

Appendix I



65 LaSalle Road
West Hartford, CT 06107-2397
860-521-8400 tel
860-521-3742 fax
www.hhconsultants.com

**City of Hartford
Municipal
Employees'
Retirement Fund
(MERF)**

Actuarial Survey

July 1, 2013

Timothy A. Ryor, FSPA, FCA
Senior Vice President and
Consulting Actuary

Ellen A. Kucenski, FSA
Consulting Actuary

Brianne Czeliecz
Pension Analyst

March 19, 2014

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Section I

Valuation Report

A. Purpose of the Valuation

The purpose of the valuation is to determine the funded status of the plan as well as the recommended cash contribution for the plan year. The information found in Section II of the report has been developed for this purpose.

The ultimate cost of a pension plan is based primarily on the level of benefits promised by the plan. The pension fund's investment earnings serve to reduce the cost of plan benefits and expenses. Thus,

<i>City's ultimate cost</i>	=	<i>benefits paid</i>	+	<i>expenses incurred</i>	-	<i>investment return</i>	-	<i>employee contributions</i>
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B. Contribution for 2014-2015 Fiscal Year

The City's recommended contribution for the 2014-2015 fiscal year, determined from the July 1, 2013 actuarial valuation, is shown below. We have shown the recommended contribution for the 2014-2015 fiscal year as a percentage of payroll, as well as an *estimated* dollar amount.

	Recommended 2014-2015 Fiscal Year		Recommended 2013-2014 Fiscal Year	
	Contribution (July 1, 2013 Valuation)	% of payroll	Contribution (July 1, 2012 Valuation)	% of payroll
Police	44.08%	\$18.36	40.02%	\$16.91
Firefighters	30.14%	\$10.70	28.07%	\$8.82
Board of Education	9.92%	\$4.51	9.43%	\$3.86
Municipal Services	49.25%	\$12.97	45.89%	\$12.42
Library	23.94%	\$1.22	24.18%	\$1.19
Total		\$47.76		\$43.20

Please see Section II, Exhibit A for the development of these figures.

The recommended City contribution is expressed as a percentage of the payroll for each of the five groups of employees covered by the plan: Police, Firefighters, Board of Education, Municipal Services, and Library. Under the cost method currently used by the MERF, the annual contribution is first developed as a flat dollar amount for each group and then converted to a percentage of payroll using an *estimated* payroll figure. Each of those percentages is then applied against the *actual* payroll for each group for the fiscal year, to yield the *actual* dollar amount of the cash contribution required.

The dollar amount shown above is merely an *estimate* of the cash contribution required. Importantly, while the percentages of payroll will not change because they are actuarially determined, the dollar amount of the City's actual required contribution will change -- upward or downward -- depending on whether *actual* payrolls in the fiscal year are more, or less, than currently estimated.

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Valuation Report

(continued)

As can be seen, the contributions as a percentage of payroll have increased from last year for all groups except Library which remained relatively level. As a dollar amount, the estimated contribution for fiscal year 2013-2014 was \$43.2 million as shown in the July 1, 2012 valuation, determined based on a payroll estimate at that time of approximately \$151.5 million (obtained by projecting the payroll provided with the July 1, 2012 actuarial valuation to fiscal year 2013-2014 using the valuation's assumed rate of salary increase). The 2014-2015 fiscal year contribution represents an increase of approximately \$4.6 million over that figure to \$47.8 million.

As is true each year, the change in the recommended contribution requirement from last year to this year is the result of actual plan asset performance, as well as changes in liabilities caused by changes in the covered population and benefit provisions (where applicable). See Sections D and E to follow for more detail regarding this year's increase.

C. Funded Status

The funded status of the plan as of July 1, 2013 is summarized below. The figures are prepared in accordance with the requirements of the Governmental Accounting Standards Board, or GASB, and are useful in assessing the health of the plan overall.

Specifically, the funded status is based on the smoothed (actuarial) value of assets used in the valuation, as well as a measure of the plan's liability known as the Actuarial Accrued Liability. The Actuarial Accrued Liability is the liability for benefits expected to be paid from the plan for inactive participants, as well as the liability for future expected benefit payments for active participants. For actives, the liability measure includes the impact of assumed future salary increases on projected benefits, but includes only that portion of their overall liability attributable to services rendered as of the valuation date.

July 1, 2013	
Actuarial Accrued Liability	\$1,258,182,000
Actuarial Value of Assets	<u>963,269,000</u>
Unfunded Status	294,913,000
Funded Percentage	76.6%

During the 2012-2013 fiscal year, the plan's funded status dropped from 79.0% as of July 1, 2012 to 76.6% as of July 1, 2013, as detailed above. Despite the fact that the City fully funded the recommended contribution for the year, asset growth did not keep pace with liability growth, resulting in the decline in the funded status. This is primarily the result of the asset losses on the smoothed (actuarial) value of assets discussed in Section D below. Changes in the plan population and the resulting impact on plan liabilities partially offset these assets losses, preventing an otherwise larger decline in funded status.

Even with a funded status of less than 100%, the plan is still in a healthy position with the ability to pay benefits due at the current 76.6% level. It is not the intent of the plan's funding method to fully fund such shortfalls in just one year. Absent of other significant changes, such underfunding will be eliminated over a period of years as it is spread into future contribution requirements.

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Valuation Report
(continued)

D. Plan Experience During Period Under Review

As discussed earlier, the recommended City contribution for the 2014-2015 fiscal year has increased from last year by approximately \$4.6 million based on estimates of payroll. This increase is the net impact of annual plan asset and liability experience.

The primary reason for this \$4.6 million increase is the continued recognition of the decline in the capital markets that occurred within the 2008-2009 fiscal year, with the resulting loss of market value of MERF assets during that period.

During 2012-2013, the market value of assets increased from \$942.7 million to \$969.9 million, resulting in an asset return of approximately 8.4% over the period. In order to avoid dramatic fluctuations in contribution requirements with large swings in the market, a “smoothed” or “actuarial” value of assets is used to perform the valuation. This smoothed value recognizes the difference between the expected return on the market value of assets and the actual return over a 5-year period at 20% per year.

As of July 1, 2013, the actuarial value of assets used in the development of the contribution requirement was approximately \$963.3 million, \$6.6 million lower than the market value of assets of \$969.9 million at such date. The return for the year on the actuarial value was 3.8%. Since 3.8% is less than MERF’s 8% return assumption, asset losses were generated that increased the fiscal year 2014-2015 contribution requirement. Specifically, these losses represented approximately \$4.7 million of the increase in the contribution and were therefore the primary driver of the increase.

Changes in the plan’s population and the resulting impact on plan liabilities had the net effect of decreasing the recommended City contribution by approximately \$0.1 million. The main reasons for this decrease were salaries increasing by less than expected. The small gain related to non-investment experience in total indicates that the assumptions, put in place after the 2011 experience study, are closely modeling actual plan experience. A new study is not expected to be recommended until 2016; however actual experience compared to the assumptions is reviewed each year.

The investment return assumption is reviewed compared to both past experience and future expectations. Future expectations are determined by using long-term (20+ year) capital market assumption and MERF target asset allocation. That review indicated that the current 8% assumptions should be reevaluated. MERF’s investment advisors, NEPC, are currently working on a detailed analysis of long term expected investment return rates in the MERF. NEPC’s recommendations were not available in time for the publication of this report. Their recommendations will be incorporated into any recommendation for the rate of return for the July 1, 2014 Actuarial Valuation.

Section I
Valuation Report
(continued)

E. Changes Since The Last Valuation

There were no assumption or method changes effective with the July 1, 2013 valuation.

Specific plan changes reflected in this valuation are as follows:

- MLA: New hires after November 26, 2012 receive 1.75% benefit multiplier (reduced from 2.0%)

Section I
Valuation Report
(continued)

F. Future Contribution Requirements

The use of a smoothed (actuarial) value of assets is meant to produce a more level funding pattern, given asset volatility. With a drop in the market, asset losses are spread over a five-year period, leveling out the recommended funding rather than providing for a spike in contribution requirements in one year. As of July 1, 2013, there were approximately \$6.6 million in net unrecognized asset gains that eventually will be recognized in future City contribution requirements because of the use of this smoothing method. As a percentage of total assets, the amount of unrecognized gains are relatively small and so future contributions can be expected to remain fairly level for the 2015-2016 fiscal year, absent other significant changes.

To provide a sense of the level of expected future contributions, an estimate for the 2015-2016 fiscal year has been calculated. Specifically, the City's estimated recommended contribution for that fiscal year is currently \$47.8 million. This figure is based on a projected market value of assets at July 1, 2014 of \$1,002.4 million, determined by projecting the market value of assets as of July 1, 2013 to June 30, 2014 assuming an 8% return. Projected plan liabilities inherent in this calculation were based on the results of the July 1, 2013 valuation, including the assumptions, methods, and census data as of such date. The unfunded actuarial accrued liability was amortized over a 15 year period.

The projected asset value and estimated contribution for the 2015-2016 fiscal year assume the City funds the recommended contribution for 2013-2014. If the City contributes an amount other than the annual recommended contribution, the estimated future contribution will vary from the amount shown here.

The final 2015-2016 recommended contribution will be based upon final liabilities, assets and investment return assumption as of July 1, 2014. To provide some sensitivity of the contribution to the investment return assumption, if the assumption was lowered to a rate of 7.75%, the City's gross contribution would increase from \$47.8 million to \$52.3 million. This assumes the unfunded liability is amortized over a 15 year period. If the amortization period was increased to 25 years, the expected contribution would decrease to \$45.4 million.

Beginning with the 2014-2015 fiscal year contribution, the historic asset losses of 2007-2009 will be fully recognized. Therefore, future contribution increases are not expected to be as significant beyond the 2014-2015 fiscal year absent any other assumption or method changes. The extent of any increase or decrease in contribution will depend on market returns after July 1, 2013, among other factors.

Section I

Valuation Report

(continued)

G. New Accounting Standards

In June of 2013, The Government Accounting Standards Board (GASB) issued statements 67 and 68. GASB 67 is a new standard that pertains to financial reporting for pension plans. In general, it replaces GASB 25 and it is effective for fiscal years beginning after June 15, 2013. GASB 68 is a new standard that pertains to accounting and financial reporting for pensions by State and Local Government Employers. In general, it replaces GASB 27 and it is effective for fiscal years beginning after June 15, 2014. Both statements replace the relevant provisions of GASB 50.

Currently, the City's annual financial report tracks the Net Pension Obligation (NPO) in the footnote section of the annual financial report. With GASB 68, the NPO will no longer be tracked. A new item called Net Pension Liability (NPL) will be displayed not as a footnote but directly on your balance sheet. For both standards, liabilities are calculated using the Entry Age Normal (EAN) Cost Method. In general, the NPL is the EAN Accrued Liability less the Market Value of Assets. The following table displays the NPL for the MERF for the last two years.

<u>Valuation Date</u>	<u>Entry Age Normal Accrued Liability</u>	<u>Market Value Of Assets</u>	<u>Net Pension Liability</u>
July 1, 2012	\$1,237,136,000	\$942,652,000	\$294,484,000
July 1, 2013	\$1,258,182,000	\$969,868,000	\$288,314,000

In addition to replacing the NPO with the NPL, the Annual Required Contribution (ARC) will also be eliminated. Even though the ARC will be eliminated, we will work with the City to develop a contribution policy. The new term for this is the Actuarially Determined Contribution (ADC). One possible ADC is to use the same concepts that were used to develop the ARC which would mean no change in the present funding policy.

Under the prior standards, the ARC served as both the contribution policy and the accounting expense. As noted above the ARC is eliminated and replaced with the ADC with regard to the funding policy. The new pension expense will be quite different from the ARC and it has several components (including normal cost, interest cost, amortization components, actual return, and plan changes). The new pension expense will help reconcile the change in the Net Pension Liability each year. In addition, it will be more volatile than the ARC and so not suitable for use as a contribution policy.

If the City wants to see how the pension expense works, please let us know and we will prepare a sample exhibit. Like the Net Pension Liability, the calculation of the pension expense is based upon the Entry Age Normal Cost Method and will no longer be a footnote but reported directly in the annual financial report.

Section I
Valuation Report
(continued)

H. Certification

This report presents the results of the July 1, 2013 Actuarial Valuation for the City of Hartford Municipal Employees' Retirement Fund (MERF) (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarial Determined Contribution (ADC) for the fiscal year ending June 30, 2015. This report is intended to satisfy the requirements of Connecticut General Statute 7-450a.

The valuation has been performed in accordance with generally accepted actuarial principles and practices. It is intended to comply with all applicable Actuarial Standards of Practice.

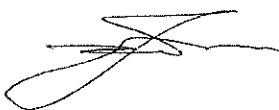
We certify that the actuarial assumptions and methods that were selected by us and represent our best estimate of anticipated actuarial experience under the Plan.

In preparing this valuation, we have relied on employee data and asset and contribution information provided by the Plan Sponsor. We have audited neither the employee data nor the financial information, although we have reviewed them for reasonableness.

The results in this valuation report are based on the Plan as summarized in the *Summary of Plan Provisions* section of this report and the actuarial assumptions and methods detailed in the *Description of Actuarial Methods and Assumptions* section of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: 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 this report, an analysis of the potential range of such future measurements has not been performed.

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



Timothy A. Ryor, FSPA, FCA, MAAA
Enrolled Actuary 11-05126



Ellen A. Kucenski, FSA, MAAA
Enrolled Actuary 11-07674

March 19, 2014

Section II

Supporting Exhibits

A. Entry Age Normal Actuarial Accrued Liability as of July 1, 2013

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
A. Covered Payroll Annual Payroll (000)	\$37,883	\$32,754	\$44,519	\$24,852	\$4,641	\$144,649
B. Actuarial Accrued Liability (AAL) Entry Age Normal AAL (000)						
1. Active Members						
a. Active Members' MERF Liability	\$133,747	\$113,091	\$71,085	\$49,812	\$9,716	\$377,451
b. Local 566 Payment Present Value	0	0	2,897	0	0	
c. Local 1716 Payment Present Value	0	0	0	2,704	0	
d. Total for Active Members	133,747	113,091	73,982	52,516	9,716	383,052
2. Terminated Non-Vested Members [allocated by (1d)]	196	166	104	73	14	553
3. Terminated Vested Members	874	2,224	7,380	6,682	93	17,253
4. Retired Members	272,280	208,046	93,961	267,870	14,434	856,591
5. Old Plans Cola 1987/1990/1997/1999/2001/2005/2007	422	178	75	59	0	734
6. Total	407,519	323,704	175,502	327,200	24,258	1,258,183
C. Valuation Assets (Adjusted Value)						
1. Amount prior to Recognizing Receivable (000)	\$301,097	\$262,236	\$149,248	\$233,945	\$16,743	\$963,269
2. Contribution Receivable (000)	0	0	0	0	0	0
3. Valuation Assets after Recognition of Receivable (000)	301,097	262,236	149,248	233,945	16,743	963,269
D. Unfunded Actuarial Accrued Liability (000)	\$106,422	\$61,468	\$26,254	\$93,255	\$7,515	\$294,914
E. Funded Percent (C. / B.)	73.9%	81.0%	85.0%	71.5%	69.0%	76.6%

Section II

Supporting Exhibits (continued)

B. Cash Contributions

July 1, 2014 – June 30, 2015 Fiscal Year Contribution

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
1. Development of Amortization						
a. Unfunded Actuarial Accrued Liability	\$106,421,637	\$61,467,850	\$26,253,992	\$93,254,198	\$7,514,869	\$294,912,546
b. Amortization of Unfunded AAL (15 year open)	11,512,214	6,649,316	2,840,039	10,087,820	812,925	31,902,313
2. Normal Cost Development						
a. Normal Cost Beginning of Year prior to Expense Load	\$5,022,592	\$2,818,924	\$1,355,009	\$2,072,597	\$290,525	\$11,559,647
b. Normal Cost Projected One Year prior to Expense Load	5,424,399	3,044,438	1,463,410	2,238,405	313,767	12,484,419
c. Expense Load (Allocated by AAL)	816,887	648,876	351,800	655,884	48,626	2,522,073
3. Fiscal Year Contribution for 07/01/2014 - 06/30/2015						
I. Gross City Contribution						
a. Total Contribution Due as of Beginning of Year (1b+2b+2c)	17,753,500	10,342,630	4,655,249	12,982,109	1,175,318	46,908,806
b. Total Interest Adjusted Gross City Contribution	18,449,979	10,748,376	4,837,876	13,491,403	1,221,426	48,749,061
II. Annual Adjusted Payroll as of 07/01/2013 w 2 year proj	41,856,490	35,658,714	48,786,313	27,394,181	5,101,183	158,796,881
III. Contribution as a % of Payroll prior to adjustments	44.08%	30.14%	9.92%	49.25%	23.94%	30.70%
IV. 07/01/2014 Payment for Local 566 (000)	0	0	303,918	0	0	303,918
V. 07/01/2014 Payment for Local 1716 (000)	0	0	0	509,126	0	509,126
VI. Old Plans COLA Annual Payment (000)	93,815	45,565	18,933	15,488	0	173,801
VII. Net City Contribution [(I.) - (IV.) - (V.) - (VI.)]	18,356,164	10,702,811	4,515,025	12,966,789	1,221,426	47,762,216

	2013 - 2014 Contribution Sensitivity*					
	Police	Firefighters	Board of Education	Municipal Services	Library	Total
Estimated 2013-2014 Fiscal Year Payroll +5%	\$43,949,315	\$37,441,650	\$51,225,629	\$28,763,890	\$5,356,242	\$166,736,726
Net City Contribution Estimate for 2013-2014	19,279,043	11,239,348	4,758,731	13,641,602	1,282,284	50,201,008
Estimated 2013-2014 Fiscal Year Payroll -5%	39,763,666	33,875,778	46,346,997	26,024,472	4,846,124	150,857,037
Net City Contribution Estimate for 2013-2014	17,434,009	10,164,594	4,274,771	12,292,438	1,160,162	45,325,974

*Based on contribution policy of depositing a % of payroll using actual fiscal year payroll.

Section II
Supporting Exhibits
(continued)

C. Actuarial Balance Sheet

	July 1, 2013	July 1, 2012
Actuarial Liabilities		
Present Value of Future Benefits for:		
Active Employees	\$561,888,086	\$536,794,819
Inactive Members		
• Regular Retirees	770,958,142	769,949,362
• Disability Retirees	60,832,836	61,312,447
• Survivors	24,799,766	26,622,704
• Terminated Non-Vesteds	553,450	553,450
• Terminated Vesteds	17,253,066	14,834,388
• Old Plans COLA	733,305	723,482
TOTAL	\$1,437,018,651	\$1,410,790,652
Source of Funds		
1. Actuarial Value of Assets	\$963,269,168	\$977,145,866
2. Present Value of Future Employee Contributions	84,473,670	91,249,308
3. Present Value of Future City Normal Cost Contributions	94,363,267	82,405,435
4. Unfunded Accrued Liability	294,912,546	259,990,043
5. TOTAL = (1) + (2) + (3) + (4)	\$1,437,018,651	\$1,410,790,652

Section II

Supporting Exhibits (continued)

D. Value of Accrued Benefits as of July 1, 2013

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
A. Covered Payroll						
Annual Payroll	\$37,883	\$32,754	\$44,519	\$24,852	\$4,641	\$144,649
B. Actuarial Accrued Liability (AAL)						
Unit Credit AAL						
1. Active Members						
a. Active Members' MERF Liability	\$100,482	\$92,912	\$46,462	\$40,206	\$6,055	\$286,117
b. Local 566 Payment Present Value	0	0	2,897	0	0	2,897
c. Local 1716 Payment Present Value	0	0	0	2,704	0	2,704
d. Total for Active Members	100,482	92,912	49,359	42,910	6,055	291,718
2. Terminated Non-Vested Members [allocated by (fd)]	196	166	104	73	14	553
3. Terminated Vested Members	874	2,224	7,380	6,682	93	17,253
4. Retired Members	272,280	208,046	93,961	267,870	14,434	856,591
5. Old Plans Cola 1987/1990/1997/1999/2001/2005/2007	422	178	75	59	0	734
6. Total	374,254	303,526	150,879	317,594	20,596	1,166,849

Section II
Supporting Exhibits
(continued)

E. Development of Asset Values

The Actuarial Value of assets is used in the determination of plan contributions. It phases in recognition of asset gains and losses. A method of smoothing is used because the Market Value can swing widely from one year to the next, resulting in undesirable fluctuations in pension contributions. The smoothing is accomplished by recognizing asset gains and losses over a five-year period at 20% per year.

Relationship of Actuarial Value to Market Value		
1. Market value 7/1/2013	\$	969,867,917
2. Gain / (loss) not recognized in actuarial value 7/1/2013		6,598,749
3. Preliminary actuarial value 7/1/2013: (1)-(2)		963,269,168
4. Preliminary actuarial value as a percentage of market value: (3)÷(1)		99.3%
5. Gain / (loss) recognized for corridor min/max		N/A
6. Actuarial value 7/1/2013 after corridor min/max: (3)+(5)		963,269,168
7. Actuarial value as a percentage of market value: (6)÷(1)		99.3%

Development of Asset Gain / (Loss) for 2012-2013 Plan Year		
1. Market value 7/1/2012	\$	942,652,465
2. Contributions		44,796,727
3. Benefit payments		92,521,793
4. Administrative expenses		2,334,383
5. Expected return at 8.00%		73,464,792
6. Expected value 7/1/2013: (1)+(2)-(3)-(4)+(5)		966,057,808
7. Market value 7/1/2013		969,867,917
8. Asset gain / (loss) for -1 Plan Year: (7)-(6)		3,810,109

Recognition of Gain / (Loss) in Actuarial Value					
Year	(a) Gain / (loss)	(b) Recognized as of 7/1/2012	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 7/1/2013: (b)+(c)	(e) Not recognized as of 7/1/2013: (a)-(d)
2008-2009	\$ (241,203,873)	\$ (192,963,100)	\$ (48,240,773)	\$ (241,203,873)	\$ 0
2009-2010	26,022,852	15,613,710	5,204,570	20,818,280	5,204,572
2010-2011	83,151,652	33,260,660	16,630,330	49,890,990	33,260,662
2011-2012	(58,190,952)	(11,638,190)	(11,638,190)	(23,276,380)	(34,914,572)
2012-2013	3,810,109	0	762,022	762,022	3,048,087
Total			(37,282,041)		6,598,749

Section II

Supporting Exhibits (continued)

E. Development of Asset Values

Summary of Fund Activity		
	Market Value	Actuarial Value
1. Beginning value 7/1/2012		
a. Trust assets	\$ 942,652,465	\$ 977,145,866
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a)+(b)-(c)-(d)	942,652,465	977,145,866
2. Contributions		
a. Employer Contributions during year	34,300,386	34,300,386
b. Employee Contributions during year	10,496,341	10,496,341
c. Change in accrued contribution	0	0
d. Total for plan year	44,796,727	44,796,727
3. Disbursements		
a. Benefit payments during year	92,521,793	92,521,793
b. Administrative expenses during year	2,334,383	2,334,383
c. Change in benefits payable	0	0
d. Change in administrative expenses payable	0	0
e. Total for plan year	94,856,176	94,856,176
4. Net investment return		
a. Interest and dividends	15,400,729	N/A
b. Change in accrued income	0	N/A
c. Realized gain (loss)	36,245,609	N/A
d. Unrealized gain (loss)	30,209,260	N/A
e. Expected return	N/A	73,464,792
f. Recognized gain (loss)	N/A	(37,282,041)
g. Required adjustment due to corridor	N/A	0
h. Reversal of prior year required adjustment	N/A	0
i. Investment-related expenses	(4,580,697)	N/A
j. Total	77,274,901	36,182,751
5. Ending value 7/1/2013		
a. Trust assets: (1a)+(2d)-(3a)-(4j)	969,867,917	963,269,168
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a)+(b)-(c)-(d)	969,867,917	963,269,168
6. Approximate rate of return 2012-2013	8.4%	3.8%

Section II
Supporting Exhibits
(continued)

E. Development of Asset Values

Period Ending June 30	Rate of Return on Market Value of Assets			
	Average Annual Effective Rate of Return			
	1 Year	3 Years	5 Years	10 Years
2004	14.6%	5.1%	4.3%	9.9%
2005	9.1%	9.4%	4.4%	9.3%
2006	8.7%	10.8%	6.6%	8.7%
2007	15.6%	11.1%	10.4%	8.3%
2008	-1.9%	7.2%	9.0%	6.3%
2009	-15.0%	-1.2%	2.7%	3.5%
2010	11.1%	-2.5%	3.1%	3.7%
2011	17.7%	3.6%	4.7%	5.7%
2012	1.9%	10.0%	2.1%	6.2%
2013	8.4%	9.1%	4.2%	6.6%

Section II

Supporting Exhibits (continued)

F. Accounting Information

GASB Statements No. 25 and 27

The following information is based on the Governmental Accounting Standards Board (GASB) Statement No. 25 on "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans" and Statement No. 27 on "Accounting for Pensions by State and Local Governmental Employers". It represents a summary of information detailed further within the MERF's annual GASB report. The exhibits are provided for information purposes only here.

In reviewing the following exhibit regarding employer contributions, it is important to note that for the fiscal year ending 2008 through 2010, the City contributed more than the recommended Annual Required Contribution (ARC). This is due to a catch up period in which the City has been making contributions for prior fiscal years in which there was a shortfall in the amount contributed. The footnotes below provide further detail.

Schedule of Employer Contributions

Year Ended June 30	Annual Required Contribution	Percentage Contributed	Actual Contribution Received by MERF	Miscellaneous *
2008	13,252,745	125%	16,454,745	129,258
2009	11,797,419	109%	12,713,915**	115,067
2010	9,601,580	113%	10,727,385	112,662
2011	18,846,217	100%	18,730,668	115,549
2012	27,599,529	100%	26,681,068	918,461
2013	34,337,947	100%	34,207,067	130,880

* Funds transferred from State of Connecticut's Connecticut Municipal Employees' Retirement System (CMERS) and Aetna annuity payments.

** Contribution includes \$1,031,484 in contributions paid for the prior fiscal year (2007/2008) after the 06/30/2008 reporting period closed.

Section II

Supporting Exhibits (continued)

F. Accounting Information

As detailed below, the plan's funded status dropped from 79.0% as of July 1, 2012 to 76.6% as of July 1, 2013. Despite the fact that the City fully funded the recommended contribution for the year, asset growth did not keep pace with liability growth, resulting in the decline in the funded status. This is primarily the result of the asset losses on the Actuarial Value of Assets during the year previously discussed.

