters made note of the mortality study’s own acknowledgement that the data validation process “resulted in the exclusion of an unusually large percentage of the data initially submitted for the study.” Nearly 70% of the data collected for the study was excluded from the analysis. And, most importantly for public sector plan sponsors such

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as the Town of Coventry, absolutely no public sector data was included in the final analysis.

We accept and don't dispute that life expectancy has increased over the years. However, given that many public sector plans (including the Town of Coventry's plans) currently use some version of the RP-2000 Mortality Table as the valuation mortality assumption basis and that the RP-2014 Mortality Tables report itself acknowledges that public sector experience differed significantly from private sector experience, we believe that more analysis and attention is needed with respect to both collecting public sector mortality experience data, and also to developing appropriate mortality rates for public sector plans.

Given the feedback that the SOA received on the Exposure Draft, they appear to have acknowledged the above concerns regarding public sector plans, noting that "the Committee recommends that the SOA initiate a separate study of public sector mortality plan experience, with the expectation that the study results would include separate tables for (1) public safety, (2) teachers and (3) other public entities."

In the meantime, we believe that the current mortality assumptions (RP-2000, including projection of future mortality improvement) continue to be appropriate and reasonable for the Town of Coventry's pension plans.

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D. DISABILITY

Current Assumption: 1987 Commissioner's Group D Disability Table with a six month elimination period for both plans. Separate tables for males and females.

Recommendation: We recommend continuation of the current assumption for both plans as credible experience does not exist that would suggest a change in this assumption.

E. PERCENT MARRIED

Current Assumption: It is assumed that 75% of active members are married at retirement for both the Police and Municipal plans. Husbands are assumed to be 3 years older than their spouses.

Recommendation: We recommend no change in the current assumption, as experience has been generally consistent with the current basis.

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**SECTION IV
ACTUARIAL COST METHODS**

A. ASSET VALUATION METHOD (ACTUARIAL VALUE)

Current Method: You are using a smoothing method which phases in recognition of the difference between the actual return on market value and the expected return on market value over a five-year period at 20% per year.

Recommendation: We recommend the continued use of this asset valuation method. It is a widely-used method for public sector pension plans and provides an excellent degree of smoothing of investment gains and losses.

B. ACTUARIAL COST METHOD

Current Method: The current method is the Entry Age Normal Method. It is used for determining the future rates of contributions needed for funding benefits. This method is designed to provide “percentage of payroll” Normal Actuarial Costs which will remain stable as long as the average entry age of the group remains stable. It recognizes experience gains and losses immediately.

Recommendation: We recommend the continued use of this actuarial cost method. It is the most commonly used method for public sector pension plans and is the required cost method for financial reporting purposes under GASB 67/68.

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**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

POLICE

This exhibit summarizes the major provisions of the Coventry Municipal Police Officers Retirement 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	Full-time police officers that have received his/her appointment.
Member Contributions	Members hired on or after January 1, 2013 contribute 12% of pensionable earnings. Members hired on or after January 1, 1994 contribute 9% of pensionable earnings. Members hired before January 1, 1994 contribute 8% of pensionable earnings. Interest is credited at 5% per year..
Normal Form of Benefit	100% Joint & Survivor Annuity with Modified Cash Refund. Optional forms of benefit are available on an actuarially equivalent basis.
Vesting	25% after 4 years of service, increasing 5% for each of the next 5 years, then increasing 10% for each of the next 5 years to 100% after 15 years. Members are 100% vested at their Early Retirement Date, Normal Retirement Date, or Disability Retirement Date.
Normal Retirement	Officers who received their appointments prior to January 1, 1994: 20 years of service. Officers who received their appointments after January 1, 1994, but prior to January 1, 2013: 23 years of service. Officers who received their appointments on or after January 1, 2013: 25 years of service, but no earlier than age 55.

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2014 EXPERIENCE STUDY**

**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

POLICE

Amount: 50% of Compensation. For members hired before January 1, 2013, Compensation is the final 12 months of pensionable earnings. For members hired after January 1, 2013, Compensation is the final five years' average pensionable earnings.

Late Retirement

If a Participant continues to work for the Employer after his Normal Retirement Date, his Late Retirement Date shall be the earliest first day of the month on or after he ceases to be an employee.