Even with a funded status of less than 100%, the plan is still in a healthy position at the current 76.6% level with the ability to pay benefits due.

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a÷b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)÷c)
7/1/2008	1,123,379,000	1,099,441,000	(23,938,000)	102.2%	139,243,000	-17.2%
7/1/2009	1,089,184,000	1,126,965,000	37,781,000	96.6%	134,143,000	28.2%
7/1/2010	1,041,572,000	1,175,040,000	133,468,000	88.6%	132,529,000	100.7%
7/1/2011	1,017,602,000	1,218,900,000	201,298,000	83.5%	136,555,000	147.4%
7/1/2012	977,146,000	1,237,136,000	259,990,000	79.0%	137,919,000	188.5%
7/1/2013	963,269,000	1,258,182,000	294,913,000	76.6%	144,649,000	203.9%

Section II

Supporting Exhibits (continued)

G. Membership Data

Summary – Active Members as of July 1, 2013

	Number	Payroll*	Average Annual Pay*
Police	479	\$37,882,653	\$79,087
Firefighters	382	32,753,962	85,743
Board of Education	973	44,518,703	45,754
Municipal Services	419	24,852,373	59,314
Library	<u>71</u>	<u>4,640,729</u>	<u>65,362</u>
Total	2,324	\$144,648,420	\$62,241

*Basic salary plus overtime.

Summary – Pensioners as of July 1, 2013

	Service Pensions*		Disability Pensions		Survivor Benefits*		Total	
			Total Count	Monthly Annuities	Total Count	Monthly Annuities	Total Count	Monthly Annuities
	Count		Count		Count		Count	
Police	525	\$2,013,720	64	\$167,572	73	\$81,190	662	\$2,262,482
Firefighters	358	1,437,394	119	361,677	100	112,277	577	1,911,348
Board of Ed.	634	891,568	22	14,227	42	18,098	698	923,893
Municipal Svcs.	829	2,289,969	8	10,194	66	51,614	903	2,351,777
Library	68	136,113	1	1,867	2	1,115	71	139,095
Vested Deferred	<u>173</u>	<u>194,776</u>	--	--	--	--	<u>173</u>	<u>194,776</u>
TOTAL**	2,587	\$6,963,540	214	\$555,537	283	\$264,294	3,084	\$7,783,371

* 16 pensioners receiving benefits as retirees and as survivors are included in both groups.

** Additional monthly benefits for the July 1, 1987, July 1, 1990, July 1, 1997, July 1, 1999, July 1, 2001, July 1, 2005, and July 1, 2007 COLA's for the unfunded plans (PBF, FRF, and RAF) are also included in the total liabilities for MERF. Such participants are not included in the counts shown here.

Section II

Supporting Exhibits (continued)

G. Membership Data

Data Reconciliation – Police

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	495	2	660	1,157
Adjustments	0	0	+3	+3
Retirements	-3	-1	+4	0
Disabilities	0	0	0	0
Terminations				
Vested	-3	+3	N/A	0
Non-vested	-11	N/A	N/A	-11
Deaths	-1	0	-12	-13
New beneficiaries	N/A	0	+8	+8
Transfer group	0	0	0	0
Rehires	+1	0	-1	0
New entrants	+1	N/A	N/A	+1
Total Participants 7/1/2013	479	4	662	1,145
Average Age				
7/1/2012	38.7			
7/1/2013	39.8			
Average Service				
7/1/2012	10.0			
7/1/2013	11.4			
Payroll**				
7/1/2012	\$38,333,847			
7/1/2013	37,882,653			
Total monthly benefits*				
7/1/2012		\$7,756	\$2,251,691	
7/1/2013		6,521	2,262,482	

* Excludes old plan COLA participants.

** Basic salary plus overtime.

Section II
Supporting Exhibits
(continued)

G. Membership Data

Data Reconciliation – Firefighters

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	345	2	577	924
Adjustments	0	0	-1	-1
Retirements	-8	-1	+9	0
Disabilities	-2	0	+2	0
Terminations				
Vested	-3	+3	N/A	0
Non-vested	-1	N/A	N/A	-1
Deaths	0	0	-16	-16
New beneficiaries	N/A	0	+6	+6
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+51</u>	<u>N/A</u>	<u>N/A</u>	<u>+51</u>
Total Participants 7/1/2013	382	4	577	963
Average Age				
7/1/2012	41.2			
7/1/2013	40.2			
Average Service				
7/1/2012	13.9			
7/1/2013	12.8			
Payroll**				
7/1/2012	\$29,102,161			
7/1/2013	32,753,962			
Total monthly benefits*				
7/1/2012		\$10,537	\$1,864,734	
7/1/2013		16,637	1,911,348	

* Excludes old plan COLA participants.

** Basic salary plus overtime.

Section II

Supporting Exhibits (continued)

G. Membership Data

Data Reconciliation – Board of Education

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	883	75	691	1,649
Adjustments	+12	0	+2	+14
Retirements	-6	-7	+13	0
Disabilities	0	0	0	0
Terminations				
Vested	-30	+30	N/A	0
Non-vested	-24	N/A	N/A	-24
Deaths	-1	-1	-26	-28
New beneficiaries	N/A	0	+18	+18
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+139</u>	<u>N/A</u>	<u>N/A</u>	<u>+139</u>
Total Participants 7/1/2013	973	97	698	1,768
Average Age				
7/1/2012	47.5			
7/1/2013	46.7			
Average Service				
7/1/2012	12.2			
7/1/2013	10.2			
Payroll**				
7/1/2012	\$40,418,741			
7/1/2013	44,518,703			
Total monthly benefits*				
7/1/2012		\$76,490	\$925,752	
7/1/2013		86,756	923,893	

* Excludes old plan COLA participants.

** Basic salary plus overtime.

Section II

Supporting Exhibits (continued)

G. Membership Data

Data Reconciliation – Municipal Services

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	434	59	901	1,394
Adjustments	0	+2	0	+2
Retirements	-16	-8	+24	0
Disabilities	0	0	0	0
Terminations				
Vested	-12	+12	N/A	0
Non-vested	-24	N/A	N/A	-24
Deaths	-1	0	-33	-34
New beneficiaries	N/A	0	+11	+11
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+38</u>	<u>N/A</u>	<u>N/A</u>	<u>+38</u>
Total Participants 7/1/2013	419	65	903	1,387
Average Age				
7/1/2012	48.3			
7/1/2013	48.6			
Average Service				
7/1/2012	10.0			
7/1/2013	10.9			
Payroll**				
7/1/2012	\$25,586,351			
7/1/2013	24,852,373			
Total monthly benefits*				
7/1/2012		\$77,263	\$2,343,888	
7/1/2013		83,267	2,351,777	

* Excludes old plan COLA participants.

** Basic salary plus overtime.

Section II

Supporting Exhibits (continued)

G. Membership Data

Data Reconciliation – Library

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	71	2	73	146
Adjustments	0	0	0	0
Retirements	-1	0	+1	0
Disabilities	0	0	0	0
Terminations				
Vested	-1	+1	N/A	0
Non-vested	-4	N/A	N/A	-4
Deaths	0	0	-3	-3
New beneficiaries	N/A	0	0	0
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+6</u>	<u>N/A</u>	<u>N/A</u>	<u>+6</u>
Total Participants 7/1/2013	71	3	71	145
Average Age				
7/1/2012	47.3			
7/1/2013	48.3			
Average Service				
7/1/2012	13.1			
7/1/2013	12.6			
Payroll**				
7/1/2012	\$4,478,204			
7/1/2013	4,640,729			
Total monthly benefits*				
7/1/2012		\$1,069	\$141,415	
7/1/2013		1,595	139,095	

*Excludes old Plan COLA participants.

**Basic salary plus overtime.

Section II
Supporting Exhibits
(continued)

G. Membership Data

Data Reconciliation – Total

Participant Data				
	Active	Terminated Vested	Pensioners*	Total
Total Participants 7/1/2012	2,228	140	2,902	5,270
Adjustments	+12	+2	+4	+18
Retirements	-34	-17	+51	0
Disabilities	-2	0	+2	0
Terminations				
Vested	-49	+49	N/A	0
Non-vested	-64	N/A	N/A	-64
Deaths	-3	-1	-90	-94
New beneficiaries	N/A	0	+43	+43
Transfer group	0	0	0	0
Rehires	+1	0	-1	0
New entrants	<u>+235</u>	<u>N/A</u>	<u>N/A</u>	<u>+235</u>
Total Participants 7/1/2013	2,324	173	2,911	5,408
Payroll**				
7/1/2012	\$137,919,304			
7/1/2013	144,648,420			
Total monthly benefits				
7/1/2012		\$173,115	\$7,527,480	
7/1/2013		194,776	7,588,595	

*Excludes old Plan COLA participants.

**Basic salary plus overtime.

City of Hartford MERF - Police

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

Attained Age	No.	Completed Years of Credited Service										All years		
		Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and over	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.
Under 25	3	52,954	1	64,404										
25 to 29	28	58,977	30	80,513	4	74,852								
30 to 34	21	57,664	53	85,261	16	85,032	1	93,368						
35 to 39	8	57,129	36	85,342	20	84,465	18	92,427	1	77,389				
40 to 44	7	58,684	25	83,949	22	86,414	54	103,813	3	71,337	7	110,264		
45 to 49	3	56,037	13	76,199	13	82,834	39	90,826	5	95,171	5	105,426		
50 to 54	1	49,376	9	77,398	2	85,281	6	93,075	4	64,035	6	90,358		
55 to 59			2	77,179		3	83,296			3	84,495	1	####	
60 to 64						1	115,605					2	72,326	
65 to 69						1	39,084					1	72,651	
70 & over												1	88,139	
All ages	71	57,824	169	82,878	78	83,772	122	96,954	13	78,722	21	99,743	5	82,549
														479

City of Hartford MERF - Fire

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

Attained Age	Completed Years of Credited Service										All years Avg. Comp. No.		
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and over			
Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.			
Under 25	14	55,867	5	61,766	1	85,268					20		
25 to 29	20	55,871	14	63,814	23	82,804					57		
30 to 34	8	55,208	7	61,526	22	81,314	9	86,978	1	80,417	47		
35 to 39	5	54,878	3	60,684	14	80,162	22	84,005	12	87,784	3		
40 to 44	3	54,477	2	60,964	6	83,906	13	84,510	30	87,894	4		
45 to 49			3	82,162	13	86,694	24	94,483	11	93,204	11		
50 to 54	1	53,575		3	87,505	5	81,762	20	88,914	6	88,030	11	
55 to 59							5	83,101		2	91,944	4	
60 to 64							1	79,529	1	82,824		1	
65 to 69													
70 & over													
All ages	51	55,542	31	62,480	72	82,139	62	84,925	93	89,372	25	90,296	26
												96,148	
												18	
												92,144	
												1	
												82,797	
												3	
												105,869	
												382	
												81,355	

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City of Hartford MERF - Board of Education

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

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City of Hartford MERV - Municipal Services

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

Attained Age	Completed Years of Credited Service										All years					
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and over	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.	Avg. Comp. No.		
Under 25	1	37,345	7	39,712	1	53,795									9 41,014	
25 to 29	10	44,598	11	57,674	7	42,770	1	11,858							29 47,988	
30 to 34	5	64,367	14	65,339	3	64,499	3	64,127	1	60,781					26 64,740	
35 to 39	4	56,309	16	64,250	14	75,923	6	60,143	1	93,950	1	80,460			43 67,985	
40 to 44	1	35,675	8	71,011	19	78,197	6	85,799	2	71,446		2	101,500	1	39 77,923	
45 to 49	1	67,320	13	81,063	13	50,723	12	67,846	5	54,520	6	41,867	3	63,791	6 60,052 59 62,206	
50 to 54	4	53,811	14	70,065	21	74,196	11	47,144	12	48,899	8	45,848	3	73,370	1 47,479 2 70,950 4 49,224 80 60,410	
55 to 59	3	57,657	12	98,293	14	59,481	15	47,234	8	78,448	7	48,468	6	64,513	1 46,209 1 59,658	67 64,978
60 to 64	3	67,635	6	99,777	9	82,795	6	59,662	6	50,511	2	45,367	2	70,054	3 56,423 1 59,658	38 70,198
65 to 69	6	55,786	4	80,732	3	45,264	3	37,816	2	45,964					18 55,490	
70 & over				2	11,284	4	11,272	3	11,284	1	11,236	1	62,645		11 15,944	
All ages	32	53,891	107	70,756	107	67,629	66	55,275	42	53,496	27	45,300	18	71,376	3 60,333 6 61,805 11 56,079 419	

City of Hartford MERF - Library

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

Attained Age	No.	Completed Years of Credited Service										All years Avg. Comp. No.	All years Avg. Comp. No.		
		Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and over				
Under 25	1	57,185													
25 to 29	1	52,702	1	56,539	1	52,200							3 53,814		
30 to 34	1	82,987	1	65,287	1	51,797	1	51,394					4 62,866		
35 to 39	1	64,928	2	76,309	2	52,855	1	55,045	1	58,508	1	50,831	8 60,955		
40 to 44				4	65,965	3	51,978	1	57,974	1	67,136	1 61,154	10 60,605		
45 to 49	1	67,760		2	70,763	1	54,563	3	70,099	1	50,618	3 53,800	11 62,379		
50 to 54	3	105,676	2	77,436	5	77,056			2	53,506	2	86,744	1 50,246	15 79,195	
55 to 59	2	65,525	2	84,918	3	66,445	2	81,949			1	62,780		10 72,690	
60 to 64	1	62,750	2	# #####	2	51,173				2	86,769	1 50,246		8 82,357	
65 to 69										1	50,246			1 50,246	
70 & over															
All ages	6	66,571	10	82,473	17	73,152	16	63,791	5	65,356	5	55,119	10 68,261	2 50,246	71

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City of Hartford MERF - All Groups

Number of Persons/Average Salary of Persons in Processing Group by Age and Years of Service

July 1, 2013

Attained Age	No.	Avg. Comp.	Completed Years of Credited Service										All years						
			Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and over	Avg. Comp.	No.	Avg. Comp.	No.			
Under 25	35	42,083	18	50,238	3	74,836	5	73,496	50,322	1	11,858					56	45,884		
25 to 29	67	45,364	72	57,019	70	73,496	5	70,322	1	11,858						215	58,666		
30 to 34	33	51,260	71	59,151	121	69,207	33	76,086	3	78,189	45,363					261	65,268		
35 to 39	24	49,228	59	53,628	99	70,254	63	73,017	44	77,049	6	77,493	2	81,487		297	66,932		
40 to 44	11	44,774	50	61,073	90	69,145	76	72,156	116	84,975	16	60,681	11	103,698	2	84,230	1	63,407	
45 to 49	9	52,619	40	59,702	66	59,600	79	67,244	98	77,835	33	68,161	26	79,370	3	98,834	67,383	7	63,794
50 to 54	14	65,284	40	63,551	66	65,915	52	54,448	73	59,891	30	57,269	29	86,215	11	89,873	2	70,950	
55 to 59	16	53,077	25	65,846	47	53,503	42	49,353	37	56,735	20	40,232	20	60,483	14	65,627	2	71,227	
60 to 64	7	58,481	14	68,397	30	57,340	27	55,586	26	53,394	15	51,974	11	59,260	6	53,772	6	48,551	
65 to 69	9	61,897	15	65,937	11	62,308	10	41,030	6	48,362	2	47,688	2	64,285	1	39,547	2	40,193	
70 & over	1	26,002	4	19,256	9	28,650	3	11,284	1	11,236	2	49,174	1	88,139	1	36,817		22	
All ages	217	48,672	386	58,878	614	66,192	394	64,345	411	71,671	127	57,350	103	77,014	39	75,675	12	55,339	
															21	65,898	2,324		

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Section II
Supporting Exhibits
(continued)

H. IRC Section 415(m) Valuation

The IRC Section 415(m) Fund* is an unfunded "excess benefit plan" to provide that portion of certain retirees' pension benefits that exceed the limits permitted under Section 415 of the Federal Internal Revenue Code (IRC).

	<u>July 1, 2013</u>	<u>July 1, 2012</u>
1. Number of retirees and beneficiaries receiving benefits	11	11
2. Annual benefits payable	\$94,000	\$111,000
3. Present value of benefits	\$360,000	\$431,000

The "actives" are funded through MERF. The City provides contributions for the retirees' benefits payable each year, as determined by the Pension Commission.

Actuarial Assumptions

The actuarial assumptions used in the 2013 Section 415(m) Fund valuation are as follows:

Mortality Basis:	RP-2000 Healthy Annuitants Table projected by Scale AA to valuation date with no adjustment and separate male and female rates.
Mortality Improvement:	Projected to date of decrement using Scale AA (generational mortality).
Termination:	N/A.
Salary Scale:	N/A.
Investment Return:	8.00% per year, net of investment expenses.
Assumed Retirement age:	Immediate as all are retired.
Increases in dollar limit on benefits under IRC Section 415:	3% per year.

Benefits

Retiree pension amounts in excess of IRC Section 415 limits. Benefits which do not exceed such amounts are payable from the City's MERF Plan. IRC Section 415 limits are assumed to increase annually and thus decrease the benefits payable from this Plan and increase the portion of the benefits payable from the City's MERF Plan.

*Section 415(m) Fund adopted by the Court of Common Council on March 24, 1997.

Section III

Actuarial Cost Methods and Assumptions

A. Actuarial Cost Methods

Asset Valuation Method – Actuarial Value of Assets

In order to smooth the year-to-year fluctuations in asset values, the asset values are adjusted by phasing in recognition of gains and losses over a five-year period. (Phase-in started July 1, 2003). Gains and losses are defined as the difference between the actual and the expected return on assets.

The July 1, 2009 valuation reflected a change in the asset valuation method from the use of a four-year smoothing period for gains and losses to the use of a five-year period. In the year of implementation of the change, the five-year smoothing methodology was retroactively applied to the gains and losses for previous years.

The assets held by the insurance companies include the funds on deposit for future purchase of annuities, as well as the reserves and contingency reserves for annuities already purchased which are subject to experience rating.

Actuarial Funding Method

The “Entry Age Normal Actuarial Cost Method” is used to determine plan liabilities. The Unfunded Actuarial Accrued Liability is amortized over 15 years using a level dollar, open period.

Since the MERF fund includes several classifications of members who have different provisions for benefits and contributions, it was necessary to apply this method by separate actuarial valuations for Police, Firefighters, Board of Education, Municipal Services, and Library participants.

This method was first used with the July 1, 2011 valuation. Previously the Aggregate Funding Method was used.

Section III

Actuarial Cost Methods and Assumptions

(continued)

B. Actuarial Assumptions

The actuarial assumptions used in the 2013 MERF valuation are as follows:

Mortality Basis:	For Police, Fire, Board of Education Corridor Supervisors and Building and Grounds Supervisors: <ul style="list-style-type: none">• Pre-retirement: RP2000 Employees Table – male and female rates, projected by Scale AA to valuation date with occupational (i.e., non-office worker, blue collar) adjustment.• Post-retirement: RP2000 Healthy Annuitants Table – male and female rates, projected by Scale AA to valuation date with occupational (i.e., non-office worker, blue collar) adjustment. No adjustment reflected for assumed future beneficiaries.• Disability: RP2000 Disabled Table – male and female rates.
	For All Other Groups: <ul style="list-style-type: none">• Pre-retirement: RP2000 Employees Table – male and female rates, projected by Scale AA to valuation date with no adjustment.• Post-retirement: RP2000 Healthy Annuitants Table – male and female rates, projected by Scale AA to valuation date with no adjustment.• Disability: RP2000 Disabled Table – male and female rates.
Mortality Improvement:	Pre and Post-retirement: Projected to date of decrement using Scale AA (generational mortality) Disability: None

Section III

Actuarial Cost Methods and Assumptions

(continued)

Termination:

Yearly Rates of Employee Termination – Police and Fire

<u>Age</u>	<u>Police</u>	<u>Fire</u>
20-24	4.0%	1.0%
25-29	3.0%	1.0%
30-34	2.5%	1.0%
35-39	2.0%	1.0%
40-44	1.0%	0.5%
45+	0.0%	0.0%

Yearly Rates of Employee Termination – Bd of Ed

<u>Age</u>	Years of Service					
	<1	1	2	3	4	5+
20-29	30.0%	30.0%	28.0%	25.0%	20.0%	15.0%
30-39	25.0%	25.0%	20.0%	18.0%	15.0%	9.0%
40-49	20.0%	17.0%	15.0%	12.0%	10.0%	8.0%
50-54	17.0%	15.0%	12.0%	10.0%	8.0%	6.0%
55+	9.0%	8.0%	8.0%	7.0%	6.0%	5.0%

Yearly Rates of Employee Termination – Munic. Svc. & Lib.

<u>Age</u>	Years of Service					
	<1	1	2	3	4	5+
20-29	27.0%	25.0%	22.0%	19.0%	17.0%	15.0%
30-39	20.0%	17.0%	15.0%	12.0%	10.0%	6.0%
40-49	15.0%	10.0%	9.0%	7.0%	6.0%	5.0%
50+	8.0%	7.0%	6.0%	5.0%	4.0%	3.0%

Section III

Actuarial Cost Methods and Assumptions (continued)

Investment Return: 8.00% per year, net of investment expenses.

Salary Scale: 3% for inflationary salary increases plus a percentage for promotion or merit increases as follows.

Yearly Rates of Increases for Promotion or Merit

<u>Age</u>	<u>Police</u>	<u>Fire</u>	<u>Bd of Ed</u>	<u>Munic. Svc. & Lib.</u>
25	6.60%	4.5%	4.40%	6.40%
30	4.80%	2.63%	3.70%	4.78%
35	2.65%	1.25%	3.35%	2.75%
40	1.45%	0.85%	2.50%	2.21%
45	1.10%	0.75%	1.40%	2.00%
50	1.00%	0.75%	0.85%	1.55%
55+	1.00%	0.75%	0.75%	1.25%

Salaries are adjusted for groups in negotiations by 3% per year for the period of each open contract, and non-bargaining groups by 3% per year for one full fiscal year from the measurement date. Any wage increases negotiated beyond the valuation date have been reflected in our projections.*

* *The following groups have future salary increases that have been negotiated and are reflected in this valuation:*

Firefighters
HMEA
Building and Grounds Supervisors
MLA
HESP
Paraprofessionals
HSSA
School Crossing Guards
Police

For Police, final average pay is loaded by a percentage for assumed private duty and overtime as follows: Pre-7/1/1999 hires: 43%; Post 7/1/1999 hires: 19% for employees remaining in the pre 2012 plan; 25% for employees moving to the 7/1/2012 plan.

Section III

Actuarial Cost Methods and Assumptions

(continued)

Assumed Retirement Age:

Retirement Rates: Police

Service	Age <50	Age >50
20	50.0%	30.0%
21-24	40.0%	25.0%
25-29	30.0%	15.0%
30+	100.0%	100.0%

100% retire at age 65, regardless of service; must be age 40 to retire

Retirement Rates: Fire

Age	Years of Service	
	20-24	25-29
45-49	2.5%	5.0%
50-54	5.0%	20.0%
55-59	10.0%	30.0%
60-64	25.0%	40.0%
65+	100.0%	100.0%

100% retire at 30 years of service for all ages

Retirement Rates: Board of Education

Age	Rate
55	10.0%
56-57	5.0%
58-61	10.0%
62-64	15.0%
65	40.0%
66-69	15.0%
70	100%

Retirement Rates: Municipal Services and Library

Age	<20 yrs svc or over age 65		+20 on yrs svc and under age 65
	Service		
55	15.0%	20	15%
56-59	7.5%	21	20%
60-64	15.0%	22	15%
65	30.0%	23-25	10%
66-74	15.0%	26-27	15%
75	100%	28	20%
		29	10%
		30	25%
		31-34	10%
		35	100%

Post 65 rates above used for all years of service.

Section III

Actuarial Cost Methods and Assumptions

(continued)

Social Security: Future tax wage bases are developed by projecting the 2013 base of \$113,700 forward at 4% per year.

Marital Status at Retirement: Non-Uniformed:
Males - 80% married, spouse 3 years younger.
Females - 60% married, spouse same age.

Uniformed:
All - 80% married, spouse 2 years younger.

Disability: Disability benefits were explicitly valued using the DP85 Class 1 Male and Female Disability Incidence Rate Table increased 150% for the Police, 250% for Firefighter groups, 10% for the Board of Education groups, and 10% for the Municipal Services and Library groups.

*DP85 Class 1 Disability Incidence Table:
Sample male and female rates*

<u>Age</u>	<u>Male</u>	<u>Female</u>
15	0.021%	0.023%
20	0.029%	0.030%
25	0.038%	0.047%
30	0.048%	0.080%
35	0.069%	0.136%
40	0.117%	0.211%
45	0.202%	0.323%
50	0.358%	0.533%
55	0.722%	0.952%
60	1.256%	1.159%
65	1.753%	1.358%

Expenses other than Investment Expenses: An explicit dollar amount was included in the development of the normal cost equal to an estimate of expenses (other than investment expenses) for the upcoming year. The estimate was developed based on an average of actual expenses over the last four years. For the 2013 valuation, \$22,522,073 was used. Estimated expenses were then allocated to the various groups by the actuarial accrued liability.

Section III

Actuarial Cost Methods and Assumptions

(continued)

Sick Exchange: Four years are exchanged by all actives if provision available. For Firefighters hired prior to July 1, 2003, six years are exchanged.

Military and Prior Service
Buy-backs: When a decision to buy-back service occurs, date of hire is adjusted accordingly.

Additional Liabilities: **COLAs:**
Included in this valuation is the liability for the Cost of Living Adjustments (COLAs) effective July 1, 1987, July 1, 1990, July 1, 1997, July 1, 1999, July 1, 2001, July 1, 2005, and July 1, 2007 for both the MERF and the unfunded "Old Plans" (PBF, FRF, and RAF).

Local 1716:

Included in this valuation is the obligation for Local 1716 members who transferred to State MERF B on July 1, 1987.

29-year amortization payments (split between the City administration and the pension fund) commenced July 1, 1987 for this obligation. As of July 1, 2013, the City payment will be \$509,126 (\$1,417,000 on a present value basis) and the pension fund payment will be \$462,336 (\$1,287,000 on a present value basis).

Local 566:

Included in this valuation is the obligation for Local 566 (included merged Local 1303) members who transferred to State MERF B on August 1, 1988.

30-year amortization payments (split between the City administration and the pension fund) commenced August 1, 1988 for this obligation. As of July 1, 2013, the City payment will be \$303,918 (\$1,517,000 on a present value basis) and the pension fund payment will be \$276,288 (\$1,380,000 on a present value basis).

Section IV

Hartford MERF - Summary of Principal Provisions of Pension Plan July 1, 2013

PROVISIONS FOR:

Retirement Pensions:

<u>POLICE OFFICERS AND FIREFIGHTERS</u>	<u>BOARD OF EDUCATION MEMBERS</u>	<u>MUNICIPAL SERVICES & LIBRARY MEMBERS</u>
Firefighters hired before July 1, 2003: 2.80% of Final Average Pay (rate of weekly pay immediately preceding retirement times 52, plus for firefighters who work a 42 hour week, holiday pay) multiplied by years of service up to 25 plus 2.0% for years over 25.	2% (2.5% for HFSHP, HSSSA and HESP) of Final Average Pay for highest 5 of last 10 years times years of service, with maximum benefit of 70% of Final Average Pay. Final Average Pay for HFSHP, HESP, HSSSA, and Local 2221, Hartford Federation of Paraprofessionals are based on highest 3 out of last 5 years. Benefit for Local 2221 is 2.5% of Final Average Pay multiplied by years of service up to 20 plus 2% of Final Average Pay for years of service over 20 (maximum of 10 years).	For Library and MLA hired on or after July 1, 2006, HMEA hired after July 1, 2003, CHPEA hired after June 23, 2003, 2% of Final Average Pay for highest 2 of last 5 years times years of service with a maximum benefit of 70% of Final Average Pay. For Library with 5-year option, Final Average Pay is highest 5 of last 10 years.
Firefighters hired after June 30, 2003: 2.5% of Final Average Pay (rate of weekly pay immediately preceding retirement times 52, plus for firefighters who work a 42 hour week, holiday pay) multiplied by years of service up to 20 plus 2% of Final Average Pay for years of service over 20.	Effective July 1, 2008 for Local 818, employees hired prior to March 1, 2007 will get 2.5% of Final Average Pay (for each year of service) and employees hired after March 1, 2007 will get 2.0%. Final Average Pay is the highest 3 of the 7 years. Maximum benefit is 70% of pay.	For CHPEA hired on or before June 23, 2003, MLA hired before July 1, 2006, and Nonbargaining, 2.5% of Final Average Pay for highest 2 of last 5 years times years of service.
Sworn Police Officers hired before July 1, 1999: 2.65% of Final Average Pay for highest 3 of last 5 years multiplied by years of service up to 20 plus 3% for year 21 plus a decreasing percentage for years over 21. Final Average Pay includes a provision for over-time and private duty pay.	Nonunion employees hired after September 30, 2010 no longer participate in the MERF.	Maximum benefit of 70% of Final Average Pay for CHPEA, 80% for Nonbargaining and MLA. For Nonbargaining with 5-year option, Final Average Pay is highest 5 of last 10 years.
Sworn Police Officers hired after June 30, 1999 not opting into 2012 plan: 2.5% of Final Average Pay for highest 3 of last 5 years times years of service up to 20 plus 2% for years of service- over 20. Final Average Pay includes a provision for over-time and private duty pay.	190	For Nonbargaining municipal employees hired after January 1, 2011 and MLA employees hired after November 26, 2012, retirement benefit multiplier is reduced to 1.75%.
Sworn Police Officers hired after the July 1, 2012 and officers hired after June 30, 1999 opting into new Plan: 2.8% of final rate of pay times years of service up to 25 years plus 2.5% for years of service over 25. Final Average Pay includes a provision for over-time.		For HMEA hired before July 1, 2003, 2.75% of Final Average Pay for highest 2 of last 5 years times years of service with a maximum benefit of 75% (was 70%) of Final Average Pay.
		For SCGA, 2% of Final Average Pay for highest 5 of last 10 years reduced by 1% of average Social Security covered earnings for all years included in computation of Social Security primary benefits. Maximum benefit of 100% of Final Average Pay.

MUNICIPAL SERVICES & LIBRARY

MEMBERS

POLICE OFFICERS AND FIREFIGHTERS

PROVISIONS FOR:

Retirement Pensions:

Non-Sworn Police Officers: 2.5% of Final Average Pay for highest 3 of last 5 years times years of service, with maximum benefit of 80% of Final Average Pay.

Sworn Police Officers have a maximum benefit of 70% of Final Average Pay. For Sworn Police Officers hired before July 1, 1999 and after July 1, 2012 or hired between July 1, 1999 and June 30, 2012 opting into 2012 plan, increase maximum benefit to 80% of Final Average Pay with sick exchange provision for pre July 1, 1999 hires only. Firefighters have a maximum benefit of 80% of Final Average Pay (85% with sick exchange if hired prior to July 1, 2003).

Assistant Police Chief, Police Chief, Assistant Fire Chief and Fire Chief: Same as Non-Bargaining.

Normal Form of Benefit:

For unmarried members: life annuity.
For married members: surviving spouse benefit of 25% of member's final year's earnings, if non-service connected death, and 50% of member's final year's earnings, if service connected death. Minimum of 50% of pension benefit for firefighters for non-service connected death.

For married Non-Sworn Police Officers: life annuity with 50% to survivor.

For unmarried members: life annuity.
For married members: life annuity with 50% to survivor.

For married members: life annuity with 50% to survivor.

<u>PROVISIONS FOR:</u>	<u>POLICE OFFICERS AND FIREFIGHTERS</u>	<u>BOARD OF EDUCATION MEMBERS</u>	<u>MUNICIPAL SERVICES & LIBRARY MEMBERS</u>
<u>Normal Retirement Age and Service Requirement:</u>	<p>Firefighters and Sworn Police Officers hired before July 1, 1999: Full benefits after 20 years of continuous service.</p> <p>Sworn Police Officers hired after June 30, 1999: Full benefits after 25 years of continuous service.</p> <p>Sworn Police Officers hired after June 30, 2012, full benefits after 25 years of continuous service and age 55.</p> <p>Non-Sworn Police Officers: Full benefits after 20 years of service, or age 60 plus 5 years of continuous service, or after 15 years of service, if contributions are left in the MERF until would have had 20 years of service.</p>	<p>Age 60 plus 10 (5 for non-bargaining – was 10) years of service (continuous service for Local 2221). Members are also eligible at age 55 with 25 years of service.</p> <p>Local 818 employees hired prior to March 1, 2007 may retire after 20 years of service, regardless of age. For HSSSA, age 55 and 5 (was 10) years of service.</p>	<p>For SCGA and MLA hired on or after July 1, 2006, earlier of (1) age 60 plus 5 years of continuous service or (2) age 55 with 25 years of continuous service.</p> <p>For Nonbargaining and MLA hired prior to July 1, 2006, earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of service, or (3) after 20 years of service if participant leaves after 15 years of service and contributions are left in the MERF until would have had 20 years of service.</p> <p>For CHPEA, earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of aggregate service if hired on or before June 23, 2003, age 55 with 25 years of aggregate service if hired after June 23, 2003.</p> <p>For HMEA earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of continuous service if hired before July 1, 2003, age 55 with 25 years of continuous service if hired after July 1, 2003.</p> <p>For Library non union, earlier of (1) age 60 plus 5 years of continuous service or (2) 25 years of continuous service.</p> <p>For Library union, (1) age 60 plus 10 years of continuous service or (2) 25 years of continuous service.</p> <p>For Nonbargaining municipal employees hired after January 1, 2011, earlier of age 55 with 20 years of service and age 62 with 5 years of service.</p>

<u>PROVISIONS FOR:</u>	<u>POLICE OFFICERS AND FIREFIGHTERS</u>	<u>BOARD OF EDUCATION MEMBERS</u>	<u>MUNICIPAL SERVICES & LIBRARY MEMBERS</u>
<u>Optional Early Retirement:</u>	Sworn Police Officers: Age 50 with 10 years of continuous service, actuarially reduced for years prior to Normal Retirement Age. Non-Sworn Police Officers: Age 55 with 5 years of continuous service, reduced at 4% per whole year prior to age 60.	At age 55 with 10 years (5 years for HESP) of service (continuous service for Local 2221), reduced at 4% per whole year prior to age 60. For Local 818, reduction is adjusted for partial years.	For Library union, age 55 with 10 years of continuous service. For all others, age 55 with 5 years of continuous service. Benefit reduced at 4% per whole year prior to age 60 (prorate for partial years for HMEA and CHPEA). For SCG members, reduction is 2% per whole year and fraction of a year prior to age 60.
<u>Vesting of Earned Deferred Pension:</u>	Firefighters: Age 50 with 5 years of continuous service, actuarially reduced or reduced at 2% per year (prorated for fractional years) prior to Normal Retirement Age.	After 10 years (5 years for HESP, HSSSA and non-bargaining) of continuous service. Payments begin no earlier than age 55. (Was 10 years for HSSSA and non-bargaining).	For Nonbargaining municipal employees hired after January 1, 2011, early retirement reduction is 4% per year prior to age 62.
<u>Benefits to Survivors:</u> <u>(Death of Active Member Prior to Retirement)</u>	Sworn Police Officers: After 10 years of continuous service.	After 10 years (5 years for HESP, HSSSA and non-bargaining) of continuous service. Payments begin no earlier than age 55. (Was 10 years for HSSSA and non-bargaining).	Member must meet qualifications for vesting. Surviving Spouse: 50% of pension which Member is receiving or would be entitled to when retired, payments beginning no earlier than date of Member's 55th birthday. Surviving Spouse benefits are payable until death or remarriage.
<u>Widow</u>	Surviving Spouse: 25% of final year's earnings (50% if service connected death), payable until death or remarriage. Minimum of 50% of pension benefit for Firefighters for non-service connected death. Surviving Child: \$100 per month for first child, \$50 for each additional child (10% of final year's earnings if service connected death, or 15% if no surviving spouse). Total benefit, including Worker's Compensation, cannot exceed 100% of current pay rate for Member's rank. Non-Sworn Police Officers: Same as General Government members.		

<u>PROVISIONS FOR:</u>	<u>POLICE OFFICERS AND FIREFIGHTERS</u>	<u>BOARD OF EDUCATION MEMBERS</u>	<u>MUNICIPAL SERVICES & LIBRARY MEMBERS</u>
<u>Refund of Contributions upon Discontinuance of Employment or at Death (Non-Vested Members):</u> (May be taken in lieu of earned deferred pension by vested members)	Refund of total contributions, without interest. Non-Sworn Police Officers: Same as General Government members.	Termination: Refund of total contributions, with 3% interest compounded annually. Death: Refund of total contributions with interest preretirement and without interest postretirement.	Termination: Refund of total contributions, with 3% interest compounded annually. Death: Refund of total contributions with interest preretirement and without interest postretirement.
<u>Pensions for Permanent Total Disability - Service Requirements:</u>	5 years of continuous service, but no requirement if disability is service connected as defined in Worker's Compensation Act.	10 years of continuous service, except no requirement if disability is service connected as defined in Worker's Compensation Act.	10 years of continuous service, except no requirement if disability is service connected as defined in Worker's Compensation Act.
<u>Amount of Total Disability Pension:</u> (Payable so long as total disability continues.)	Retirement Pension with minimum of 25% of "final average pay." If disability is service connected, the pension equals 100% of the Member's final annual pay less Worker's Compensation benefits.	Retirement Pension using Final Average Pay for last 10 years. If disability is service connected, amount not less than 50% of Member's final annual pay at time of disability. Maximum benefit of 2/3 of 10-year Final Average Pay less Social Security benefit. Minimum benefit of \$30 per month. All service connected disability benefits are offset by benefits payable by Worker's Compensation (exception: no offset for \$30 minimum).	Retirement Pension using Final Average Pay for last 10 years. If disability is service connected, amount not less than 50% of Member's final annual pay at time of disability. Maximum benefit of 2/3 of 10-year Final Average Pay less Social Security benefit. Minimum benefit of \$30 per month. All service connected disability benefits are offset by benefits payable by Worker's Compensation (exception: no offset for \$30 minimum).
<u>Pensions for Permanent Partial Disability:</u> (Where earnings capacity is reduced by at least 10%)	Non-Sworn Police Officers: Same as General Government members. Ten years of continuous service, but no service requirement if disability is service connected. Same as retirement pension with reduction for less than 15 years of service. If non-service connected, retirement pension, subject to a minimum equal to 25% of Final Average Pay. This minimum is reduced by earnings if less than 15 years of service at time of disability. If service connected, pension equals 50% of final annual pay (regular 20 year pension for Firefighters) if 15 years of service, with reductions for earnings if less than 15 years of service. If at least 20 years of service, pension equals retirement pension.	Non-Sworn Police Officers: Same as General Government members. Ten years of continuous service, but no service requirement if disability is service connected. Same as retirement pension using Final Average Pay for last 10 years (with offset for Worker's Compensation benefits if service-related disability), subject to a minimum pension of \$10 monthly (non-service connected), or \$30 (service connected). If the disability is service connected, benefit not less than 50% of the reduction in earnings with offset for Worker's Compensation benefits. For service connected disability, the maximum benefit is 2/3 of 10 year final average pay less Worker's Compensation and Social Security benefits. For non-service connected disability, the maximum is 2/3 of 10 year final average pay less Social Security benefits, or 1-2/3% of the reduction in income times years of service.	Non-Sworn Police Officers: Same as General Government members.

<u>PROVISIONS FOR:</u>	<u>POLICE OFFICERS AND FIREFIGHTERS</u>	<u>BOARD OF EDUCATION MEMBERS</u>	<u>MUNICIPAL SERVICES & LIBRARY MEMBERS</u>
<u>Member's Contribution Rate of Total Earnings:</u> (City pays full balance of costs to fund MERF benefits; also Members and City pay taxes for those covered by Social Security.)	Firefighters and Sworn Police Officers hired before July 1, 1999: 8%. Sworn Police Officers hired after June 30, 1999: 6.5%. If opt into 2012 plan, rate increases to 8.0%. Sworn Police Officers hired after June 30, 2012, 9.5% Non-Sworn Police Officers: 4% on earnings taxed for Social Security and 7% on excess.	4% on earnings taxed for Social Security and 7% on excess. For HESP, 9% and 12%, respectively. For HSSSA, 9.25% and 12.25%, respectively (was 8.75%/11.75%). For HFSSH 10.14% and 13.14%, respectively. For Non-bargaining 4.5% and 7.5%, respectively (was 4%/7%). For Local 818, 5.2% up to Social Security Wage Base and 8.2% of the excess. If hired on or after March 1, 2007, 7.1% and 10.1%, respectively.	For Nonbargaining, 5% on earnings taxed by Social Security and 8% on excess if 5 year Final Average Pay option elected (was 4%/7%). With 2 year option, 6% and 9%, respectively (was 5%/8). For Library, 4% on earnings taxed by Social Security and 7% on excess if 5 year Final Average Pay option elected. With 2 year option, 5% and 8%, respectively.

- Note 1 Any Member (other than a Police Officer or Firefighter) who was a Member before January 1, 1958 is guaranteed a minimum total benefit, including Social Security based on earnings from the City, equal to the pension the Member would have received under the terms of the MERF plan in existence prior to the enactment of the 1957 Special Act No. 347. Also, several active Members who transferred to MERF on or after July 1, 1968 from the City's Retirement Allowance Fund are entitled to a pension determined by the RAF provisions if it is greater than that based on the MERF provisions.
- Note 2 Section 2-166 of the Municipal Code provides a minimum benefit of \$155 monthly for all pensions granted by reason of service or for service-connected disability, and for joint annuitants under elected options, except members for whom Social Security taxes have been paid and anyone for whom more than half of the total pension is paid by the Metropolitan District.
- Note 3 All members (other than SCG) may purchase up to 4 years of pension credit for military service. Pension credit is at the following rates of Final Average Pay per year purchased:
- | | |
|--|-------|
| HMEA members hired before July 1, 2003 | 2.75% |
| Sworn Police Officers, Firefighters, CHPEA members hired on or before June 23, 2003, HFSHP, Local 818 hired prior to March 1, 2007, HSSSA, HESP, Non-bargaining (including Assistant Police Chief, Police Chief, Assistant Fire Chief, and Fire Chief), Non-Sworn Police Officers, and MLA hired prior to July 1, 2006 | 2.50% |
| Other (including CHPEA members hired after June 23, 2003, HMEA members hired prior to July 1, 2003, MLA hired on or after July 1, 2006, and Local 818 hired on or after March 1, 2007) | 2.00% |
- 196
- Note 4 All members (other than Sworn Police Officers hired after July 1, 1999, all Board of Education members, CHPEA hired after June 23, 2003, HMEA hired on or after July 1, 2003, Library, SCG and MLA hired on or after July 1, 2006, Nonbargaining municipal members hired after January 1, 2011) may exchange accumulated sick leave upon retirement for up to 4 years (6 years for Firefighters hired prior to July 1, 2003) of pension service time. Additional pension service time may be purchased from accumulated sick leave at the rate of twenty days of accumulated sick leave for each year of pension service time.

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**CITY OF HARTFORD MERR
Consulting on Funding Options**

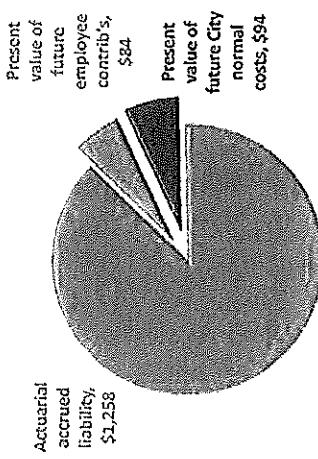
Presented by
Rebecca A. Sielman, FSA
April 16, 2014

 **Milliman**

CITY OF HARTFORD MERV - Actuarial Balance Sheet as of July 1, 2013

Step 1 - determine value of benefits payable from plan Present value of projected benefits	1,437	
Step 2 - allocate to past and future years of service Actuarial accrued liability Present value of future employee contrib's Present value of future City normal costs		1,437
		1,258

Present value of projected benefits, \$1,437



Step 3 - how much of actuarial accrued liability is already funded?

Actuarial value of assets	963
Unfunded accrued liability	295
	1,258

Step 4 - determine how each piece will be funded

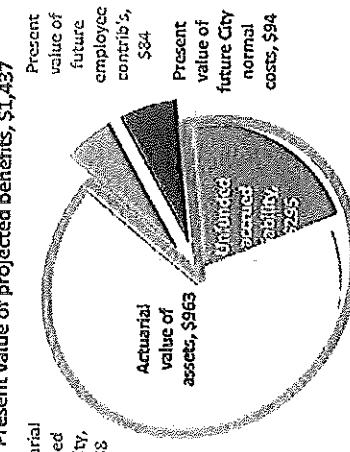
Present value of future employee contrib's	
Present value of future City normal costs	
Unfunded accrued liability	

→ annual contributions from active members

→ City contributes the normal cost each year

→ City pays in installments ("amortizes") over a number of years

Step 5 - how much of actuarial accrued liability is unfunded?



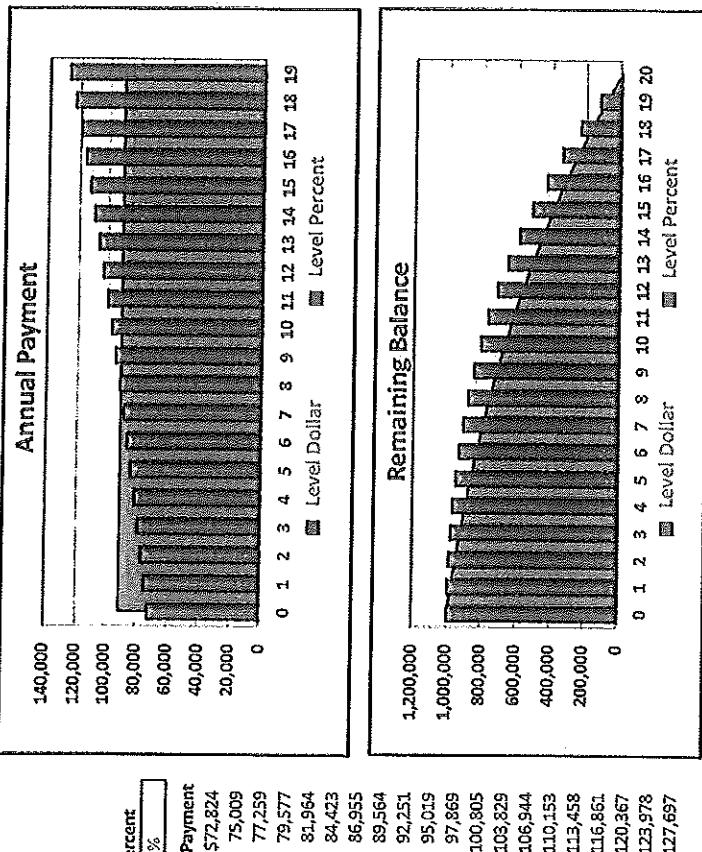
We have relied on the valuation results and actuarial methods and assumptions used by Holter & Holcombe in their July 1, 2013 actuarial valuation report. We make no judgment as to the appropriateness of their actuarial methods or assumptions or the accuracy of their calculations. This work product was prepared solely for the City 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 advised by their own actuary or other qualified professional when reviewing the Milliman work product.

CITY OF HARTFORD MERF - Amortization Methods

Initial Balance	\$1,000,000
Interest Rate	7.50%
Amortization Period	20

Amortization Growth Rate	0.00%
Year	Balance
0	\$1,000,000
1	976,507
2	952,083
3	925,398
4	886,710
5	855,871
6	832,720
7	797,081
8	758,770
9	717,585
10	673,312
11	625,719
12	574,555
13	529,555
14	480,429
15	396,870
16	323,543
17	255,091
18	176,131
19	91,248
20	0

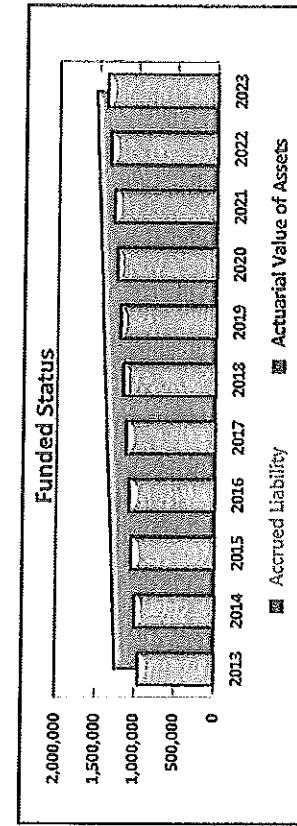
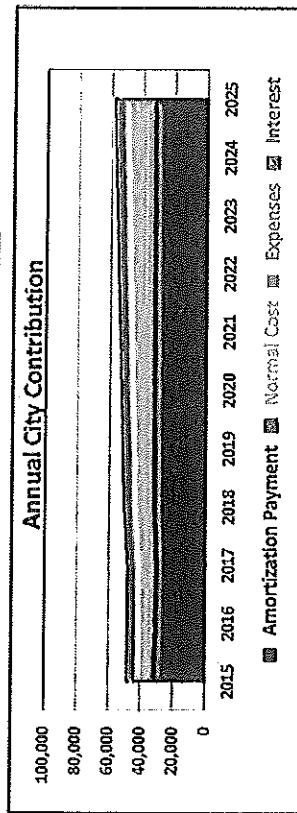
Amortization Growth Rate	3.00%
Year	Payment
0	\$51,249
1	91,248
2	91,248
3	91,249
4	91,249
5	91,248
6	91,249
7	91,248
8	91,249
9	91,248
10	91,248
11	91,249
12	91,248
13	91,249
14	91,248
15	91,249
16	91,248
17	91,248
18	91,249
19	91,248
20	0



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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	8.00%
Actual Return on Assets	8.00%
Amortization Growth Rate	0.00%
Amortization Period	15
Minimum Period	1



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Appendix K

MILLIMAN PROJECTIONS MAY 7, 2014

Memo from Becky Sielman, Milliman, April 21, 2014 with Attachments

Gentlemen –

Per your request, I expanded the projection model to go out 25 years, and created printouts of the 36 scenarios.

As I discussed last week, the purpose of our projection model is to illustrate the long-range impact of changes in the amortization process and in the interest rate assumption. To facilitate that illustration process, we assume that all other aspects of the pension plan's finances exactly follow the actuarial assumptions. Of course we know that the plan's assets will not always earn exactly a particular rate of return year in and year out, and it is extremely unlikely that there will be no changes in the plan provisions or the actuarial methods and assumptions, and so forth. In addition, because we are not the plan's actuaries but are merely building on top of Hooker & Holcombe's calculations, our projections should be considered quite approximate in nature. Please keep in mind as you look at the projection results that they are merely illustrative – what is important is the direction of the numbers under one scenario versus another, not the absolute size of the respective numbers.

You've posed a number of additional questions about the amortization growth rate. I think it would be helpful to forget that you ever heard the term "level percent of payroll amortization" and focus instead on "level percent amortization". The idea is that with level percent amortization, the amortization payment portion of the City's pension contribution will by design go up each year rather than by design remain a flat dollar amount. The choice of amortization growth rate comes down to what rate of increase will be manageable for the City over time, given Hartford's financial structure. As I mentioned, a fast-growing municipality might be comfortable with a somewhat higher rate of increase in their pension costs, whereas a mature municipality like Hartford is likely to be burdened by increases of 3% or more. And if your collective feeling is that Hartford's revenues will be flat or decreasing over the next 15-20-25 years, then it might make sense to stick with level dollar amortization rather than committing to increasing pension contributions that will make matters worse rather than better over the longer term. To answer the specific questions:

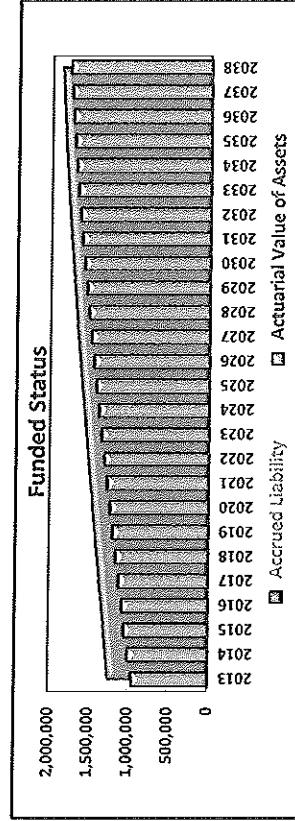
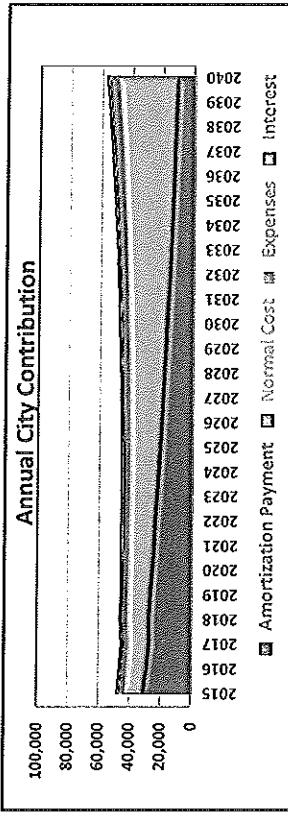
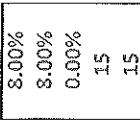
- What does the amortization growth rate mean in terms of back loading the funding of pension liabilities? Level percent amortization produces more back loading than level dollar amortization – the City would be contributing less now and more later – and the higher the amortization growth rate the more pronounced the back loading.
- Are 2% and 3% reasonable rates? What would be unreasonable? Per my discussion above, I don't believe that Hartford's situation would warrant a growth rate above 3%; 2% would be more conservative. 4% would be unreasonably high in my opinion.
- How is the amortization growth rate connected to changes in employment levels, inflation, wage growth, etc.? Only indirectly, which is why I stay away from the term "level percent of payroll amortization". All of the factors mentioned are important in assessing the City's long-term ability to afford its pension contributions, along with the City's debt structure, growth in healthcare costs, the general economic climate, future infrastructure investment, urban revitalization efforts such as the iQuilt plan, and so on. As you correctly suggest, the City should not make a decision that "could come back to bite it on the behind" by committing the City to an unsustainable rate of pension contribution increases.