If an officer employed before January 1, 1994 chooses to work beyond Normal Retirement his benefit shall be increased by 2% of 1/12th of his compensation for each year worked after 20 years up to a maximum of 25 years of service.

If an officer employed on or after January 1, 1994 chooses to work beyond Normal Retirement his benefit shall be increased by 1% of 1/12th of his compensation for each year worked after 25 years up to a maximum of 30 years of service.

Disability Retirement

Eligibility: Injured in the line of duty and unable to return to work within 2 years.

Immediate benefit equal to 66 2/3% of accrued benefit, payable until the member's Normal Retirement Date.

Pre-Retirement Survivor

If the member has reached Normal Retirement Date – 100% of the benefit that would have been payable as if he/she had retired on the date of death.

Pre-Retirement Death Benefit

Return of member contributions with interest.

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

POLICE

Cost of Living

1 ½% (compounded) for officers retired prior to July 1, 1986.

2 ½% (compounded) for officers retired after July 1, 1986 (and hired prior to January 1, 1994).

For officers hired on or after January 1, 1994, there will be an annual non-compounded cost-of-living adjustment (COLA) equal to the greater of (a) 1.50%, or (b) the Consumer Price Index (CPI-W) as published by the Bureau of Labor Statistics (BLS).

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

MUNICIPAL

This exhibit summarizes the major provisions of the Coventry Municipal Employees Retirement 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	<p>Municipal employees working in non-uniform classifications.</p> <p>Eligible members participate on the first day of the month following date of hire.</p> <p>All employees hired after November 21, 2013 shall participate in a defined contribution plan, and will not participate in the defined benefit plan.</p>
Average Compensation	<p>The average of total pay received for the five consecutive years out of the ten latest years which gives the highest average.</p>
Member Contributions	<p>All active participants contribute 8% of compensation (effective October 1, 2013), 9% of compensation (effective July 1, 2014) and 10% of compensation (effective July 1, 2015). Interest is credited at 5% per annum.</p>
Normal Form of Benefit	<p>Life Annuity with Modified Cash Refund. Optional forms of benefit are available on an actuarially equivalent basis.</p>
Vesting	<p>40% after 4 years of service, increasing 5% for each of the next 2 years, then increasing 10% for each of the next 5 years to 100% after 11 years. Members are 100% vested at their Early Retirement Date, Normal Retirement Date, or Disability Retirement Date.</p>

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

MUNICIPAL

Normal Retirement	Eligibility: Age 62. Amount: 2% of Average Compensation per year of service.
Early Retirement	Eligibility: Age 55 with 10 years of vesting service. Benefit: Accrued benefit reduced by 6 2/3% for each of the first 5 years and 3 1/3% for each of the next 2 years by which the member's Early Retirement Date precedes Normal Retirement Date.
Late Retirement	Eligibility: any age beyond 62. Benefit: The greater of (a) the accrued benefit as of the member's Late Retirement Date or (b) the accrued benefit as of the member's Normal Retirement Date increased actuarially.
Disability Retirement	Eligibility: 10 years of service. Immediate benefit equal to 25% of Average Compensation, payable until the member's Normal Retirement Date. Deferred benefit equal to the accrued benefit, starting on the member's Normal Retirement Date.
Pre-Retirement Survivor	If the member is vested and is married at the time of death, the surviving spouse will receive a benefit equal to 50% of the benefit that would have been payable had the member terminated immediately before death, elected to retire at their earliest retirement eligibility or date of death if later, and elected a 50% joint and survivor annuity. The surviving spouse's benefit is payable starting on the date that would have been the member's earliest

**TOWN OF COVENTRY PENSION PLANS
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**APPENDIX A
SUMMARY OF PLAN PROVISIONS**

MUNICIPAL

retirement date.

Pre-Retirement Death Benefit Return of member contributions with interest.

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

POLICE & MUNICIPAL

The actuarial funding method used in the cost calculations is the *Entry Age Normal Cost Method*. Recommended annual contributions, until the Accrued Liability is completely funded, 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 the 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 been 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 *Actuarial Value of Assets* is determined by recognizing market gains or losses over a five year period.