Please let me know if you have any questions, comments, concerns, requests for more scenarios, etc.

CITY OF HARTFORD MERV - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

8.00%
8.00%
0.00%
1.5
1.5



FYE	Annual City Contribution					Old Plan Offsets	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
	Amort. Payment	Normal Cost	Expenses	Interest	Interest					
2015	\$31,500	12,484	2,522	1,840	(\$87)	47,751	2013	1,258,182	963,269	76.6%
2016	30,028	13,132	2,508	1,792	46,474	2014	1,235,399	1,007,813	78.4%	
2017	28,228	13,844	2,402	1,745	45,232	2015	1,314,213	1,053,265	80.1%	
2018	28,364	14,489	2,442	1,777	46,534	2016	1,343,986	1,081,784	80.5%	
2019	27,378	15,164	2,515	1,768	46,347	2017	1,375,268	1,122,183	81.6%	
2020	26,332	16,014	2,580	1,763	46,221	2018	1,403,140	1,159,718	82.7%	
2021	25,344	16,834	2,668	1,759	46,421	2019	1,431,809	1,197,615	83.6%	
2022	24,469	17,657	2,748	1,757	46,357	2020	1,460,415	1,235,141	84.6%	
2023	23,405	18,407	2,830	1,751	46,220	2021	1,489,421	1,275,054	85.5%	
2024	22,465	19,236	2,915	1,752	46,244	2022	1,520,030	1,312,355	86.3%	
2025	21,573	20,228	3,003	1,758	46,388	2023	1,546,059	1,346,660	87.1%	
2026	20,722	21,242	3,093	1,768	46,651	2024	1,573,043	1,381,487	87.8%	
2027	19,908	22,279	3,186	1,780	46,979	2025	1,600,302	1,416,265	88.5%	
2028	19,126	23,285	3,281	1,791	47,279	2026	1,627,839	1,454,937	89.1%	
2029	18,363	24,272	3,380	1,805	47,546	2027	1,655,482	1,485,727	89.8%	
2030	17,631	25,353	3,481	1,823	48,114	2028	1,679,034	1,516,107	90.3%	
2031	16,931	26,491	3,585	1,844	48,577	2029	1,702,743	1,546,229	90.8%	
2032	16,261	27,682	3,689	1,869	49,331	2030	1,727,298	1,577,981	91.3%	
2033	15,613	28,925	3,804	1,897	50,070	2031	1,750,984	1,606,608	91.8%	
2034	15,001	30,223	3,918	1,928	50,856	2032	1,773,686	1,634,992	92.2%	
2035	14,409	31,577	4,036	1,962	51,510	2033	1,795,189	1,663,997	92.6%	
2036	13,841	32,990	4,157	2,000	52,314	2034	1,815,421	1,687,475	93.0%	
2037	13,295	34,464	4,281	2,042	53,308	2035	1,834,161	1,711,265	93.3%	
2038	12,770	36,002	4,410	2,086	55,094	2036	1,853,230	1,733,182	93.6%	
2039	12,266	37,568	4,562	2,135	56,377	2037	1,886,423	1,753,056	93.9%	
2040	11,731	39,283	4,678	2,187	57,755	2038	1,879,518	1,770,612	94.2%	

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Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

MILLIMAN PROJECTIONS MAY 7, 2014

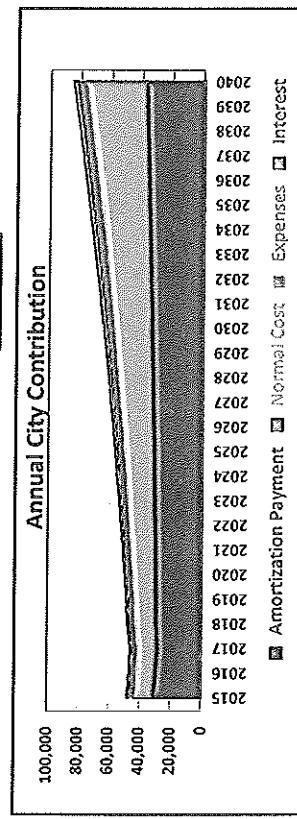
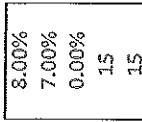
Appendix K

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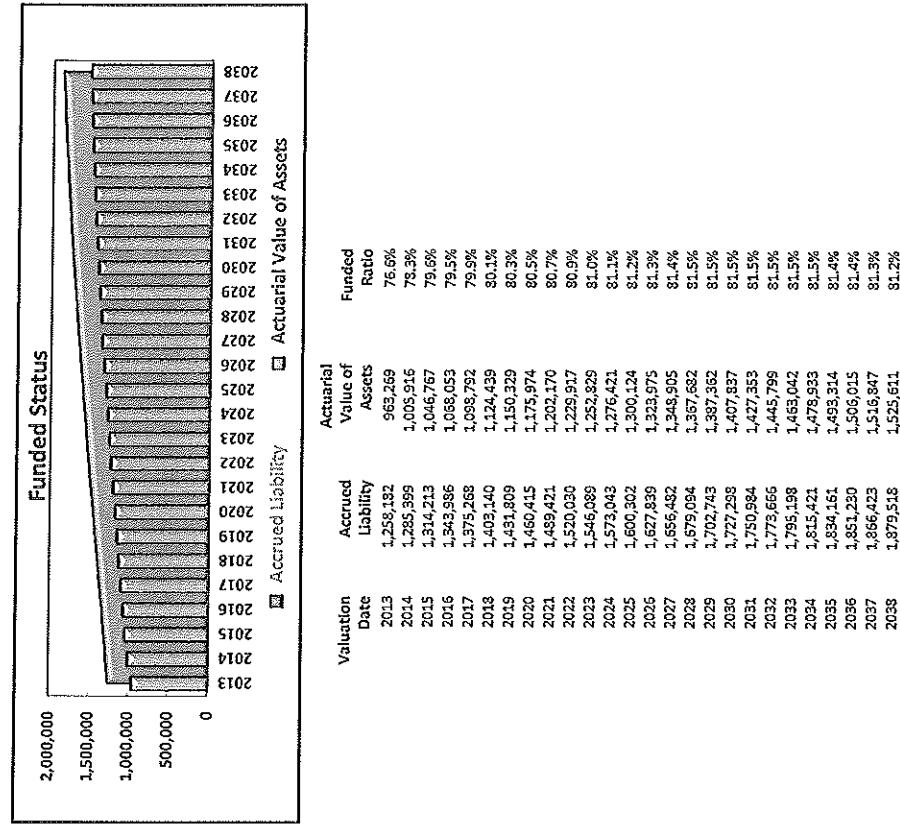
CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

8.00%
7.00%
0.00%
15
15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains/losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

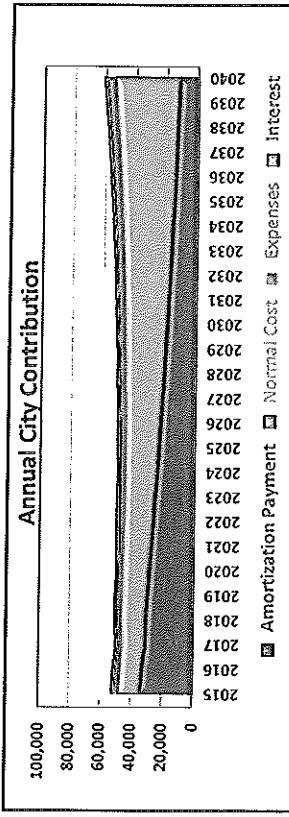
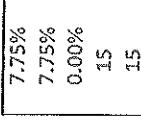


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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

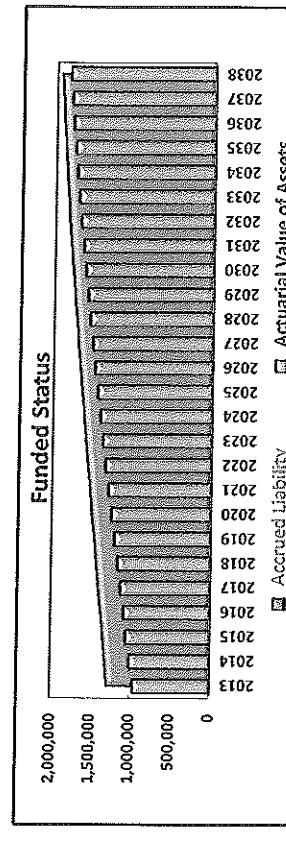
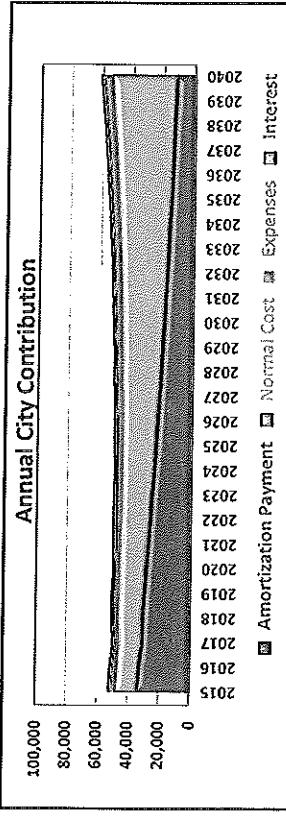
7.75%
7.75%
0.00%
15
15



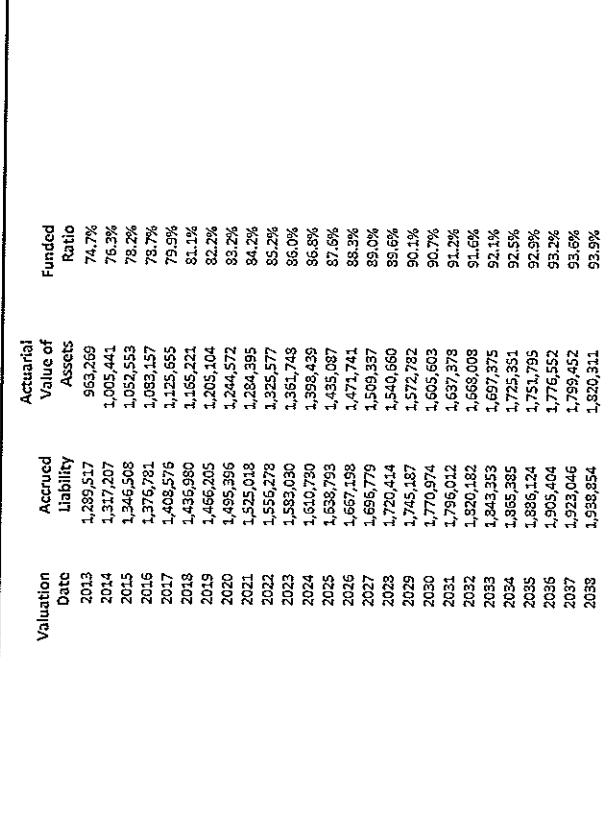
Annual City Contribution				
FYE	Amort. Payment	Normal Cost	Interest	Old Plan Offsets
2015	\$4,835	\$13,589	\$2,522	(\$84)
2016	\$5,289	\$14,280	\$2,595	\$1,904
2017	\$5,833	\$15,038	\$2,402	\$1,857
2018	\$6,352	\$15,730	\$2,442	\$1,833
2019	\$6,919	\$16,455	\$2,515	\$1,870
2020	\$7,548	\$17,356	\$2,580	\$1,952
2021	\$8,240	\$18,229	\$2,668	\$1,855
2022	\$8,982	\$19,108	\$2,748	\$1,744
2023	\$9,773	\$19,015	\$2,830	\$1,842
2024	\$10,606	\$19,954	\$2,915	\$1,841
2025	\$11,474	\$20,628	\$2,859	\$1,844
2026	\$12,377	\$22,398	\$3,033	\$1,832
2027	\$13,311	\$24,042	\$3,156	\$1,833
2028	\$14,272	\$25,083	\$3,281	\$1,872
2029	\$15,257	\$26,738	\$3,380	\$1,885
2030	\$16,264	\$15,194	\$27,335	\$1,902
2031	\$17,291	\$18,409	\$28,552	\$1,922
2032	\$18,335	\$17,658	\$29,225	\$1,946
2033	\$19,404	\$16,938	\$31,154	\$1,973
2034	\$20,494	\$32,540	\$32,540	\$2,004
2035	\$21,597	\$33,987	\$33,987	\$2,039
2036	\$22,712	\$35,496	\$35,496	\$2,076
2037	\$23,843	\$37,070	\$37,070	\$2,118
2038	\$25,000	\$38,712	\$38,712	\$2,163
2039	\$26,177	\$40,426	\$40,426	\$2,212
2040	\$27,373	\$42,213	\$42,213	\$2,264

Interest Rate Assumption

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



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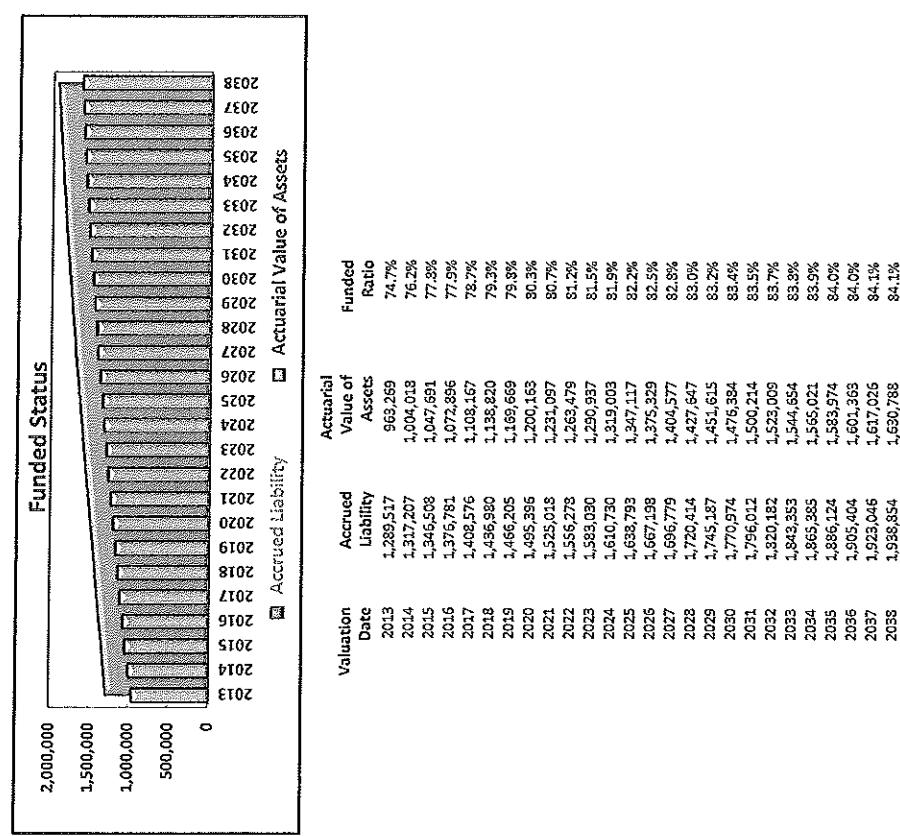
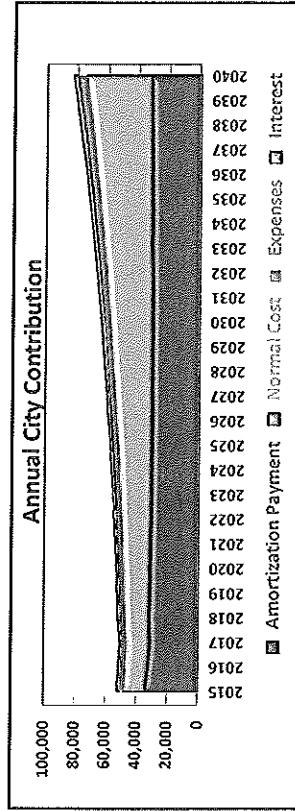


Annual City Contribution	City Contrib.	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
FYE	Old Plan Offsets	Date	Liability	Assets	Ratio
2015	(\$84)	2013	\$1,289,517	\$963,269	74.7%
2016	\$1,904	2014	\$1,327,207	\$1,005,441	76.3%
2017	\$1,857	2015	\$1,346,508	\$1,052,553	78.2%
2018	\$1,833	2016	\$1,376,781	\$1,083,157	78.7%
2019	\$1,870	2017	\$1,408,576	\$1,125,655	79.9%
2020	\$1,952	2018	\$1,455,980	\$1,165,221	81.1%
2021	\$1,855	2019	\$1,466,205	\$1,205,104	82.2%
2022	\$1,744	2020	\$1,495,356	\$1,244,572	83.2%
2023	\$1,842	2021	\$1,525,018	\$1,284,395	84.2%
2024	\$1,744	2022	\$1,555,278	\$1,325,577	85.2%
2025	\$1,841	2023	\$1,583,030	\$1,365,748	86.0%
2026	\$1,744	2024	\$1,610,730	\$1,398,439	86.8%
2027	\$1,844	2025	\$1,638,793	\$1,425,087	87.6%
2028	\$1,744	2026	\$1,667,198	\$1,471,741	88.3%
2029	\$1,844	2027	\$1,695,779	\$1,509,397	89.0%
2030	\$1,744	2028	\$1,720,414	\$1,540,660	89.6%
2031	\$1,844	2029	\$1,745,287	\$1,572,732	90.1%
2032	\$1,744	2030	\$1,770,974	\$1,605,503	90.7%
2033	\$1,844	2031	\$1,796,012	\$1,637,378	91.2%
2034	\$1,744	2032	\$1,820,82	\$1,668,008	91.6%
2035	\$1,844	2033	\$1,843,533	\$1,697,375	92.1%
2036	\$1,744	2034	\$1,865,385	\$1,725,351	92.5%
2037	\$1,844	2035	\$1,886,124	\$1,751,795	92.9%
2038	\$1,744	2036	\$1,905,404	\$1,776,552	93.2%
2039	\$1,844	2037	\$1,923,046	\$1,799,452	93.6%
2040	\$1,744	2038	\$1,938,354	\$1,820,341	93.9%

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

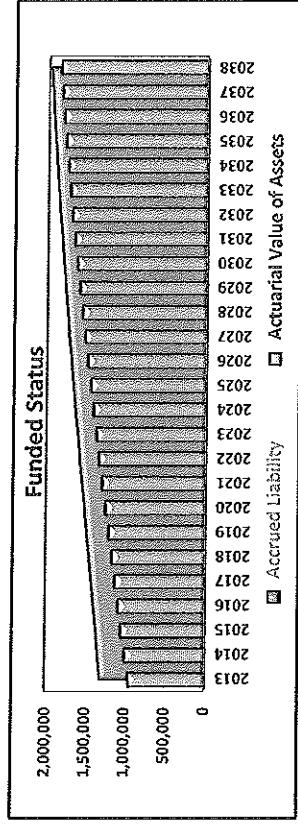
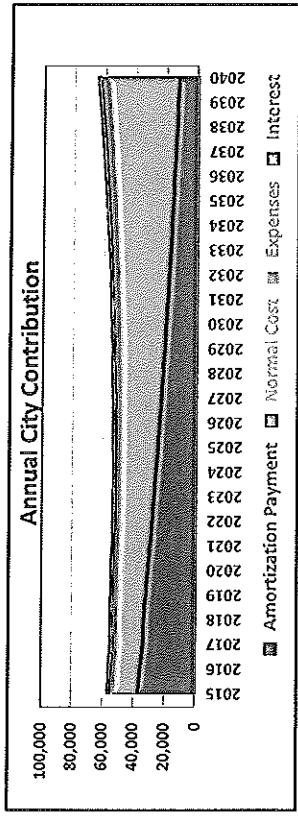
Interest Rate Assumption	7.75%
Actual Return on Assets	7.00%
Amortization Growth Rate	0.00%
Amortization Period	15
Minimum Period	15



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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.50%
Actual Return on Assets	7.50%
Amortization Growth Rate	0.00%
Amortization Period	15
Minimum Period	15



206

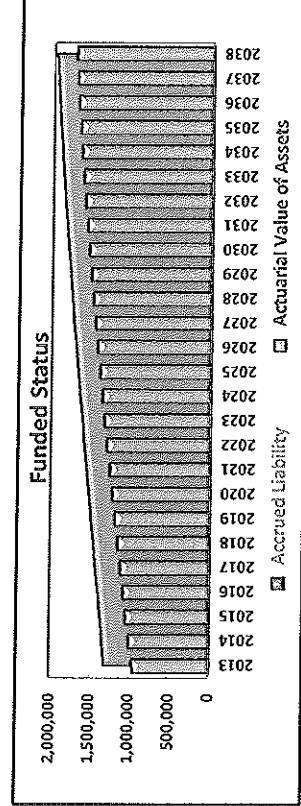
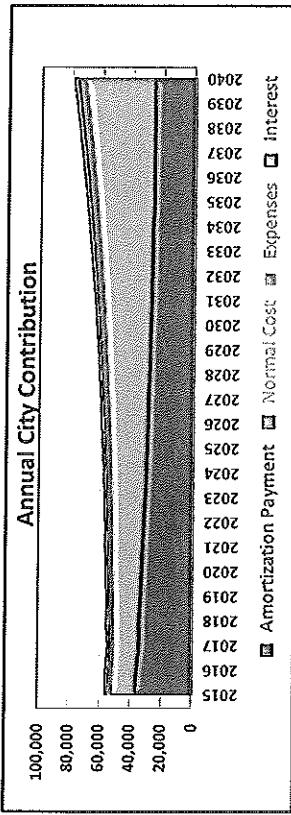
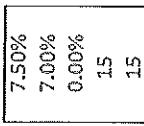
Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.00%
0.00%
1.5
1.5



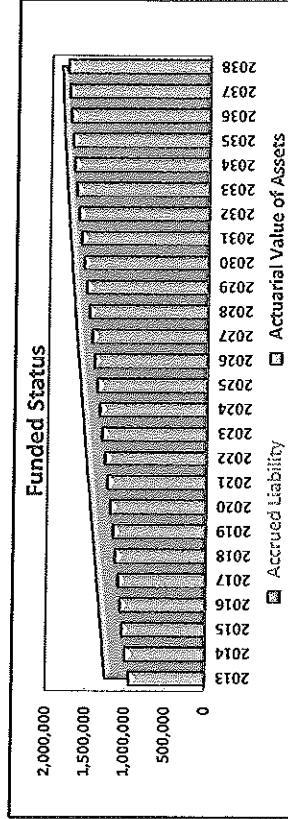
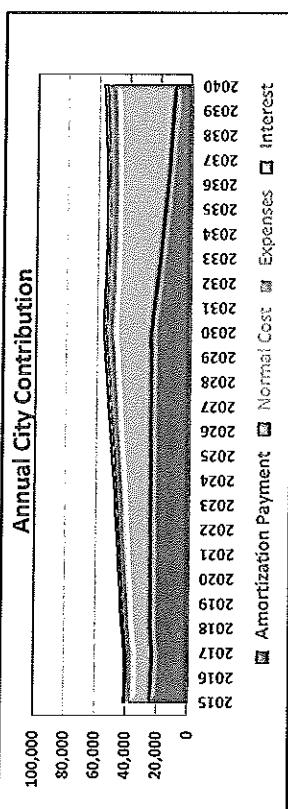
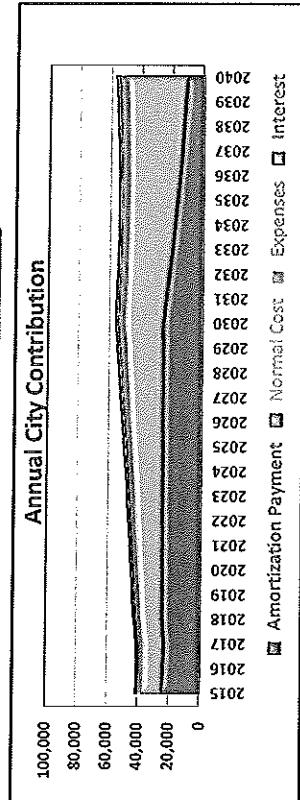
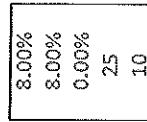
20 ✓

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding matched changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
Actual Return on Assets
Amortization Growth Rate
Amortization Period
Minimum Period

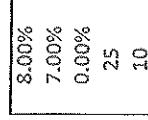


Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

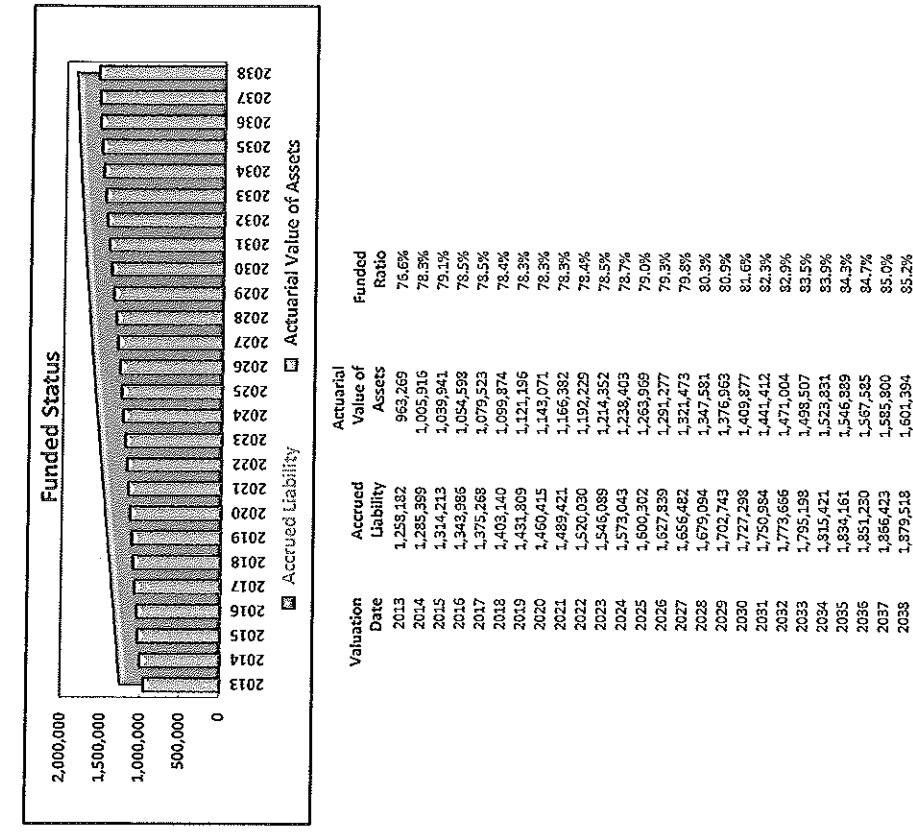
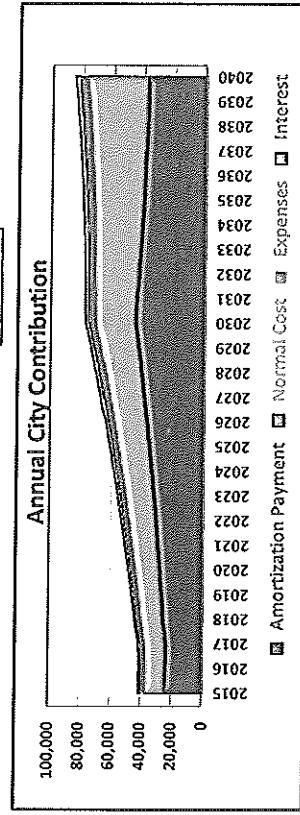
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
Actual Return on Assets
Amortization Growth Rate
Amortization Period
Minimum Period



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

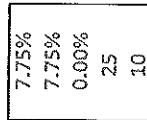


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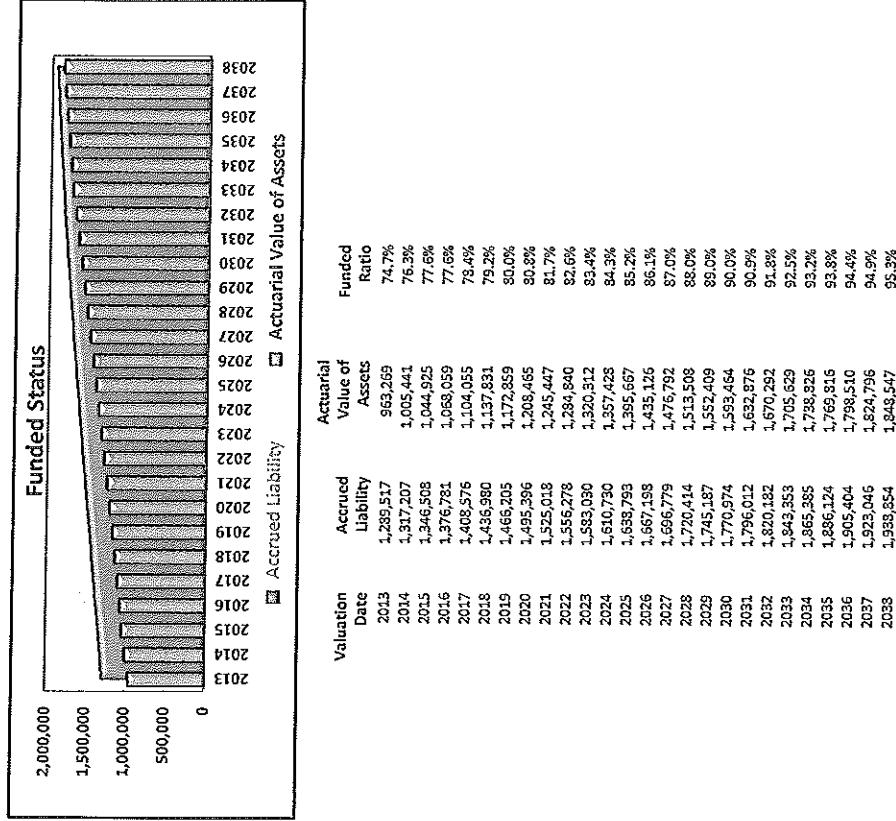
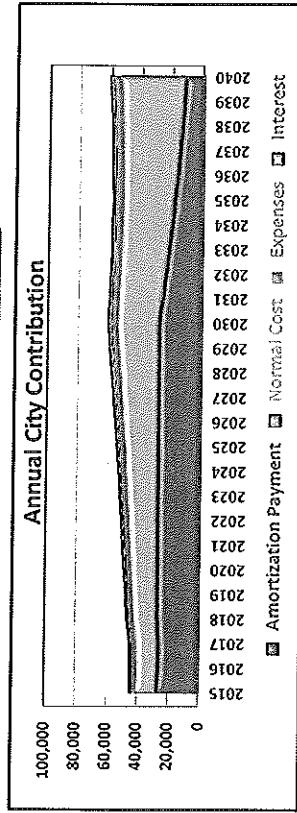
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 7.75%
 7.75%
 0.00%
Amortization Growth Rate
 25
Amortization Period
 10
Minimum Period



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



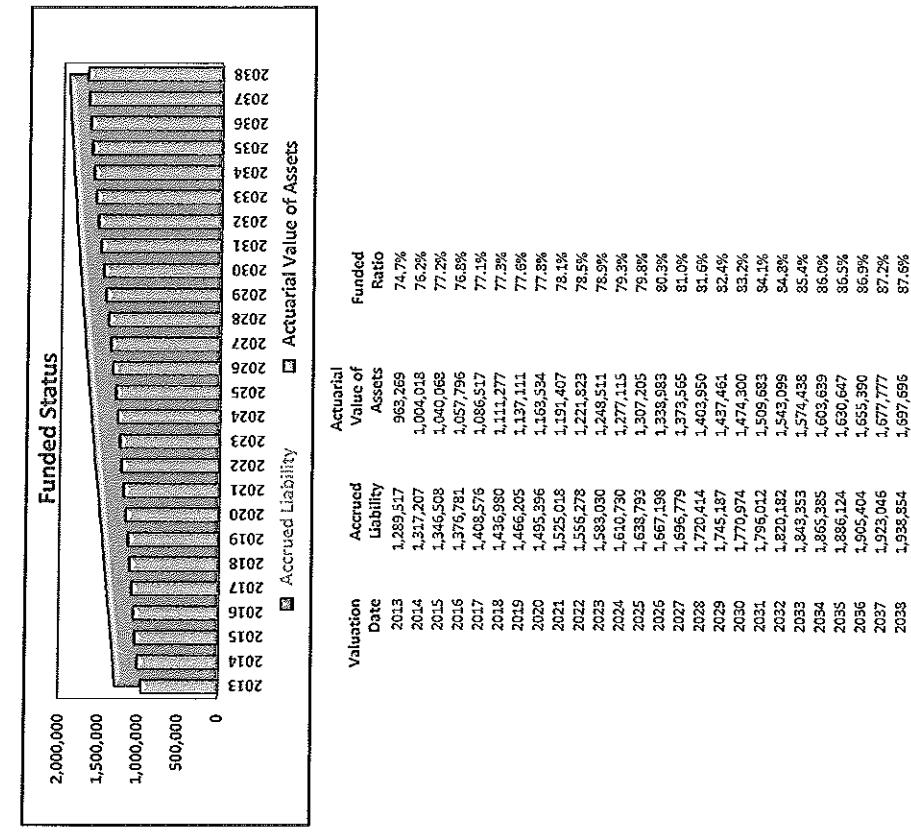
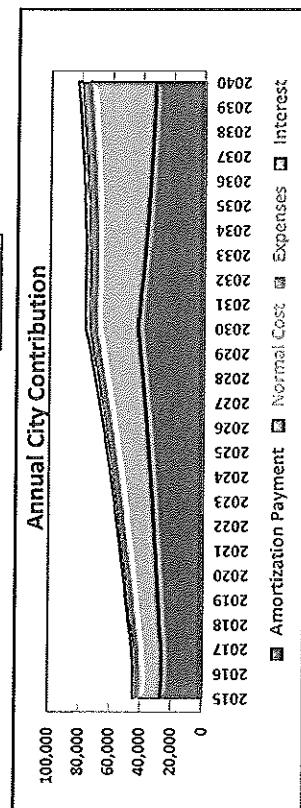
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.75%
7.00%
0.00%
25
10

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

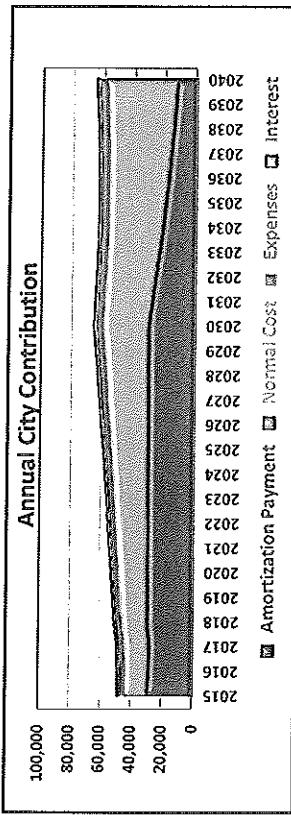


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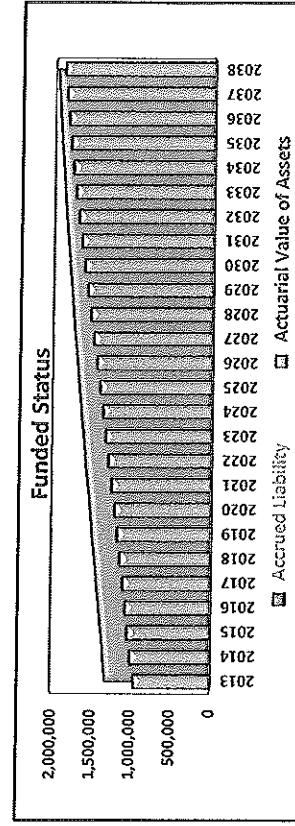
CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.50%
0.00%
25
10



Annual City Contribution					
	FYE	Amort. Payment	Normal Cost	Interest	Old Plan Offsets
2015	28,841	14,588	2,522	1,733	(981)
2016	25,287	15,423	2,569	1,739	(981)
2017	28,851	16,226	2,402	1,742	(981)
2018	29,924	16,965	2,442	1,816	(744)
2019	30,057	17,740	2,515	1,833	(474)
2020	30,132	18,591	2,590	1,853	(474)
2021	30,215	19,617	2,668	1,933	(174)
2022	30,293	20,552	2,748	1,973	(174)
2023	30,339	21,415	2,830	2,010	(174)
2024	30,371	22,415	2,915	2,051	(174)
2025	30,413	23,482	3,003	2,095	(174)
2026	30,459	24,525	3,093	2,142	(174)
2027	30,509	25,576	3,186	2,191	(174)
2028	30,559	26,513	3,281	2,237	(174)
2029	30,597	28,075	3,380	2,285	(174)
2030	30,636	28,308	3,481	2,335	(174)
2031	30,603	28,510	3,585	2,389	(174)
2032	26,219	34,559	3,693	2,278	(174)
2033	24,066	32,372	3,804	2,225	(174)
2034	22,084	34,847	3,918	2,241	(174)
2035	20,265	36,385	4,036	2,235	(174)
2036	18,587	37,950	4,157	2,237	(174)
2037	17,068	39,664	4,281	2,247	(174)
2038	15,664	41,409	4,410	2,264	(174)
2039	14,377	43,230	4,542	2,288	(174)
2040	13,155	45,129	4,678	2,320	(174)



	FY	Amort. Payment	Normal Cost	Interest	Old Plan Offsets	Annual City Contrib.	City Contrib.
2015	28,841	14,588	2,522	1,733	(981)	47,303	47,377
2016	25,287	15,423	2,569	1,739	(981)	48,246	48,246
2017	28,851	16,226	2,402	1,742	(174)	50,673	50,673
2018	29,924	16,965	2,442	1,816	(474)	51,891	51,891
2019	30,057	17,740	2,515	1,833	(474)	52,832	52,832
2020	30,132	18,591	2,590	1,853	(174)	54,259	54,259
2021	30,215	19,617	2,668	1,933	(174)	55,992	55,992
2022	30,293	20,552	2,748	1,973	(174)	56,521	57,378
2023	30,339	21,415	2,830	2,010	(174)	57,258	57,258
2024	30,371	22,415	2,915	2,051	(174)	58,319	58,319
2025	30,413	23,482	3,003	2,095	(174)	59,533	59,533
2026	30,459	24,525	3,093	2,142	(174)	60,145	60,145
2027	30,509	25,576	3,186	2,191	(174)	61,508	61,508
2028	30,559	26,513	3,281	2,237	(174)	62,816	62,816
2029	30,597	28,075	3,380	2,285	(174)	64,163	64,163
2030	30,636	28,308	3,481	2,335	(174)	65,536	65,536
2031	30,603	28,510	3,585	2,389	(174)	64,933	64,933
2032	26,219	34,559	3,693	2,278	(174)	63,975	63,975
2033	24,066	32,372	3,804	2,225	(174)	63,523	63,523
2034	22,084	34,847	3,918	2,241	(174)	62,916	62,916
2035	20,265	36,385	4,036	2,235	(174)	62,747	62,747
2036	18,587	37,950	4,157	2,237	(174)	62,807	62,807
2037	17,068	39,664	4,281	2,247	(174)	63,086	63,086
2038	15,664	41,409	4,410	2,264	(174)	63,572	63,572
2039	14,377	43,230	4,542	2,288	(174)	64,263	64,263
2040	13,155	45,129	4,678	2,320	(174)	65,148	65,148

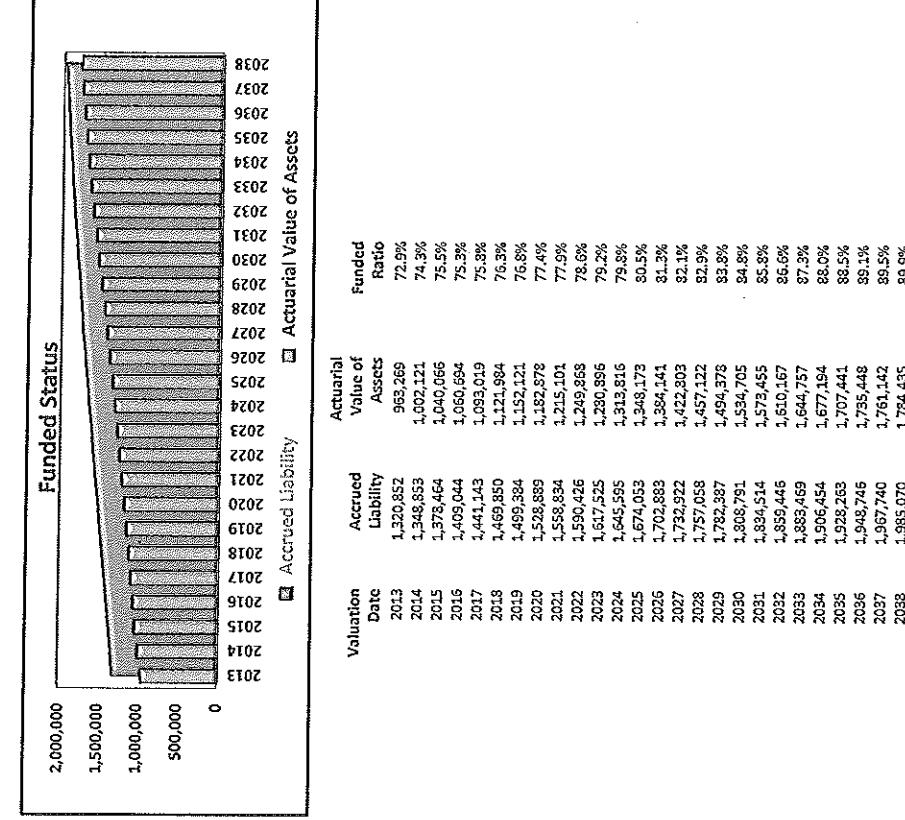
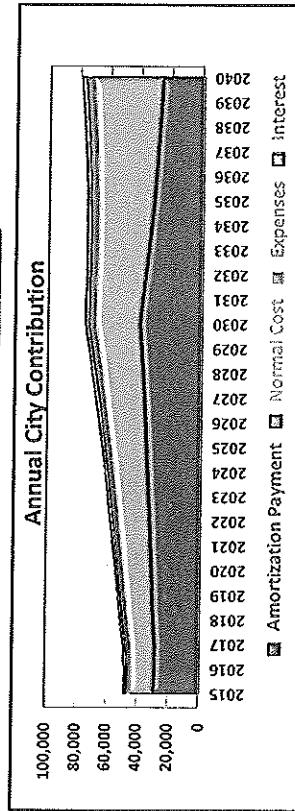
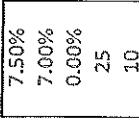
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Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.00%
0.00%
25
10



FY	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	Annual City Contrib.
2015	29,841	14,688	2,522	1,733	(981)	47,363
2016	29,357	15,423	2,509	1,742	(981)	48,050
2017	29,129	16,226	2,402	1,759	(981)	48,535
2018	30,521	16,965	2,442	1,838	(474)	51,292
2019	31,098	17,740	2,515	1,891	(474)	52,770
2020	31,742	18,691	2,580	1,952	(474)	54,501
2021	32,356	19,547	2,668	2,015	(174)	56,562
2022	33,162	20,252	2,748	2,079	(174)	58,367
2023	33,894	21,146	2,830	2,141	(174)	60,107
2024	34,655	22,415	2,915	2,209	(174)	62,020
2025	35,475	23,482	3,003	2,281	(174)	64,057
2026	36,356	24,625	3,093	2,359	(174)	66,259
2027	37,306	25,796	3,186	2,441	(174)	68,555
2028	38,331	26,113	3,281	2,523	(174)	70,374
2029	39,435	26,075	3,380	2,610	(174)	72,526
2030	40,648	26,308	3,481	2,704	(174)	75,067
2031	39,031	30,603	3,585	2,636	(174)	75,741
2032	37,145	34,959	3,653	2,681	(174)	75,304
2033	35,379	33,772	3,804	2,672	(174)	75,053
2034	33,783	34,947	3,918	2,671	(174)	75,045
2035	32,355	36,385	4,036	2,680	(174)	75,278
2036	31,070	37,950	4,157	2,686	(174)	75,739
2037	29,926	39,654	4,231	2,720	(174)	76,417
2038	28,907	41,409	4,410	2,732	(174)	77,304
2039	27,999	43,230	4,542	2,730	(174)	78,387
2040	27,199	45,129	4,678	2,835	(174)	79,653

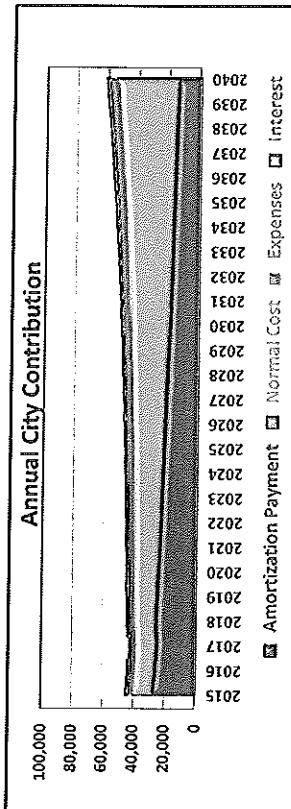
213

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

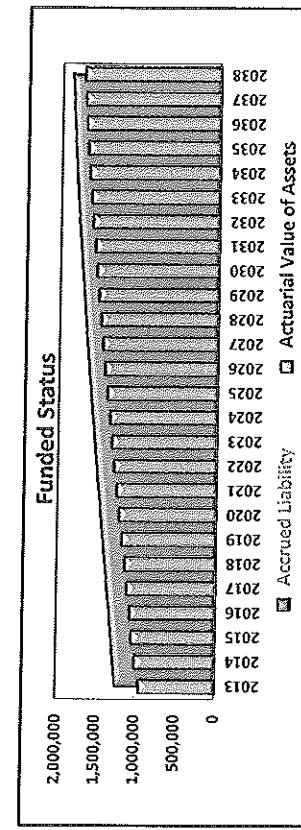
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	8.00%
Actual Return on Assets	8.00%
Amortization Growth Rate	2.00%
Amortization Period	15
Minimum Period	15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.
2015	28,458	12,484	2,522	1,705	(964)	44,205
2016	26,786	13,132	2,595	1,664	(984)	43,407
2017	25,537	13,344	2,402	1,639	(990)	42,332
2018	26,025	14,489	2,442	1,665	(482)	44,159
2019	25,484	15,164	2,515	1,639	(488)	44,968
2020	24,881	16,014	2,590	1,706	(994)	44,697
2021	24,300	16,534	2,668	1,718	(74)	45,346
2022	23,729	17,657	2,748	1,731	(74)	45,891
2023	23,136	18,407	2,830	1,741	(74)	45,340
2024	22,545	19,286	2,915	1,755	(74)	45,327
2025	21,978	20,223	3,003	1,774	(74)	46,809
2026	21,428	21,242	3,093	1,795	(74)	47,384
2027	20,896	22,279	3,186	1,819	(74)	48,005
2028	20,375	23,255	3,281	1,840	(74)	48,577
2029	19,857	24,272	3,380	1,864	(74)	49,199
2030	19,352	25,353	3,481	1,890	(74)	50,902
2031	18,862	26,491	3,585	1,920	(74)	50,694
2032	18,395	27,682	3,693	1,952	(74)	51,538
2033	17,921	28,925	3,804	1,987	(74)	52,463
2034	17,468	30,223	3,918	2,025	(74)	53,460
2035	17,027	31,577	4,036	2,065	(74)	54,531
2036	16,596	32,990	4,157	2,108	(74)	55,677
2037	16,175	34,464	4,281	2,155	(74)	56,902
2038	15,766	36,002	4,410	2,204	(74)	58,208
2039	15,366	37,608	4,542	2,256	(74)	59,598
2040	14,975	39,283	4,678	2,312	(74)	61,074

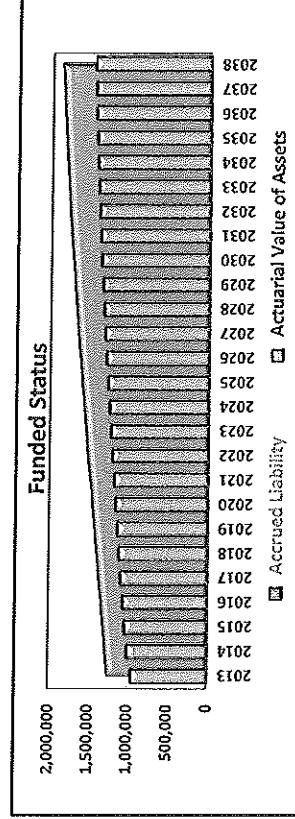
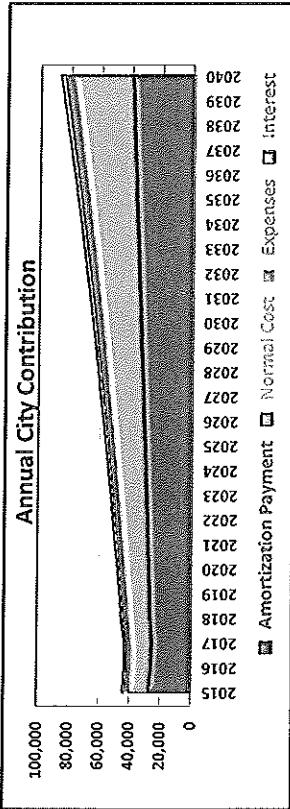
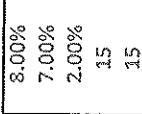
214

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

8.00%
7.00%
2.00%
15
15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

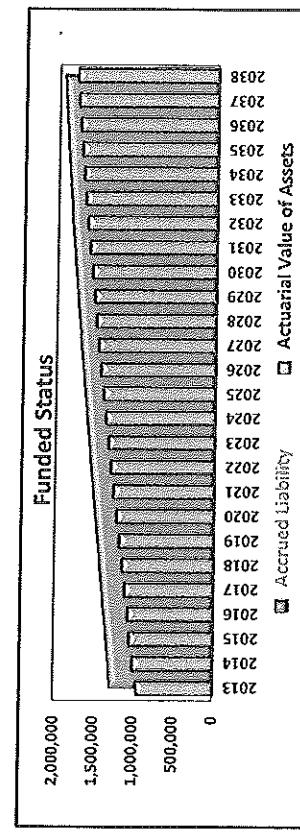
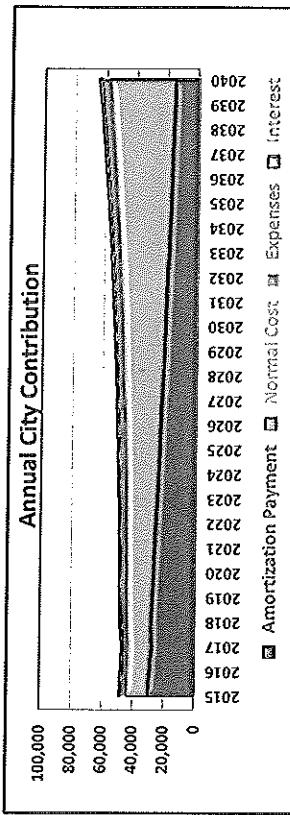
FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	Annual City Contrib.
2015	28,458	12,484	2,522	1,705	(564)	44,205
2016	26,164	13,152	2,509	1,672	(584)	43,298
2017	26,164	13,344	2,402	1,664	(590)	43,684
2018	27,350	14,489	2,442	1,737	(62)	45,536
2019	27,746	15,164	2,515	1,782	(58)	46,719
2020	28,301	16,014	2,580	1,849	(94)	48,251
2021	28,858	16,834	2,668	1,899	(174)	50,125
2022	29,503	17,657	2,745	1,958	(174)	51,692
2023	30,084	18,407	2,830	2,013	(174)	53,150
2024	30,660	19,286	2,915	2,074	(174)	54,761
2025	31,255	20,228	3,003	2,138	(174)	56,451
2026	31,865	21,242	3,093	2,205	(174)	58,231
2027	32,485	22,279	3,185	2,273	(174)	60,049
2028	33,111	23,255	3,281	2,340	(174)	61,813
2029	33,734	24,272	3,380	2,408	(174)	63,620
2030	34,363	25,353	3,481	2,474	(174)	65,502
2031	35,000	26,491	3,581	2,553	(174)	67,455
2032	35,643	27,682	3,682	2,629	(174)	69,473
2033	36,389	28,925	3,804	2,708	(174)	71,552
2034	36,933	30,223	3,918	2,788	(174)	73,633
2035	37,583	31,577	4,036	2,872	(174)	75,899
2036	38,239	32,980	4,157	2,957	(174)	78,159
2037	38,889	34,464	4,281	3,046	(174)	80,506
2038	39,536	36,002	4,410	3,138	(174)	82,920
2039	40,179	37,568	4,542	3,230	(174)	85,385
2040	40,817	39,283	4,673	3,326	(174)	87,930

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We have relied on the valuation results and actuarial methods and assumptions used by Hooker & Holcombe in their July 1, 2013 actuarial valuation report. We make no judgment as to the appropriateness of their actuarial methods or assumptions or the accuracy of their calculations. This work product was prepared solely for the City 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.

CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.75%
Actual Return on Assets	7.75%
Amortization Growth Rate	2.00%
Amortization Period	15
Minimum Period	15

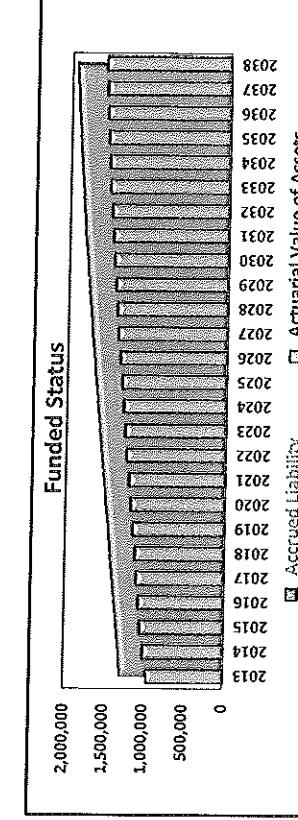
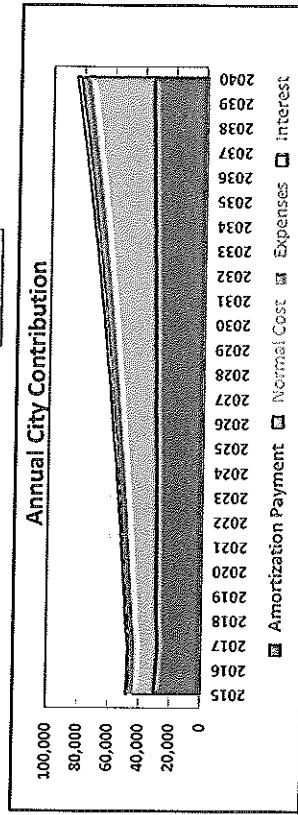


FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.	Annual Liability	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
2015	31,049	13,389	2,522	1,733	(951)	47,992	2013	1,289,517	963,269	74.7%	
2016	31,671	14,280	2,559	1,757	(982)	47,245	2014	1,317,207	1,005,441	76.3%	
2017	28,362	15,038	2,402	1,742	(987)	45,557	2015	1,346,508	1,048,494	77.9%	
2018	28,732	15,750	2,442	1,784	(480)	48,038	2016	1,376,781	1,074,884	78.1%	
2019	28,085	16,455	2,515	1,789	(486)	48,358	2017	1,408,576	1,113,475	79.0%	
2020	27,382	17,356	2,580	1,800	(493)	48,935	2018	1,436,980	1,149,269	80.0%	
2021	26,704	18,229	2,668	1,810	(174)	49,237	2019	1,466,205	1,185,615	80.9%	
2022	26,039	19,103	2,748	1,821	(174)	49,542	2020	1,495,396	1,221,791	81.7%	
2023	25,357	19,915	2,830	1,829	(174)	49,757	2021	1,525,013	1,258,580	82.5%	
2024	24,680	20,854	2,915	1,842	(174)	50,117	2022	1,555,273	1,296,960	83.3%	
2025	24,029	21,859	3,003	1,859	(174)	50,576	2023	1,583,030	1,330,550	84.1%	
2026	23,399	22,938	3,093	1,880	(174)	51,136	2024	1,610,750	1,364,973	84.7%	
2027	22,758	24,042	3,136	1,902	(174)	51,744	2025	1,638,793	1,399,351	85.4%	
2028	22,194	25,088	3,281	1,923	(174)	52,309	2026	1,667,198	1,434,024	86.0%	
2029	21,600	26,173	3,380	1,945	(174)	52,929	2027	1,696,779	1,469,815	86.6%	
2030	21,025	27,335	3,481	1,971	(174)	53,638	2028	1,720,614	1,499,500	87.2%	
2031	20,456	28,552	3,535	2,000	(174)	54,429	2029	1,745,187	1,530,142	87.7%	
2032	19,923	29,825	3,693	2,032	(174)	55,299	2030	1,770,374	1,561,621	88.2%	
2033	19,395	31,154	3,804	2,067	(174)	56,245	2031	1,796,012	1,592,217	88.7%	
2034	18,831	32,540	3,918	2,104	(174)	57,269	2032	1,820,382	1,621,789	89.1%	
2035	18,380	33,987	4,036	2,145	(174)	58,374	2033	1,843,253	1,650,223	89.5%	
2036	17,892	35,496	4,157	2,188	(174)	59,559	2034	1,865,385	1,677,383	89.9%	
2037	17,447	37,070	4,281	2,235	(174)	60,829	2035	1,886,124	1,703,122	90.3%	
2038	16,953	38,712	4,410	2,284	(174)	62,185	2036	1,905,404	1,727,276	90.7%	
2039	16,500	40,426	4,542	2,337	(174)	63,531	2037	1,923,046	1,749,572	91.0%	
2040	16,059	42,213	4,673	2,394	(174)	65,170	2038	1,938,554	1,770,118	91.3%	

We have relied on the valuation results and actuarial methods and assumptions used by Hooker & Holcombe in their July 1, 2013 actuarial valuation report. We make no judgment as to the appropriateness of their actuarial methods or assumptions or the accuracy of their calculations. This work product was prepared solely for the City 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.

CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.75%
Actual Return on Assets	7.00%
Amortization Growth Rate	2.00%
Amortization Period	15
Minimum Period	15



FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.	Annual City Contribution
2015	\$34,049	\$13,589	\$2,522	\$1,733	(\$61)	\$47,992	\$47,992
2016	\$29,807	\$14,280	\$2,595	\$1,772	(\$82)	\$47,385	\$47,385
2017	\$28,825	\$15,038	\$2,409	\$1,759	(\$87)	\$47,037	\$47,037
2018	\$29,709	\$15,730	\$2,442	\$1,821	(\$86)	\$49,222	\$49,222
2019	\$29,753	\$16,455	\$2,515	\$1,853	(\$86)	\$50,950	\$50,950
2020	\$29,905	\$17,356	\$2,590	\$1,826	(\$93)	\$54,254	\$54,254
2021	\$30,100	\$18,229	\$2,668	\$1,939	(\$124)	\$52,762	\$52,762
2022	\$30,311	\$19,103	\$2,748	\$1,984	(\$174)	\$53,977	\$53,977
2023	\$30,506	\$19,915	\$2,830	\$2,025	(\$174)	\$55,100	\$55,100
2024	\$30,701	\$20,554	\$2,915	\$2,071	(\$174)	\$56,367	\$56,367
2025	\$30,924	\$21,859	\$3,003	\$2,121	(\$174)	\$57,733	\$57,733
2026	\$31,157	\$22,938	\$3,093	\$2,175	(\$174)	\$59,199	\$59,199
2027	\$31,429	\$24,042	\$3,186	\$2,231	(\$174)	\$60,714	\$60,714
2028	\$31,703	\$25,088	\$3,281	\$2,284	(\$174)	\$62,182	\$62,182
2029	\$31,980	\$26,173	\$3,380	\$3,340	(\$174)	\$63,704	\$63,704
2030	\$32,271	\$27,335	\$3,481	\$2,399	(\$174)	\$65,367	\$65,367
2031	\$32,576	\$28,552	\$3,585	\$2,481	(\$174)	\$67,010	\$67,010
2032	\$32,893	\$29,825	\$3,693	\$2,555	(\$174)	\$68,762	\$68,762
2033	\$33,221	\$31,154	\$3,804	\$2,593	(\$174)	\$70,598	\$70,598
2034	\$33,558	\$32,540	\$3,918	\$2,652	(\$174)	\$72,504	\$72,504
2035	\$33,903	\$33,937	\$4,036	\$2,735	(\$174)	\$74,487	\$74,487
2036	\$34,256	\$35,496	\$4,157	\$2,811	(\$174)	\$76,546	\$76,546
2037	\$34,615	\$37,070	\$4,281	\$2,899	(\$174)	\$78,681	\$78,681
2038	\$34,979	\$38,712	\$4,410	\$2,970	(\$174)	\$80,897	\$80,897
2039	\$35,346	\$40,426	\$4,542	\$3,054	(\$174)	\$83,234	\$83,234
2040	\$35,716	\$42,213	\$4,678	\$3,141	(\$174)	\$85,574	\$85,574

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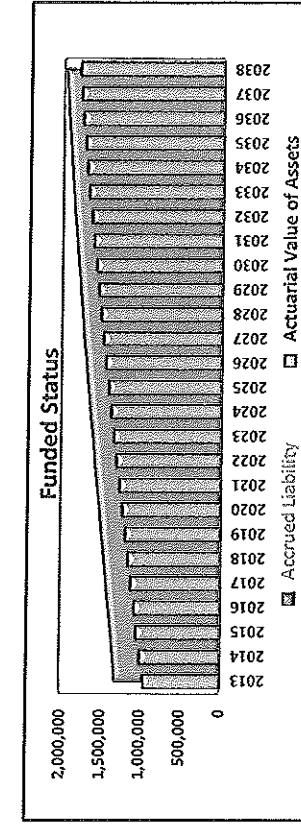
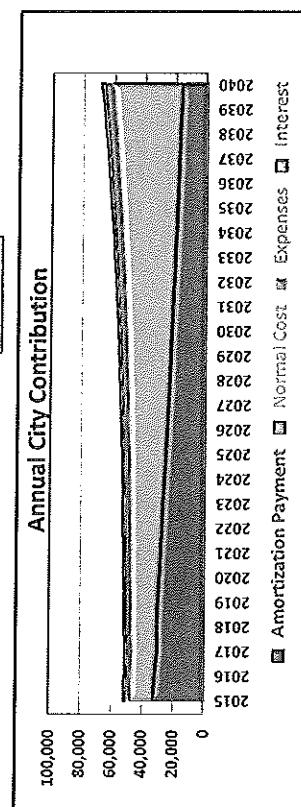
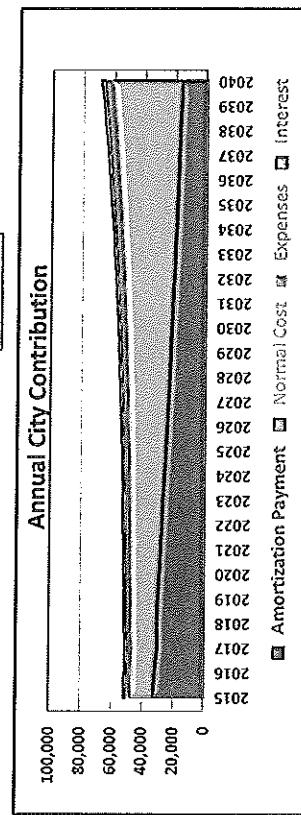
Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 7.50%
 Actual Return on Assets
 7.50%
 Amortization Growth Rate
 2.00%
 Amortization Period
 1.5
 Minimum Period
 1.5

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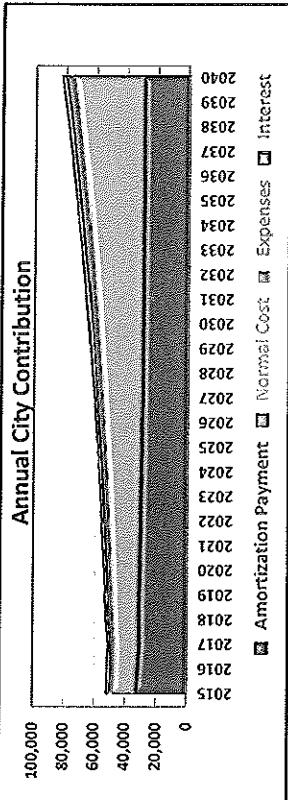
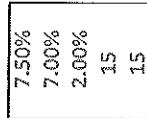
FY	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	Annual City Contrib.	Valuation Date		
							Accrued Liability	Actuarial Value of Assets	Funded Ratio
2015	33,560	14,588	2,522	1,869	(558)	\$1,581	2013	1,320,852	963,269 72.9%
2016	32,423	15,423	2,509	1,855	(579)	51,250	2014	1,348,853	1,003,070 74.4%
2017	31,079	16,226	2,402	1,830	(585)	50,552	2015	1,376,854	1,047,317 76.0%
2018	31,328	16,965	2,442	1,868	(479)	52,124	2016	1,409,044	1,075,241 76.3%
2019	30,575	17,740	2,515	1,872	(485)	52,217	2017	1,441,143	1,115,370 77.4%
2020	29,770	18,691	2,580	1,880	(491)	52,440	2018	1,486,850	1,152,645 78.4%
2021	28,995	19,647	2,668	1,888	(174)	52,994	2019	1,499,394	1,190,438 79.4%
2022	28,237	20,552	2,745	1,896	(174)	53,261	2020	1,528,889	1,228,027 80.3%
2023	27,465	21,446	2,830	1,904	(174)	53,441	2021	1,558,834	1,266,197 81.2%
2024	26,700	22,415	2,916	1,916	(174)	53,772	2022	1,589,475	1,305,931 82.1%
2025	25,965	23,482	3,003	1,931	(174)	54,208	2023	1,621,525	1,340,854 82.9%
2026	25,255	24,625	3,093	1,951	(174)	54,750	2024	1,645,595	1,376,498 83.6%
2027	24,567	25,795	3,186	1,972	(174)	55,347	2025	1,674,053	1,412,250 84.4%
2028	23,896	26,943	3,281	1,992	(174)	55,908	2026	1,702,883	1,448,273 85.0%
2029	23,233	28,075	3,380	2,014	(174)	56,528	2027	1,732,922	1,485,377 85.7%
2030	22,587	29,308	3,481	2,039	(174)	57,241	2028	1,767,058	1,516,388 86.3%
2031	22,962	30,603	3,585	2,068	(174)	58,044	2029	1,792,287	1,548,386 86.9%
2032	23,354	31,959	3,683	2,099	(174)	58,931	2030	1,808,791	1,581,262 87.4%
2033	20,764	32,372	3,804	2,133	(174)	59,899	2031	1,834,514	1,613,275 87.9%
2034	20,189	34,847	3,918	2,171	(174)	60,951	2032	1,869,446	1,644,327 88.4%
2035	19,631	36,585	4,036	2,211	(174)	62,089	2033	1,883,469	1,674,304 88.9%
2036	19,087	37,390	4,157	2,255	(174)	63,315	2034	1,905,454	1,703,086 89.3%
2037	18,557	39,664	4,281	2,301	(174)	64,529	2035	1,928,263	1,730,538 89.7%
2038	18,041	41,409	4,410	2,354	(174)	66,037	2036	1,948,706	1,756,513 90.1%
2039	17,539	43,230	4,542	2,405	(174)	67,542	2037	1,967,740	1,780,865 90.5%
2040	17,049	45,129	4,673	2,462	(174)	69,144	2038	1,985,070	1,803,411 90.8%

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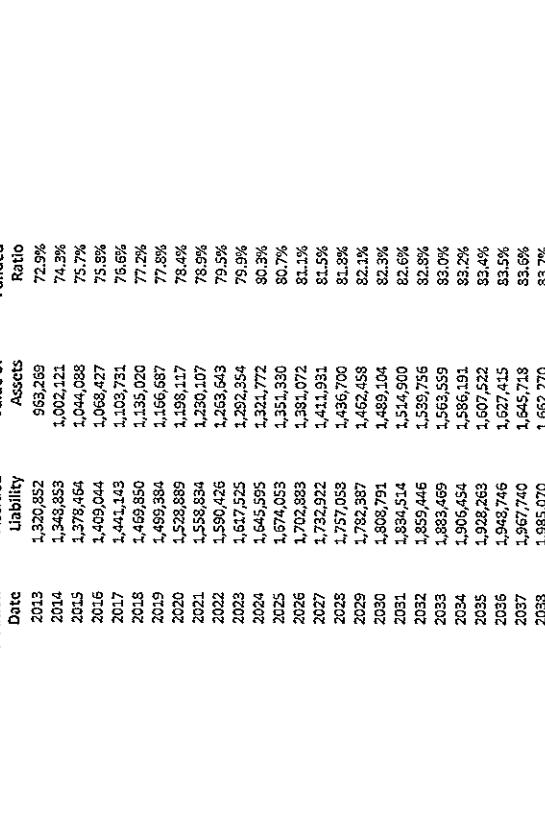
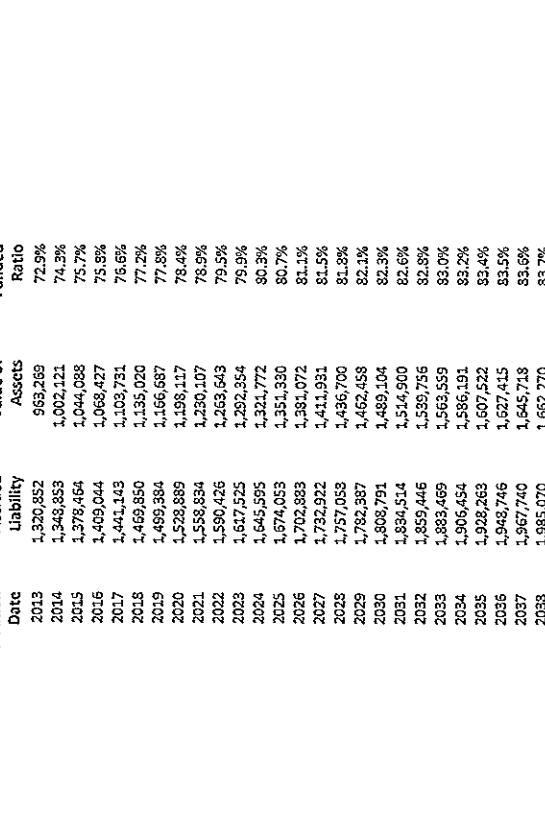
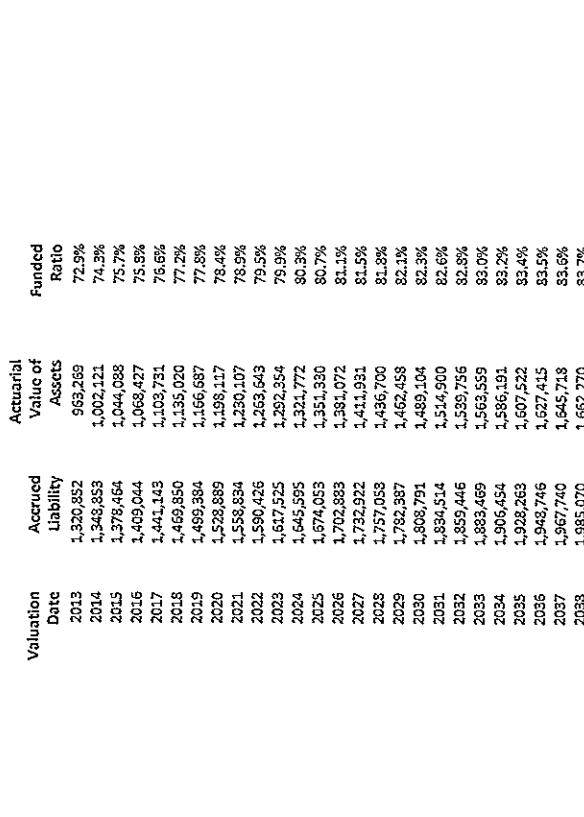
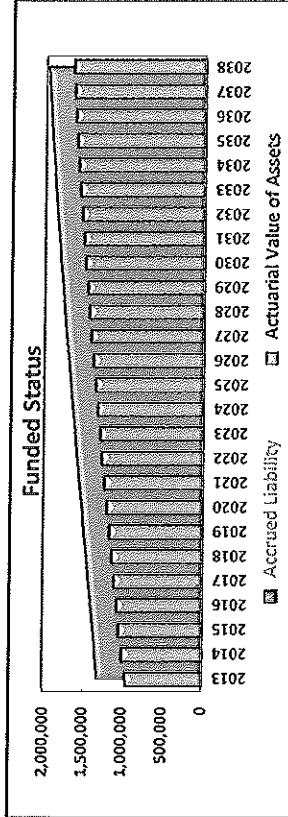
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

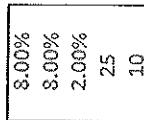


Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

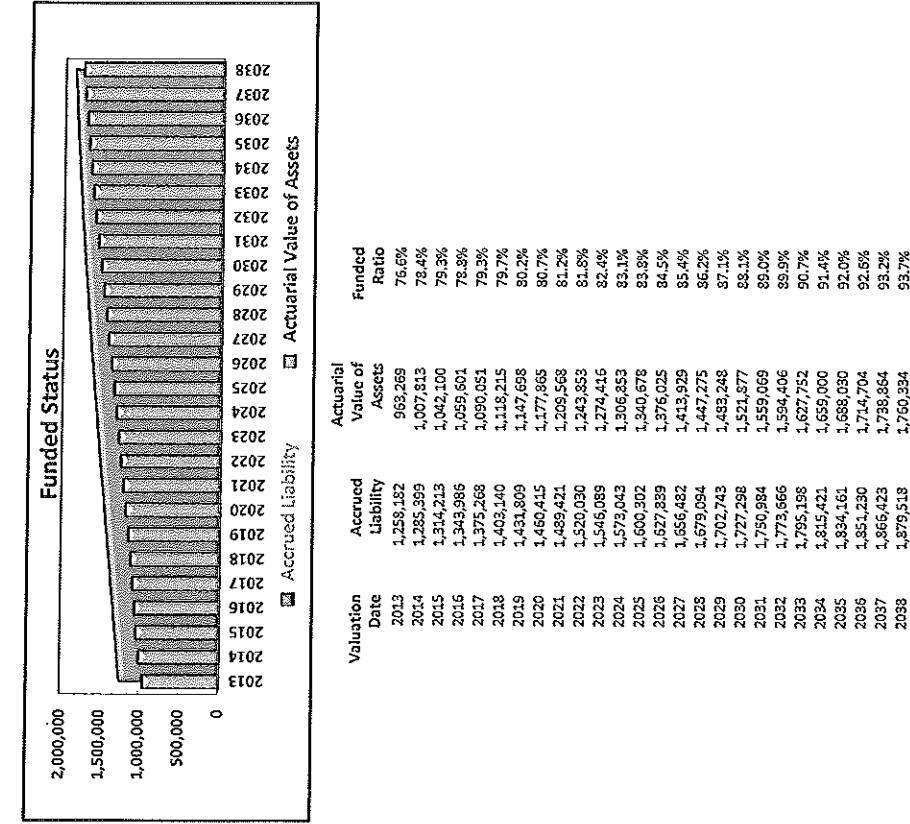
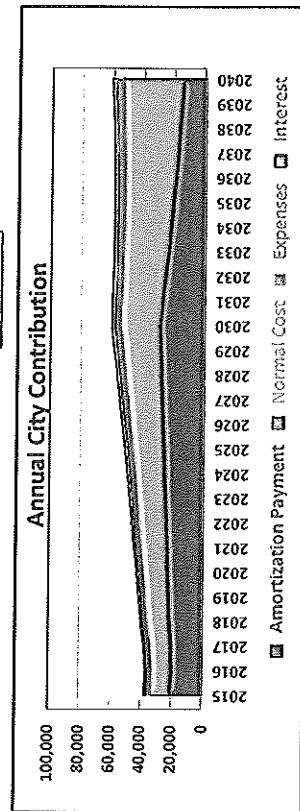


CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



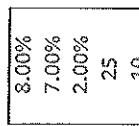
Fiscal Year	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.	Annual Accrued Liability		Actuarial Value of Assets	Funded Ratio
							Date	Liability		
2015	\$21,545	\$12,484	\$2,522	\$1,434	(\$64)	\$37,921	2013	\$1,258,152	\$963,269	76.6%
2016	\$20,668	\$13,132	\$2,509	\$1,424	(\$84)	\$36,743	2014	\$1,285,389	\$1,007,913	78.4%
2017	\$20,077	\$13,344	\$2,402	\$1,445	(\$90)	\$37,372	2015	\$1,314,213	\$1,042,100	79.3%
2018	\$22,672	\$14,489	\$2,442	\$1,530	(\$82)	\$40,056	2016	\$1,343,986	\$1,059,601	78.3%
2019	\$23,237	\$15,164	\$2,515	\$1,614	(\$84)	\$41,446	2017	\$1,375,268	\$1,050,051	79.3%
2020	\$23,827	\$16,034	\$2,589	\$1,694	(\$94)	\$42,988	2018	\$1,403,140	\$1,118,215	79.7%
2021	\$24,426	\$16,934	\$2,663	\$1,700	(\$74)	\$44,555	2019	\$1,431,899	\$1,147,698	80.2%
2022	\$25,014	\$17,657	\$2,743	\$1,759	(\$74)	\$46,118	2020	\$1,460,415	\$1,177,865	80.7%
2023	\$25,602	\$18,407	\$2,830	\$1,814	(\$74)	\$47,891	2021	\$1,489,421	\$1,209,568	81.2%
2024	\$26,215	\$19,286	\$2,915	\$1,875	(\$74)	\$49,504	2022	\$1,520,030	\$1,243,883	81.8%
2025	\$26,850	\$20,228	\$3,003	\$1,940	(\$74)	\$51,212	2023	\$1,546,059	\$1,274,435	82.4%
2026	\$27,508	\$21,422	\$3,093	\$2,008	(\$74)	\$53,019	2024	\$1,573,043	\$1,306,353	83.1%
2027	\$28,184	\$22,279	\$3,186	\$2,078	(\$74)	\$54,877	2025	\$1,600,302	\$1,340,678	83.8%
2028	\$28,871	\$23,255	\$3,281	\$2,147	(\$74)	\$56,893	2026	\$1,627,339	\$1,376,025	84.5%
2029	\$29,581	\$24,372	\$3,380	\$2,217	(\$74)	\$58,966	2027	\$1,656,482	\$1,413,929	85.4%
2030	\$30,311	\$25,533	\$3,481	\$2,282	(\$74)	\$60,933	2028	\$1,679,094	\$1,447,275	86.2%
2031	\$30,095	\$26,491	\$3,585	\$2,279	(\$74)	\$60,190	2029	\$1,702,743	\$1,481,248	87.1%
2032	\$26,213	\$27,882	\$3,693	\$2,259	(\$74)	\$59,673	2030	\$1,727,298	\$1,521,877	88.1%
2033	\$24,489	\$28,925	\$3,804	\$2,245	(\$74)	\$59,289	2031	\$1,750,984	\$1,559,069	89.0%
2034	\$22,875	\$30,223	\$3,918	\$2,237	(\$74)	\$59,079	2032	\$1,773,666	\$1,584,406	89.5%
2035	\$21,367	\$31,577	\$4,036	\$2,235	(\$74)	\$59,041	2033	\$1,795,198	\$1,627,752	90.7%
2036	\$19,960	\$32,960	\$4,157	\$2,240	(\$74)	\$59,173	2034	\$1,815,421	\$1,659,000	91.4%
2037	\$18,647	\$34,464	\$4,281	\$2,252	(\$74)	\$59,472	2035	\$1,834,161	\$1,688,030	92.0%
2038	\$17,421	\$36,002	\$4,410	\$2,268	(\$74)	\$59,928	2036	\$1,854,230	\$1,714,704	92.6%
2039	\$16,277	\$37,603	\$4,542	\$2,292	(\$74)	\$60,545	2037	\$1,866,423	\$1,738,384	93.2%
2040	\$15,209	\$39,283	\$4,678	\$2,321	(\$74)	\$61,317	2038	\$1,879,518	\$1,760,334	93.7%

2020

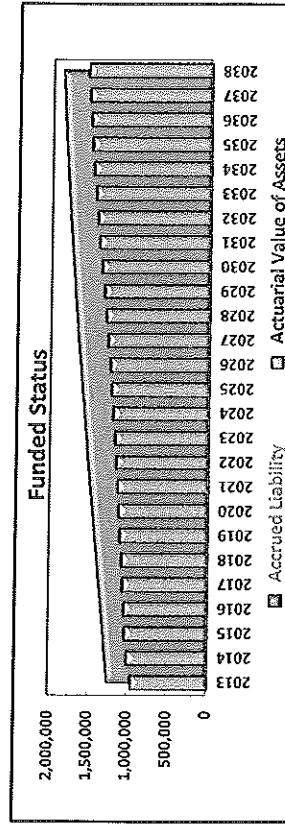
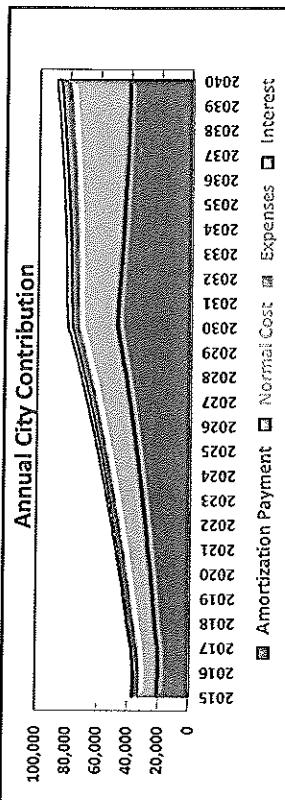
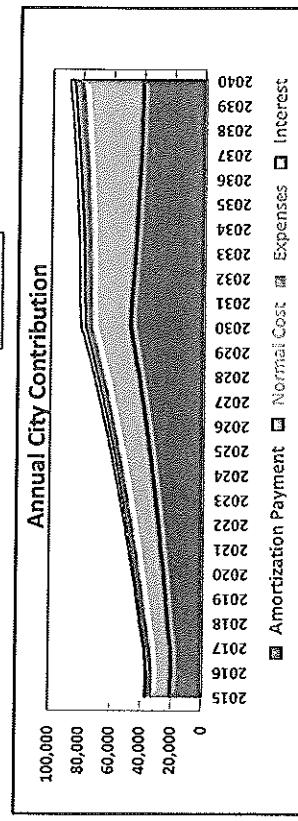
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	3.00%
Actual Return on Assets	7.00%
Amortization Growth Rate	2.00%
Amortization Period	25
Minimum Period	10



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



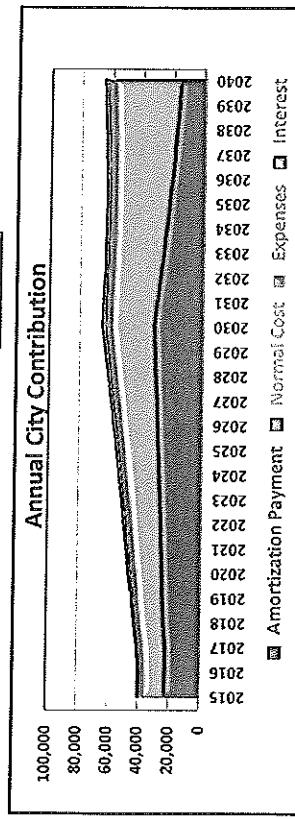
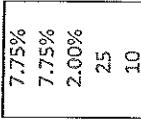
FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	Annual City Contrib.	City Contrib.	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
2015	23,545	12,454	2,522	1,434	(964)	37,021	35,991	2013	1,285,182	963,269	76.6%
2016	20,804	13,132	2,509	1,430	(964)	37,021	37,894	2014	1,285,399	1,005,916	78.3%
2017	23,165	13,844	2,402	1,467	(964)	37,021	41,155	2015	1,314,213	1,035,608	78.3%
2018	23,144	14,489	2,442	1,572	(482)	43,398	43,398	2015	1,343,986	1,045,860	77.8%
2019	24,541	15,164	2,515	1,656	(488)	43,398	43,398	2017	1,375,268	1,066,520	77.6%
2020	26,147	16,014	2,590	1,756	(494)	45,013	45,013	2018	1,403,140	1,082,537	77.2%
2021	27,854	16,534	2,568	1,838	(174)	49,050	49,050	2019	1,431,809	1,099,559	76.8%
2022	29,673	17,657	2,748	1,985	(174)	53,869	53,869	2020	1,460,415	1,117,203	76.5%
2023	31,553	18,407	2,830	2,071	(174)	54,987	54,987	2021	1,489,421	1,136,408	76.3%
2024	33,532	19,286	2,915	2,186	(174)	57,745	57,745	2022	1,520,030	1,158,304	76.2%
2025	35,647	20,223	3,003	2,310	(174)	61,014	61,014	2023	1,546,089	1,176,681	76.1%
2026	37,906	21,242	3,093	2,442	(174)	64,509	64,509	2024	1,573,043	1,197,248	76.1%
2027	40,330	22,279	3,186	2,581	(174)	68,026	68,026	2025	1,600,502	1,219,657	76.2%
2028	42,939	23,255	3,281	2,726	(174)	72,027	72,027	2026	1,627,339	1,244,159	76.4%
2029	45,753	24,257	3,380	2,866	(174)	76,111	76,111	2027	1,656,482	1,272,059	76.3%
2030	48,825	25,353	3,481	3,047	(174)	80,532	80,532	2028	1,679,054	1,296,473	77.2%
2031	52,091	26,491	3,585	3,072	(174)	81,204	81,204	2029	1,702,743	1,324,721	77.2%
2032	47,202	27,682	3,693	3,083	(174)	81,486	81,486	2030	1,727,298	1,357,395	78.6%
2033	46,212	28,872	3,804	3,097	(174)	81,864	81,864	2031	1,750,384	1,383,834	79.3%
2034	45,325	30,225	3,918	3,117	(174)	82,409	82,409	2032	1,773,666	1,413,467	80.0%
2035	44,544	31,577	4,035	3,145	(174)	83,128	83,128	2033	1,795,198	1,446,119	80.6%
2036	43,854	32,990	4,157	3,178	(174)	84,015	84,015	2034	1,815,421	1,471,676	81.1%
2037	43,274	34,464	4,281	3,218	(174)	85,063	85,063	2035	1,834,161	1,495,034	81.3%
2038	42,767	36,002	4,410	3,253	(174)	86,268	86,268	2036	1,851,230	1,516,076	81.9%
2039	42,334	37,608	4,542	3,314	(174)	87,624	87,624	2037	1,866,423	1,534,668	82.2%
2040	41,964	39,235	4,673	3,371	(174)	89,122	89,122	2038	1,879,518	1,550,659	82.5%

221

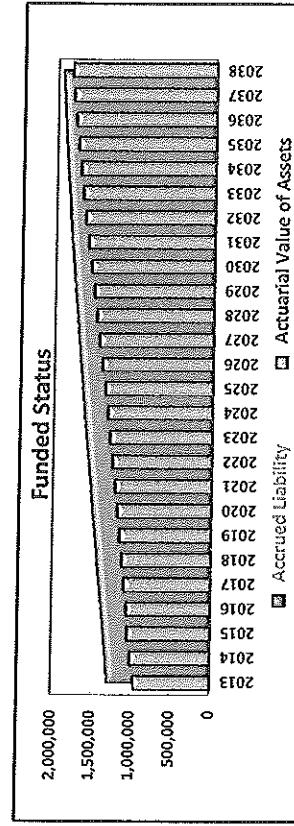
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 7.75%
 Actual Return on Assets
 7.75%
 Amortization Growth Rate
 2.00%
 Amortization Period
 25
 Minimum Period
 10



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.	Annual City Contribution
2015	13,333	13,333	2,522	1,500	(961)	39,583	50,295
2016	22,733	14,289	2,522	1,500	(982)	40,443	50,295
2017	22,038	15,038	2,402	1,531	(987)	40,792	50,295
2018	24,242	15,730	2,442	1,633	(480)	43,547	50,295
2019	24,877	16,455	2,515	1,667	(486)	45,028	50,295
2020	25,485	17,356	2,590	1,728	(493)	46,666	50,295
2021	26,119	18,229	2,668	1,788	(174)	48,630	50,295
2022	26,765	19,103	2,748	1,849	(174)	50,295	50,295
2023	27,397	19,915	2,830	1,907	(174)	51,875	50,295
2024	28,034	20,854	2,915	1,970	(174)	53,599	50,295
2025	28,696	21,859	3,003	2,037	(174)	55,421	50,295
2026	29,383	22,938	3,093	2,107	(174)	57,345	50,295
2027	30,090	24,042	3,186	2,180	(174)	59,324	50,295
2028	30,819	25,035	3,281	2,251	(174)	61,265	50,295
2029	31,559	26,178	3,380	3,232	(174)	63,267	50,295
2030	32,324	27,335	3,481	2,401	(174)	65,367	50,295
2031	30,566	28,552	3,585	2,384	(174)	64,913	50,295
2032	28,567	29,825	3,693	2,363	(174)	64,272	50,295
2033	26,652	31,154	3,804	2,343	(174)	63,779	50,295
2034	24,859	32,540	3,918	2,332	(174)	63,475	50,295
2035	23,188	33,987	4,036	2,323	(174)	63,365	50,295
2036	21,629	35,496	4,157	2,330	(174)	63,438	50,295
2037	20,176	37,070	4,281	2,340	(174)	63,693	50,295
2038	18,821	38,712	4,410	2,356	(174)	64,125	50,295
2039	17,558	40,426	4,542	2,378	(174)	64,730	50,295
2040	16,379	42,243	4,678	2,406	(174)	65,502	50,295

222

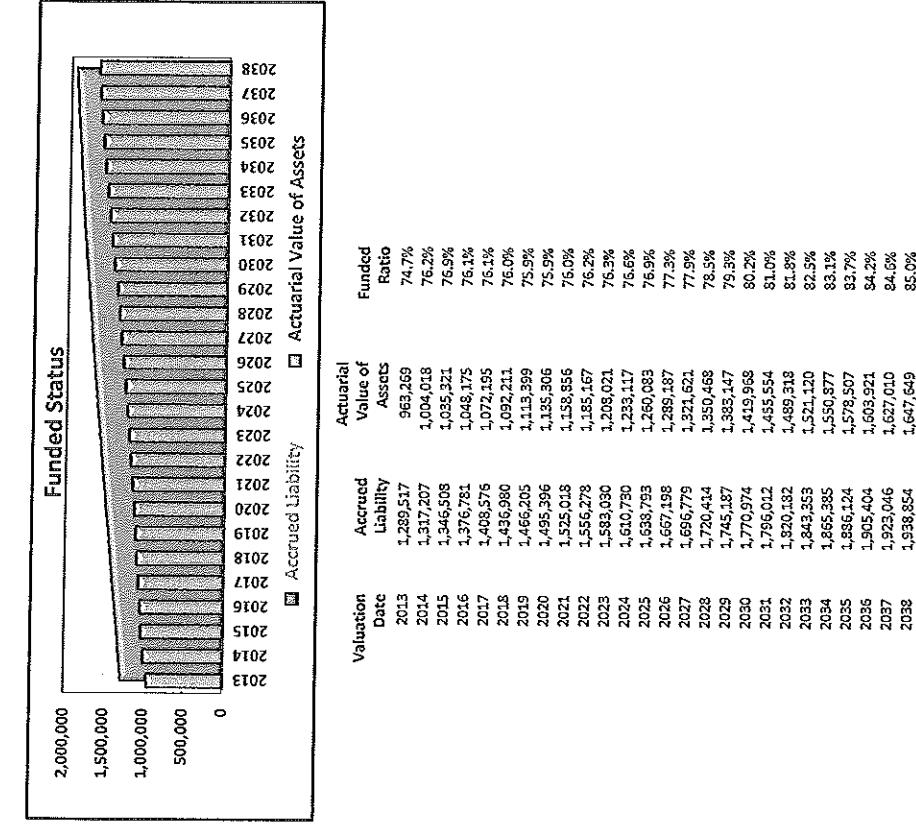
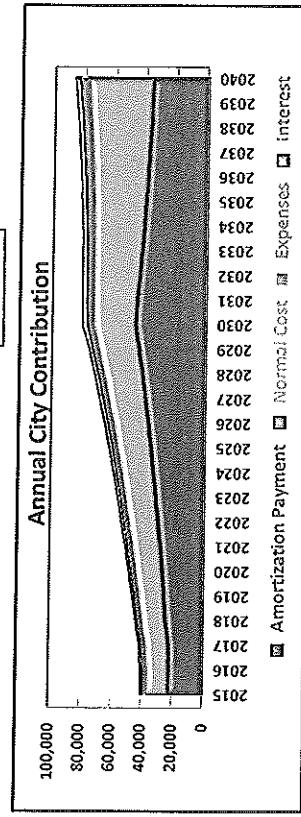
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.75%
7.00%
2.00%
25
1.0

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



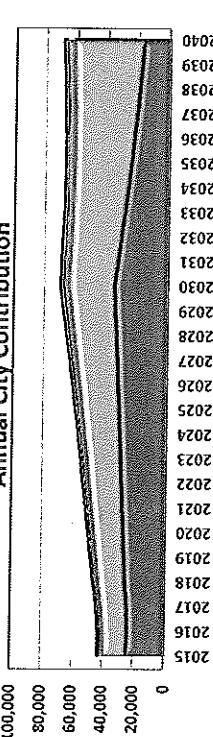
223

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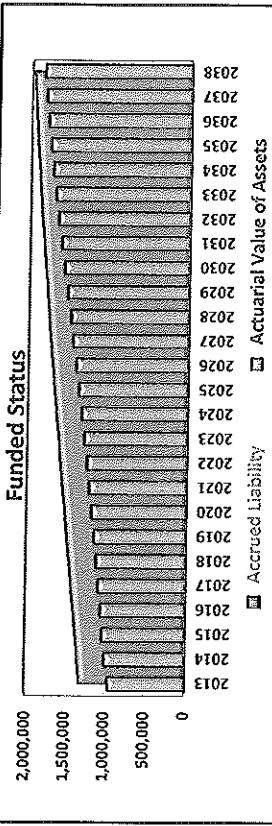
CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.50%
Actual Return on Assets	7.50%
Amortization Growth Rate	2.00%
Amortization Period	25
Minimum Period	10

Annual City Contribution



Funded Status



Annual City Contribution

FYE	Amort. Payment	Normal Cost	Expenses	Old Plan Offsets	Interest	Annual City Contribution	City Contrib.
2015	15,683	2,522	1,555	(958)	42,835	42,835	42,835
2016	15,462	2,402	1,570	(979)	43,215	43,215	43,215
2017	16,226	2,402	1,600	(985)	44,075	44,075	44,075
2018	16,965	2,442	1,683	(479)	45,901	45,901	45,901
2019	17,562	2,515	1,739	(455)	48,471	48,471	48,471
2020	18,692	2,590	1,800	(491)	50,202	50,202	50,202
2021	19,617	2,653	1,852	(174)	52,160	52,160	52,160
2022	20,976	2,748	1,925	(174)	54,027	54,027	54,027
2023	21,416	2,830	1,985	(174)	55,710	55,710	55,710
2024	22,415	2,915	2,050	(174)	57,541	57,541	57,541
2025	23,482	3,003	2,118	(174)	59,474	59,474	59,474
2026	24,625	3,093	2,191	(174)	61,513	61,513	61,513
2027	25,756	3,185	2,265	(174)	63,658	63,658	63,658
2028	26,913	3,281	2,338	(174)	65,672	65,672	65,672
2029	28,075	3,380	2,414	(174)	67,802	67,802	67,802
2030	29,256	3,481	2,493	(174)	70,034	70,034	70,034
2031	30,463	3,585	2,473	(174)	69,472	69,472	69,472
2032	30,728	31,959	2,446	(174)	68,712	68,712	68,712
2033	28,688	33,372	3,804	2,425	68,115	68,115	68,115
2034	26,724	34,847	3,918	2,411	67,726	67,726	67,726
2035	24,835	36,385	4,036	2,405	67,547	67,547	67,547
2036	23,152	37,980	4,157	2,405	67,371	67,371	67,371
2037	21,605	39,664	4,281	2,414	67,790	67,790	67,790
2038	20,127	41,409	4,410	2,428	68,200	68,200	68,200
2039	18,750	43,230	4,542	2,449	68,737	68,737	68,737
2040	17,467	45,129	4,678	2,477	69,577	69,577	69,577

224

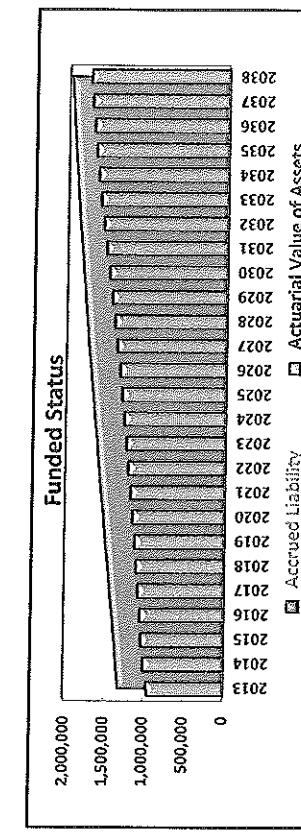
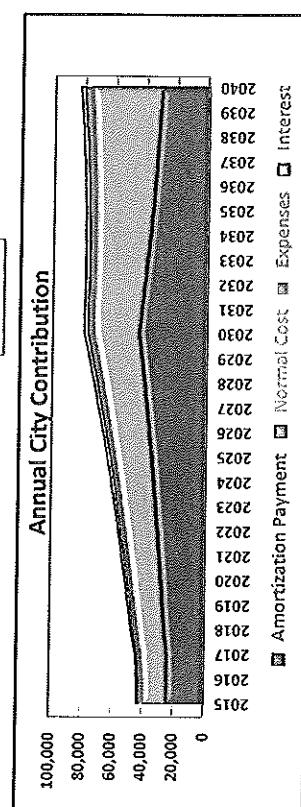
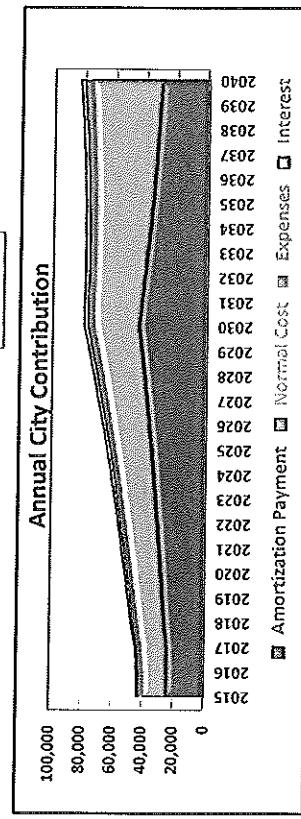
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.00%
2.00%
25
10

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



225

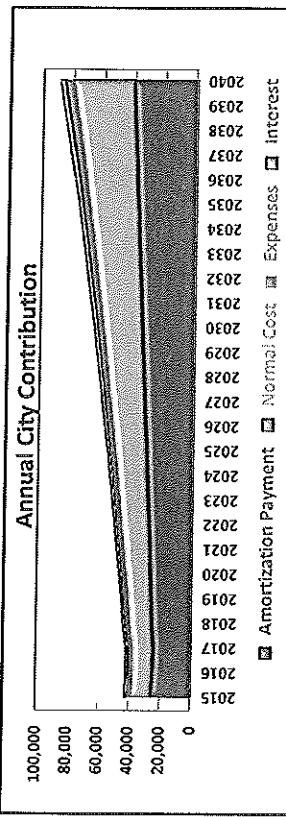
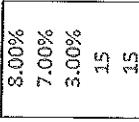
FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	City Contrib.	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
2015	\$25,025	\$14,383	\$2,522	\$1,555	(\$958)	\$42,835	2013	\$1,320,852	\$963,269	72.9%
2016	\$24,760	\$15,123	\$2,519	\$1,512	(\$979)	\$43,285	2014	\$1,348,853	\$1,002,121	74.3%
2017	\$25,068	\$16,216	\$2,402	\$1,609	(\$985)	\$44,320	2015	\$1,379,464	\$1,054,914	75.1%
2018	\$26,799	\$15,965	\$2,442	\$1,703	(\$979)	\$47,428	2016	\$1,409,044	\$1,050,213	74.5%
2019	\$27,856	\$17,740	\$2,515	\$1,772	(\$985)	\$49,398	2017	\$1,441,143	\$1,077,404	74.8%
2020	\$29,006	\$18,694	\$2,590	\$1,832	(\$991)	\$51,648	2018	\$1,469,850	\$1,101,235	74.9%
2021	\$30,228	\$19,517	\$2,668	\$1,934	(\$174)	\$54,273	2019	\$1,499,384	\$1,126,388	75.1%
2022	\$31,506	\$20,552	\$2,748	\$2,013	(\$174)	\$56,650	2020	\$1,528,859	\$1,152,356	75.4%
2023	\$32,820	\$21,416	\$2,830	\$2,101	(\$174)	\$58,993	2021	\$1,558,324	\$1,180,042	75.7%
2024	\$34,192	\$22,415	\$2,915	\$2,192	(\$174)	\$61,540	2022	\$1,589,426	\$1,210,552	76.1%
2025	\$35,652	\$23,482	\$3,003	\$2,283	(\$174)	\$64,251	2023	\$1,617,255	\$1,237,655	76.5%
2026	\$37,202	\$24,625	\$3,093	\$2,390	(\$174)	\$67,136	2024	\$1,645,395	\$1,257,035	77.0%
2027	\$38,856	\$25,796	\$3,136	\$2,493	(\$174)	\$70,152	2025	\$1,674,053	\$1,288,362	77.6%
2028	\$40,621	\$26,913	\$3,281	\$2,608	(\$174)	\$73,249	2026	\$1,702,883	\$1,321,686	78.2%
2029	\$42,507	\$32,075	\$3,380	\$2,723	(\$174)	\$76,511	2027	\$1,732,922	\$1,368,345	79.0%
2030	\$44,549	\$29,305	\$3,481	\$2,848	(\$174)	\$80,012	2028	\$1,757,058	\$1,401,323	79.5%
2031	\$43,129	\$30,603	\$3,535	\$2,947	(\$174)	\$79,950	2029	\$1,782,387	\$1,437,589	80.7%
2032	\$41,352	\$31,959	\$3,693	\$2,835	(\$174)	\$79,665	2030	\$1,808,791	\$1,473,584	81.7%
2033	\$39,657	\$33,372	\$3,804	\$2,829	(\$174)	\$79,483	2031	\$1,834,514	\$1,517,888	82.7%
2034	\$38,099	\$34,847	\$3,913	\$2,830	(\$174)	\$79,520	2032	\$1,859,446	\$1,555,210	83.6%
2035	\$36,678	\$36,385	\$4,036	\$2,839	(\$174)	\$79,764	2033	\$1,883,659	\$1,590,586	84.4%
2036	\$35,333	\$37,920	\$4,157	\$2,855	(\$174)	\$80,211	2034	\$1,906,154	\$1,623,906	85.2%
2037	\$34,207	\$39,664	\$4,281	\$2,873	(\$174)	\$80,856	2035	\$1,928,363	\$1,655,111	85.9%
2038	\$33,138	\$41,409	\$4,410	\$2,897	(\$174)	\$81,600	2036	\$1,948,746	\$1,684,127	86.6%
2039	\$32,168	\$43,250	\$4,542	\$2,944	(\$174)	\$82,710	2037	\$1,967,740	\$1,710,887	86.9%
2040	\$31,288	\$45,129	\$4,678	\$2,986	(\$174)	\$83,907	2038	\$1,985,070	\$1,735,226	87.4%