The *Unfunded Accrued Liability* is equal to the Accrued Liability less the Actuarial Value of Assets. The Unfunded Accrued Liability for the Police plan is amortized over a 26 year period starting on July 1, 2012. The Municipal plan Unfunded Accrued Liability is amortized over a 30 year period starting on July 1, 2012. The amortization payment is calculated such that it remains a level percentage of payroll.

**TOWN OF COVENTRY PENSION PLANS
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

POLICE

Investment Return	7.00%
Expenses	Prior year's actual administrative expenses increased by 3% and rounded to the nearest \$100.
Payroll Growth Rate	3.75%

Salary Increases	<i>Hired Pre</i>	<i>Hired Post</i>
	<i>1/1/2013</i>	<i>12/31/2012</i>
	<i>Rate</i>	<i>Rate</i>
<i>Service</i>	<i>Rate</i>	<i>Rate</i>
1	9.75%	9.75%
2	6.15	6.15
3	13.55	13.55
4	2.75	2.75
5	7.75	3.75
6-9	3.75	3.75
10	7.15	3.75
11-14	3.75	3.75
15	5.15	3.75
16-19	3.75	3.75
20	3.75	3.75
21-24	3.75	3.75
25	3.75	3.75
26-on	3.75	3.75

Employees hired prior to 1994 receive an additional 60% salary increase the year before retirement.

Mortality RP-2000 Combined Healthy Mortality Table with generational projection per Scale AA, separately for males and females.

Percent Married 75% of active and terminated vested members are assumed to be married, with husbands assumed to be 3 years older than their wives.

Withdrawal None.

**TOWN OF COVENTRY PENSION PLANS
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

POLICE

Disability 1987 Commissioner's Group Disability Table, six month elimination period, separately for males and females:

<i>Age</i>	<i>Male</i>	<i>Female</i>
22	0.0800%	0.1000%
27	0.0890	0.1157
32	0.1050	0.1554
37	0.1370	0.2315
42	0.2020	0.3050
47	0.3560	0.4628
52	0.6620	0.7282
57	1.1870	1.0683
62	1.6710	1.2532

Retirement Active members are assumed to retire based on the following rates:

50% of employees hired prior to 1994 are assumed to retire when first eligible. 30% are assumed to retire in the three years thereafter. 15% are assumed to retire in the six years thereafter. 100% of employees are assumed to retire at 30 years of service.

75% of employees hired after 1994 are assumed to retire when first eligible. 20% are assumed to retire in the years thereafter. 100% of employees are assumed to retire at 30 years of service.

Cost of Living 1 ½% (compounded) for officers retired prior to July 1, 1986.

2 ½% (compounded) for officers retired after July 1, 1986 (and hired prior to January 1, 1994).

2 ¾% (non-compounded) for officers hired on or after January 1, 1994.

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

MUNICIPAL

Investment Return	7.00%																														
Expenses	Prior year's actual administrative expenses increased by 3% and rounded to the nearest \$100.																														
Payroll Growth Rate	3.55%																														
Salary Increases	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><i>Age</i></th> <th style="text-align: center;"><i>Rate</i></th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1</td><td style="text-align: center;">6.80%</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">6.80</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">6.35</td></tr> <tr><td style="text-align: center;">6-9</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">6.10</td></tr> <tr><td style="text-align: center;">11-14</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">15</td><td style="text-align: center;">5.85</td></tr> <tr><td style="text-align: center;">16-19</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">20</td><td style="text-align: center;">5.60</td></tr> <tr><td style="text-align: center;">21-24</td><td style="text-align: center;">3.55</td></tr> <tr><td style="text-align: center;">25</td><td style="text-align: center;">5.35</td></tr> <tr><td style="text-align: center;">26 on</td><td style="text-align: center;">3.55</td></tr> </tbody> </table>	<i>Age</i>	<i>Rate</i>	1	6.80%	2	6.80	3	3.55	4	3.55	5	6.35	6-9	3.55	10	6.10	11-14	3.55	15	5.85	16-19	3.55	20	5.60	21-24	3.55	25	5.35	26 on	3.55
<i>Age</i>	<i>Rate</i>																														
1	6.80%																														
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26 on	3.55																														

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

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Mortality RP-2000 Combined Healthy Mortality Table with generational projection per Scale AA, separately for males and females.

Percent Married 75% of active and terminated vested members are assumed to be married, with husbands assumed to be 3 years older than their wives.

Withdrawal 2003 SOA Small Plan Age Table multiplied by .45:

<u>Age</u>	<u>Rate</u>
20	10.94%
25	8.78
30	6.98
35	5.45
40	4.23
45	3.29
50	2.52
55	1.89

Disability 1987 Commissioner's Group Disability Table, six month elimination period, separately for males and females:

<u>Age</u>	<u>Male</u>	<u>Female</u>
22	0.0800%	0.1000%
27	0.0890	0.1157
32	0.1050	0.1554
37	0.1370	0.2315
42	0.2020	0.3050
47	0.3560	0.4628
52	0.6620	0.7282

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

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ACTUARIAL ASSUMPTIONS AND METHODS**

MUNICIPAL

57	1.1870	1.0683
62	1.6710	1.2532

Retirement

Active members are assumed to retire based on the following rates:

<u><i>Age</i></u>	<u><i>Rate</i></u>
55-58	3%
59	7
60-61	10
62	35
63-64	20
65	40
66-69	30
70	100

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX C
MEMBERSHIP DATA**

POLICE

	<i>Active</i>	<i>Vested</i>	<i>Retired</i>	<i>Total</i>
<i>Count as of July 1, 2013</i>	55	3	78	136
Terminated, paid refund	-	-	-	-
Terminated, benefits due	(1)	1	-	-
Retired	-	-	-	-
Died, beneficiary due benefits	-	-	-	-
Died, no further benefits due	-	-	(1)	(1)
Correction	-	-	-	-
New member	2	-	-	5
New QDRO	-	1	2	3
<i>Count as of July 1, 2014</i>	56	5	79	140

**TOWN OF COVENTRY PENSION PLANS
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**APPENDIX C
MEMBERSHIP DATA**

POLICE

	Years of Service								All Years
	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	5	5	0	0	0	0	0	0	10
30-34	1	10	1	0	0	0	0	0	12
35-39	1	1	7	0	0	0	0	0	9
40-44	0	2	3	3	0	0	0	0	8
45-49	2	1	0	3	1	0	0	0	8
50-54	0	0	1	1	3	0	0	0	4
55-59	0	1	0	0	0	0	0	1	2
60-64	0	0	0	0	0	0	0	1	1
65+	0	0	0	0	0	0	0	0	0
All Ages	11	20	12	7	4	0	0	2	56

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX C
MEMBERSHIP DATA**

MUNICIPAL

	<i>Active</i>	<i>Term. Vested</i>	<i>Retired</i>	<i>Total</i>
<i>Count as of July 1, 2013</i>	102	36	66	204
Terminated, paid refund	-	-	-	-
Terminated, vested	(1)	1	-	-
Retired	(1)	(1)	2	-
Died, beneficiary due benefits	-	(1)	-	(1)
Died, no further benefits due	-	-	(1)	(1)
Transferred to Police Plan	-	-	-	-
Correction	-	-	-	-
New member	2	1	-	3
Rehired	-	-	-	-
Correction	-	-	-	-
<i>Count as of July 1, 2014</i>	102	36	67	205

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX C
MEMBERSHIP DATA**

MUNICIPAL

	<i>Years of Service</i>								<i>All Years</i>
	<i>0-4</i>	<i>5-9</i>	<i>10-14</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35+</i>	
<i><=25</i>	0	0	0	0	0	0	0	0	0
<i>25-29</i>	1	1	0	0	0	0	0	0	2
<i>30-34</i>	0	4	0	0	0	0	0	0	4
<i>35-39</i>	0	4	1	1	0	0	0	0	6
<i>40-44</i>	0	4	5	1	0	0	0	0	10
<i>45-49</i>	3	4	5	3	4	3	0	0	22
<i>50-54</i>	2	4	4	7	4	2	0	0	23
<i>55-59</i>	0	4	2	2	8	4	2	1	23
<i>60-64</i>	0	1	1	2	1	0	1	2	8
<i>65+</i>	0	0	2	0	0	1	1	0	4
<i>All Ages</i>	6	26	20	16	17	10	4	3	102

**TOWN OF COVENTRY PENSION PLANS
2014 EXPERIENCE STUDY**

**APPENDIX D
SELECTED ECONOMIC ASSUMPTIONS FROM THE
2014 OASDI TRUST FUNDS ANNUAL REPORT**

THE 2014 ANNUAL REPORT OF THE BOARD OF
TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS
INSURANCE AND FEDERAL DISABILITY INSURANCE
TRUST FUNDS

COMMUNICATION

FROM

THE BOARD OF TRUSTEES, FEDERAL OLD-AGE AND
SURVIVORS INSURANCE AND FEDERAL DISABILITY
INSURANCE TRUST FUNDS

TRANSMITTING

THE 2014 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL
DISABILITY INSURANCE TRUST FUNDS



July 28, 2014.—Referred to the Committee on Ways and Means
and ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

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WASHINGTON: 2014

Economic Assumptions and Methods

Table V.B1.—Principal Economic Assumptions

Calendar year	Annual percentage change ^a in—						
	Productivity (Total U.S. economy)	Earnings as a percent of compensation	Average hours worked	GDP price index	Average annual wage in covered employment	Consumer Price Index	Real- wage differ- ential ^b
Historical data:							
5-year periods:							
1960 to 1965 ...	3.27	-0.18	0.16	1.36	3.22	1.24	1.98
1965 to 1970 ...	2.06	-0.31	-0.68	4.03	5.84	4.23	1.61
1970 to 1975 ...	2.07	-0.50	-0.87	6.60	6.62	6.76	-0.18
1975 to 1980 ...	0.95	-0.32	-0.17	7.19	8.87	8.91	-0.06
1980 to 1985 ...	1.74	-0.33	0.02	5.21	6.53	5.22	1.29
1985 to 1990 ...	1.37	-0.19	-0.08	3.11	4.75	3.83	0.92
1990 to 1995 ...	1.26	-0.11	0.41	2.44	3.57	3.03	0.54
1995 to 2000 ...	2.34	0.28	0.14	1.67	5.31	2.43	2.88
2000 to 2005 ...	2.64	-0.41	-0.82	2.35	2.69	2.49	0.21
2005 to 2010 ...	1.61	-0.09	-0.48	1.93	2.55	2.30	0.26
Economic cycles:^c							
1966 to 1973 ...	2.27	-0.29	-0.71	4.60	6.10	4.61	1.48
1973 to 1979 ...	1.10	-0.43	-0.56	7.52	8.55	8.54	0.01
1979 to 1989 ...	1.39	-0.28	0.00	4.68	5.80	5.31	0.45
1989 to 2000 ...	1.79	0.05	0.15	2.20	4.52	2.96	1.57
2000 to 2007 ...	2.15	-0.23	-0.64	2.50	3.23	2.65	0.60
2007 to 2013 ...	1.36	0.01	-0.15	1.51	1.89	2.08	-0.19
Single years:							
2003	3.31	-0.66	-1.49	2.00	2.51	2.22	0.30
2004	2.66	-0.27	0.02	2.74	4.67	2.61	2.06
2005	1.84	-0.22	-0.23	3.21	3.70	3.52	0.18
2006	0.84	0.49	-0.04	3.07	4.72	3.19	1.53
2007	1.06	-0.05	-0.38	2.66	4.50	2.88	1.62
2008	0.77	-0.06	-0.62	1.92	2.47	4.09	-1.62
2009	2.88	-0.66	-1.89	0.80	-1.52	-0.67	-0.85
2010	2.52	-0.17	0.57	1.22	2.69	2.07	0.62
2011	0.28	0.34	0.99	1.96	3.16	3.56	-0.39
2012	1.04	0.31	-0.07	1.75	2.69	2.10	0.59
2013 ^d	0.73	0.30	0.11	1.39	1.92	1.43	0.49
Intermediate:							
2014	1.57	-0.14	0.17	1.44	3.78	1.61	2.18
2015	1.92	-0.17	0.08	1.55	4.92	1.95	2.97
2016	1.87	0.09	0.08	1.78	5.01	2.18	2.84
2017	1.82	0.15	0.07	1.98	4.95	2.38	2.57
2018	1.61	0.06	0.05	2.18	4.70	2.58	2.12
2019	1.58	-0.18	0.02	2.29	4.28	2.69	1.58
2020	1.55	-0.19	^c	2.30	4.12	2.70	1.42
2021	1.63	-0.17	-0.03	2.30	4.11	2.70	1.41
2022	1.66	-0.13	-0.05	2.30	4.02	2.70	1.32
2023	1.68	-0.12	-0.05	2.30	3.85	2.70	1.15
2020 to 2025 ...	1.67	-0.13	-0.05	2.30	3.92	2.70	1.22
2025 to 2088 ...	1.68	-0.11	-0.05	2.30	3.83	2.70	1.13

Assumptions and Methods

Table V.B1.—Principal Economic Assumptions (Cont.)

Calendar year	Annual percentage change ^a in—						Real-wage differential ^b
	Productivity (Total U.S. economy)	Earnings as a percent of compensation	Average hours worked	GDP price index	Average annual wage in covered employment	Consumer Price Index	
Low-cost:							
2014	1.88	-0.14	0.31	1.71	4.79	1.79	3.00
2015	2.21	-0.15	0.24	2.52	6.70	2.82	3.88
2016	2.12	0.12	0.22	3.05	7.01	3.35	3.66
2017	1.92	0.18	0.17	3.09	6.43	3.39	3.04
2018	1.64	0.11	0.09	3.08	5.58	3.38	2.20
2019	1.92	-0.12	0.07	3.10	5.34	3.40	1.94
2020	2.00	-0.12	0.06	3.10	5.38	3.40	1.98
2021	1.93	-0.10	0.05	3.10	5.31	3.40	1.91
2022	1.98	-0.06	0.05	3.10	5.38	3.40	1.98
2023	1.98	-0.03	0.05	3.10	5.20	3.40	1.80
2020 to 2025	1.96	-0.04	0.05	3.10	5.23	3.40	1.83
2025 to 2088	1.98	-0.02	0.05	3.10	5.16	3.40	1.76
High-cost:							
2014	1.00	-0.14	-0.05	1.23	2.29	1.48	0.81
2015	1.63	-0.18	-0.13	0.96	3.16	1.46	1.71
2016	1.75	0.07	-0.06	0.98	3.58	1.48	2.10
2017	1.69	0.11	-0.03	1.18	3.75	1.68	2.07
2018	1.43	0.02	-0.03	1.38	3.55	1.88	1.68
2019	1.39	-0.23	-0.04	1.49	3.24	1.99	1.25
2020	1.38	-0.25	-0.05	1.50	3.22	2.00	1.22
2021	1.30	-0.24	-0.06	1.50	3.10	2.00	1.10
2022	1.24	-0.22	-0.08	1.50	2.96	2.00	0.96
2023	1.31	-0.21	-0.11	1.50	2.70	2.00	0.70
2020 to 2025	1.32	-0.21	-0.11	1.50	2.75	2.00	0.75
2025 to 2088	1.38	-0.19	-0.15	1.50	2.52	2.00	0.52

^a For rows with a single year listed, the value is the annual percentage change from the prior year. For rows with a range of years listed, the value is the compound average annual percentage change.

^b For rows with a single year listed, the value is the annual percentage change in the average annual wage in covered employment less the annual percentage change in the Consumer Price Index. For rows with a range of years listed, the value is the average of annual values of the differential. Values are rounded after all computations.

^c Economic cycles are shown from peak to peak, except for the last cycle, which is not yet complete.

^d Historical data are not available for the full year. Estimated values vary slightly by alternative and are shown for the intermediate assumptions.

^e Greater than -0.005 and less than 0.005 percent.

5. Labor Force and Unemployment Projections

The Office of the Chief Actuary at the Social Security Administration projects the civilian labor force by age, sex, marital status, and presence of children. Projections of the labor force participation rates for each group reflect disability prevalence, educational attainment, the average level of Social Security retirement benefits, the state of the economy, and the change in life expectancy. The projections also include a “cohort effect,” which reflects a shift upward in female participation rates across cohorts born through 1948.

The annual rate of growth in the size of the labor force decreased from an average of about 2.4 percent during the 1966-73 economic cycle and