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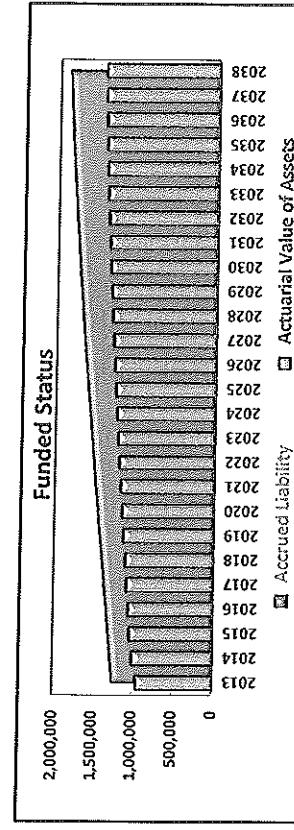
CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

3.00%
7.00%
3.00%
15
15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



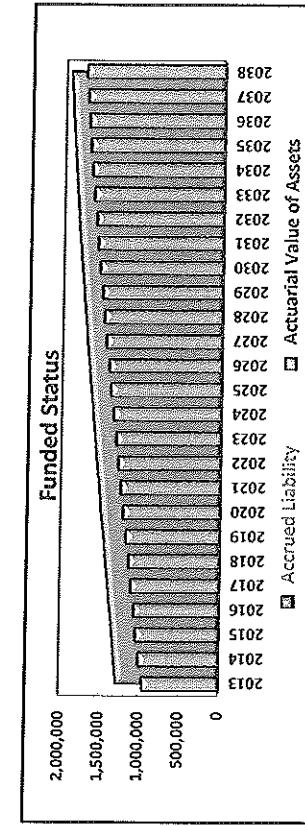
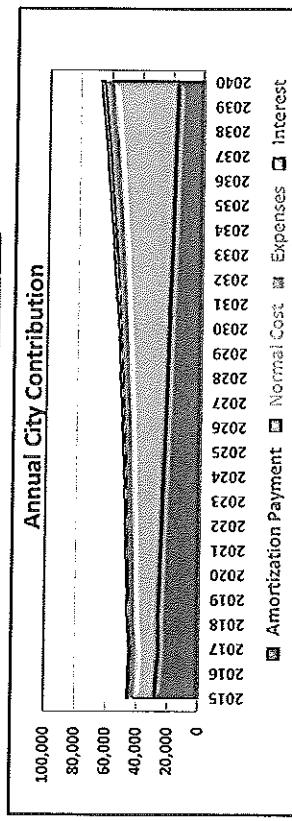
227

FYE	Amort. Payment	Normal Cost	Interest	Old Plan Offsets	Annual City Contrib.	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
2015	12,434	2,522	1,641	(952)	42,526	2013	1,258,182	963,269	76.6%
2016	25,427	13,132	2,509	1,631	41,996	2014	1,285,399	1,005,916	78.3%
2017	24,827	13,844	2,402	1,631	41,692	2015	1,314,213	1,041,327	79.2%
2018	26,109	14,489	2,442	1,688	44,244	2016	1,343,896	1,057,011	78.6%
2019	26,638	15,164	2,515	1,739	45,563	2017	1,375,268	1,082,479	78.7%
2020	27,319	16,014	2,590	1,802	50,383	2018	1,403,440	1,102,859	78.8%
2021	28,038	16,934	2,668	1,885	49,231	2019	1,431,309	1,123,634	78.5%
2022	28,763	17,657	2,748	1,929	50,923	2020	1,460,415	1,144,267	78.4%
2023	29,462	18,407	2,830	1,989	52,514	2021	1,489,421	1,165,587	78.3%
2024	30,157	19,286	2,915	2,054	54,238	2022	1,520,030	1,188,559	78.2%
2025	30,869	20,228	3,003	2,122	56,048	2023	1,546,039	1,206,796	78.1%
2026	31,581	21,242	3,093	2,194	57,945	2024	1,573,043	1,225,830	77.9%
2027	32,323	22,279	3,186	2,267	59,881	2025	1,600,302	1,245,020	77.3%
2028	33,060	23,255	3,281	2,338	61,860	2026	1,627,339	1,264,459	77.7%
2029	33,793	24,272	3,380	2,411	63,682	2027	1,655,482	1,285,048	77.6%
2030	34,531	25,353	3,481	2,486	65,577	2028	1,679,094	1,299,552	77.4%
2031	35,275	26,493	3,585	2,564	67,741	2029	1,702,443	1,315,023	77.2%
2032	36,023	27,682	3,693	2,644	69,858	2030	1,727,298	1,331,350	77.1%
2033	36,775	28,925	3,804	2,727	72,057	2031	1,750,584	1,346,773	76.9%
2034	37,528	30,223	3,918	2,812	74,307	2032	1,773,666	1,361,174	76.7%
2035	38,282	31,577	4,036	2,899	76,620	2033	1,795,198	1,374,421	76.6%
2036	39,036	32,950	4,157	2,989	78,938	2034	1,815,421	1,386,359	76.5%
2037	39,788	34,454	4,281	3,081	81,440	2035	1,834,161	1,396,328	76.4%
2038	40,535	36,062	4,410	3,176	83,952	2036	1,851,230	1,405,656	75.9%
2039	41,284	37,608	4,542	3,273	86,533	2037	1,865,423	1,412,653	75.7%
2040	42,024	39,233	4,678	3,373	89,184	2038	1,879,518	1,417,618	75.4%

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.75%
Actual Return on Assets	7.75%
Amortization Growth Rate	3.00%
Amortization Period	15
Minimum Period	15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

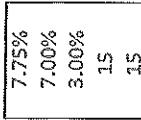
		Annual City Contribution	Old Plan Offsets	Old Plan Contrib.	Valuation Date	Accrued Liability	Actuarial Value of Assets	Funded Ratio
FYE	Amort. Payment	Normal Cost	Expenses	Interest	2013	1,289,517	963,269	74.7%
2015	29,622	13,589	2,322	1,725	45,146	45,474	2014	1,005,441
2016	27,963	14,259	2,402	1,762	48,920	48,599	2015	1,346,508
2017	26,902	15,038	2,486	1,686	45,039	45,039	2016	1,376,781
2018	27,428	15,730	2,442	1,734	42,2	45,852	2017	1,408,576
2019	26,987	16,455	2,515	1,748	49,1	47,214	2018	1,436,980
2020	26,491	17,356	2,590	1,765	50,9	47,702	2019	1,474,629
2021	26,012	18,229	2,663	1,784	48,519	48,519	2020	1,496,205
2022	25,538	19,108	2,748	1,802	49,022	49,022	2021	1,495,396
2023	25,059	19,915	2,830	1,837	49,427	49,427	2022	1,525,018
2024	24,538	20,854	2,915	1,837	49,710	49,710	2023	1,555,273
2025	24,054	21,859	3,003	1,860	50,602	50,602	2024	1,583,030
2026	23,563	22,938	3,093	1,887	51,327	51,327	2025	1,610,730
2027	23,124	24,042	3,186	1,915	52,093	52,093	2026	1,638,793
2028	22,671	25,088	3,281	1,941	52,807	52,807	2027	1,667,193
2029	22,228	26,178	3,380	1,969	53,571	53,571	2028	1,699,779
2030	21,773	27,335	3,481	2,000	54,415	54,415	2029	1,720,414
2031	21,339	28,552	3,585	2,034	55,326	55,326	2030	1,745,387
2032	20,914	29,825	3,693	2,070	56,328	56,328	2031	1,537,803
2033	20,497	31,154	3,804	2,109	57,390	57,390	2032	1,380,395
2034	20,089	32,540	3,918	2,150	58,523	58,523	2033	1,414,433
2035	19,688	33,987	4,036	2,195	59,732	59,732	2034	1,449,058
2036	19,295	35,496	4,157	2,242	61,016	61,016	2035	1,477,562
2037	18,908	37,070	4,281	2,291	62,376	62,376	2036	1,507,279
2038	18,529	38,712	4,410	2,344	63,821	63,821	2037	1,537,803
2039	18,156	40,426	4,542	2,400	65,350	65,350	2038	1,567,485
2040	17,789	42,213	4,678	2,460	66,956	66,956		

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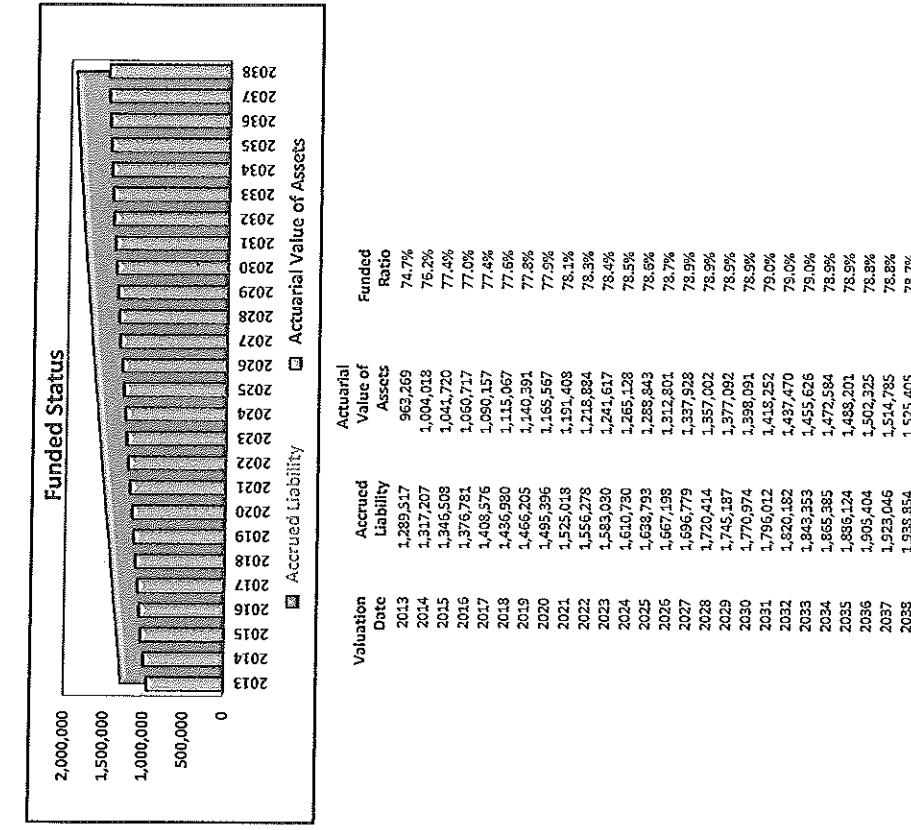
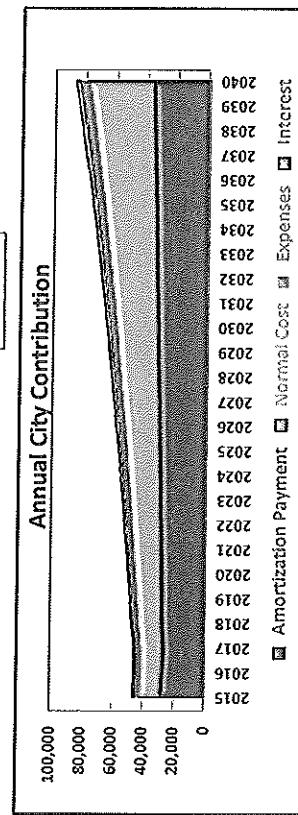
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 7.75%
 Actual Return on Assets
 7.00%
 Amortization Growth Rate
 3.00%
 Amortization Period
 15
 Minimum Period
 15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

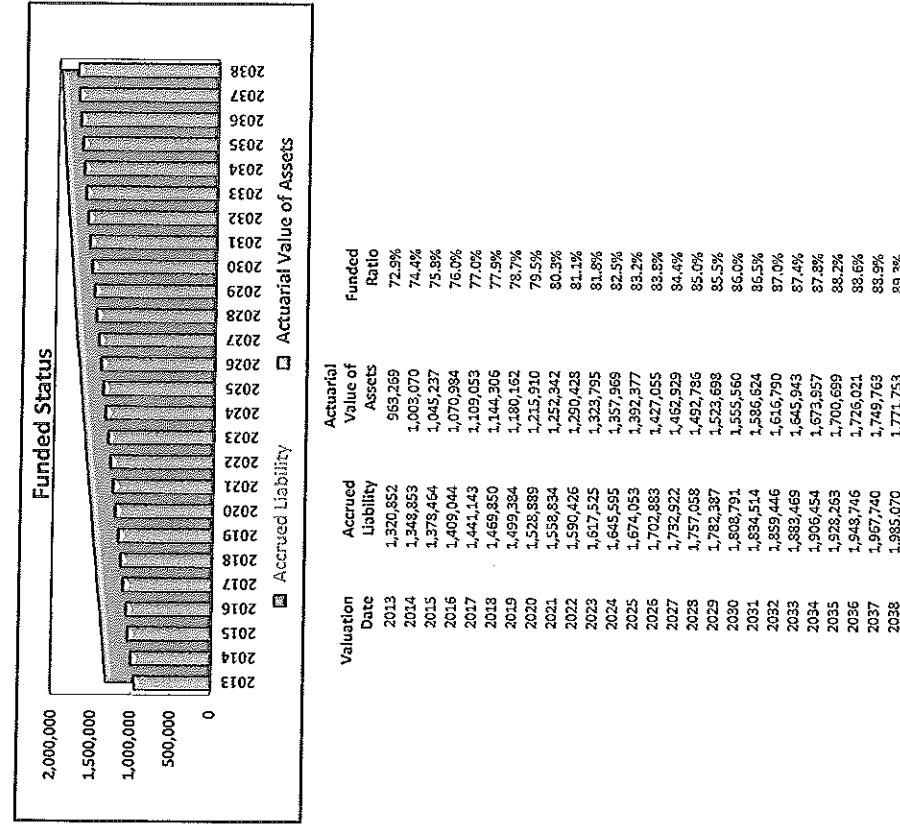
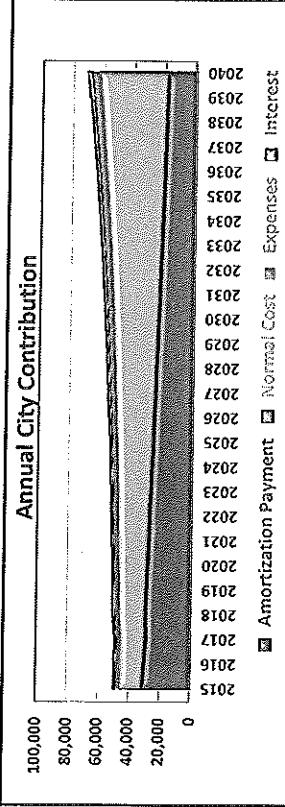


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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.50%
3.00%
15
15



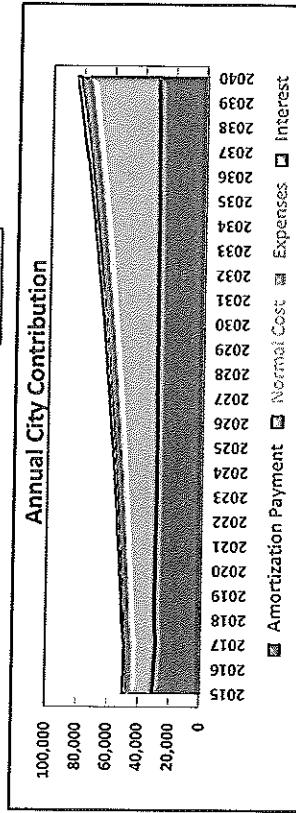
230

We have relied on the valuation results and actuarial methods and assumptions used by Holcier & Holcomb in their July 1, 2013 actuarial valuation report. We make no judgment as to the appropriateness of their actuarial methods or assumptions or the accuracy of their calculations. This work product was prepared solely for the City 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.

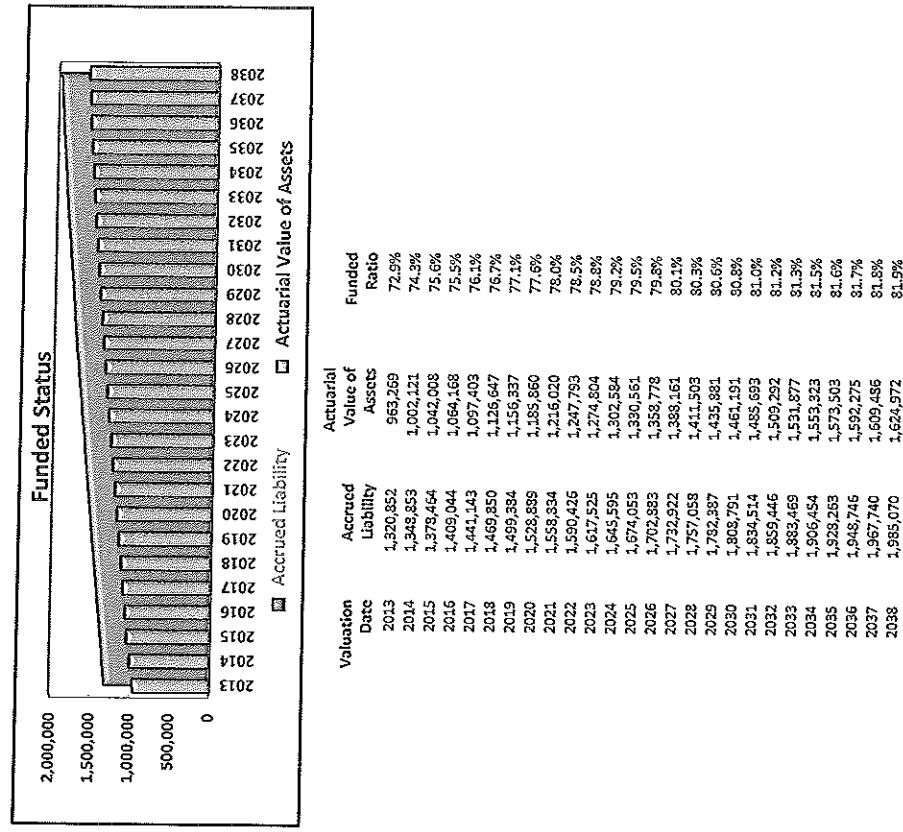
CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.00%
3.00%
15
15



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

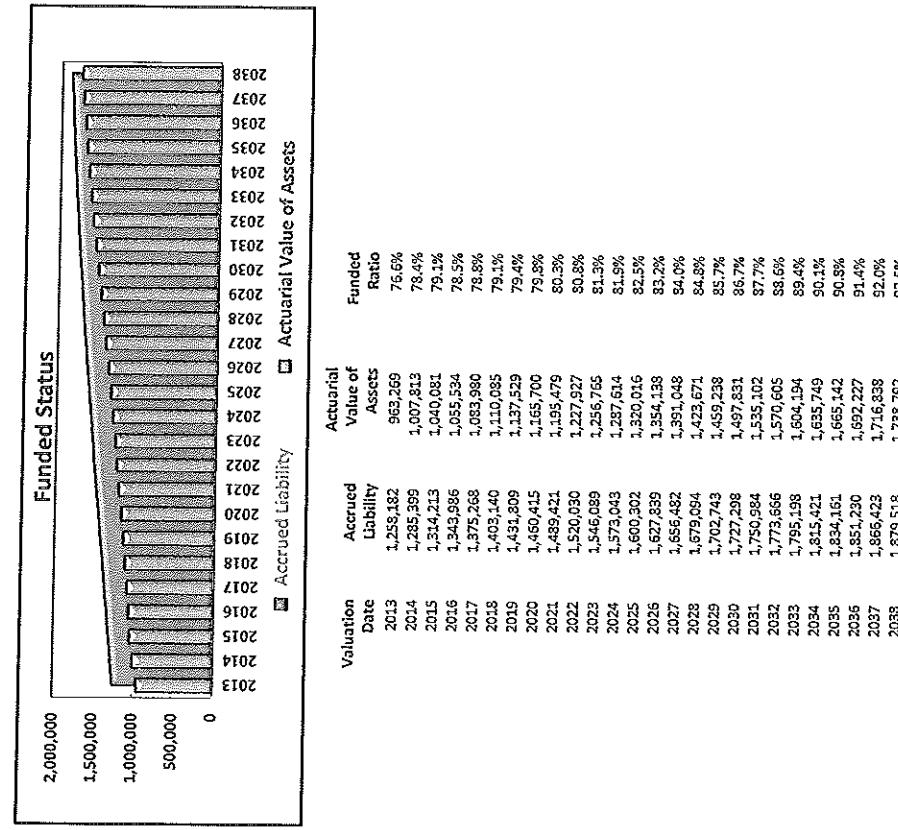
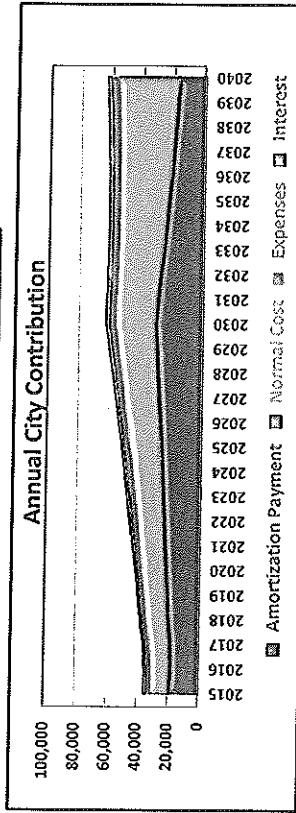


231

We have relied on the valuation results and actuarial methods and assumptions used by Hocker & Holcombe in their July 1, 2013 actuarial valuation report. We make no judgment as to the appropriateness of their actuarial methods or assumptions or the accuracy of their calculations. This work product was prepared solely for the City for the purpose 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 advised by their own actuary or other qualified professional when reviewing the Milliman work product.

CITY OF HARTFORD MERR - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	8.00%
Actual Return on Assets	8.00%
Amortization Growth Rate	3.00%
Amortization Period	25
Minimum Period	10

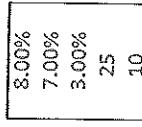


232

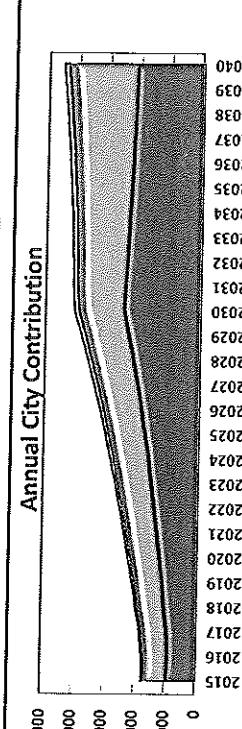
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CITY OF HARTFORD MERR - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period



Annual City Contribution

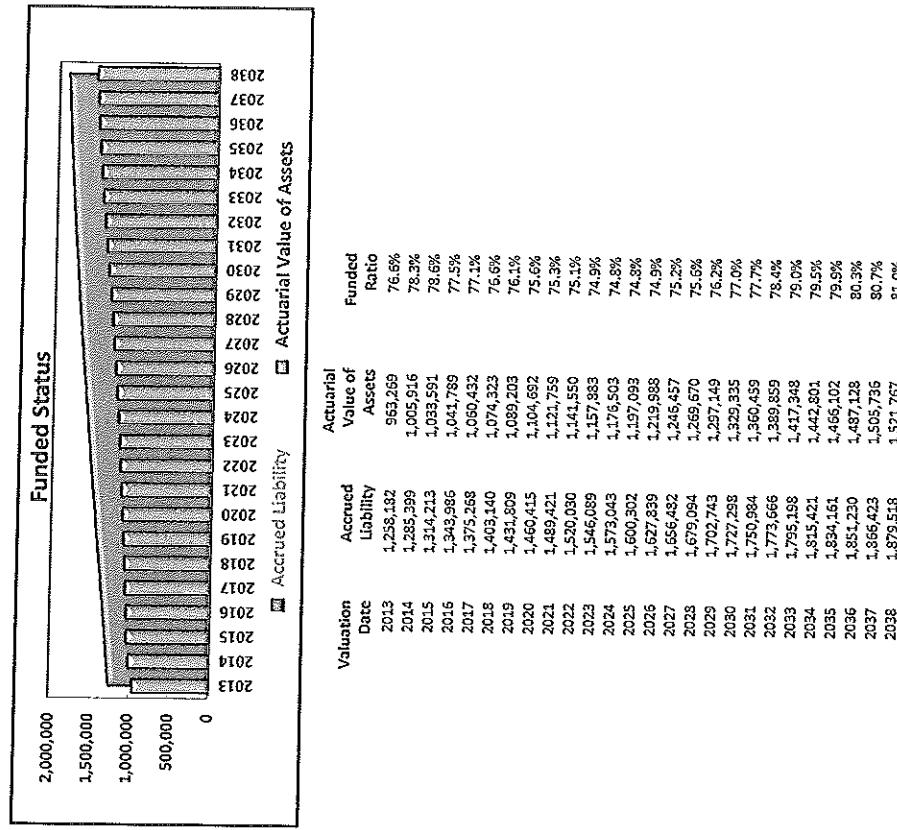


Amortization Payment Normal Cost Expenses Interest

FYE	Amort. Payment	Normal Cost	Expenses	Interest	Old Plan Offsets	Annual City Contrib.
2015	19,665	12,484	2,522	1,960	(952)	35,053
2016	19,044	13,132	2,509	1,961	(952)	36,229
2017	19,570	13,844	2,492	1,905	(952)	39,564
2018	21,605	14,489	2,442	1,512	(484)	41,597
2019	23,120	15,164	2,515	1,601	(493)	44,660
2020	24,854	16,014	2,590	1,705	(503)	47,888
2021	26,717	16,834	1,813	(274)		47,888
2022	28,693	17,657	2,748	1,926	(174)	50,830
2023	30,754	18,407	2,830	2,040	(174)	53,867
2024	32,961	19,286	2,915	2,164	(174)	57,152
2025	35,319	20,228	3,003	2,297	(174)	60,573
2026	37,751	21,242	3,093	2,440	(174)	64,452
2027	40,279	22,279	3,186	2,591	(174)	68,461
2028	43,266	23,255	3,281	2,749	(174)	72,557
2029	46,718	24,272	3,380	2,918	(174)	77,114
2030	50,211	25,353	3,481	3,101	(174)	81,972
2031	49,741	26,491	3,585	3,131	(174)	82,774
2032	48,905	27,682	3,683	3,146	(174)	83,152
2033	47,893	28,295	3,804	3,158	(174)	83,611
2034	47,069	30,223	3,918	3,168	(174)	84,222
2035	46,338	31,577	4,036	3,215	(174)	84,992
2036	45,697	32,990	4,157	3,250	(174)	85,320
2037	45,138	34,464	4,281	3,291	(174)	87,000
2038	44,652	36,002	4,410	3,337	(174)	88,227
2039	44,234	37,508	4,542	3,389	(174)	89,599
2040	43,874	39,283	4,678	3,446	(174)	91,407

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Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

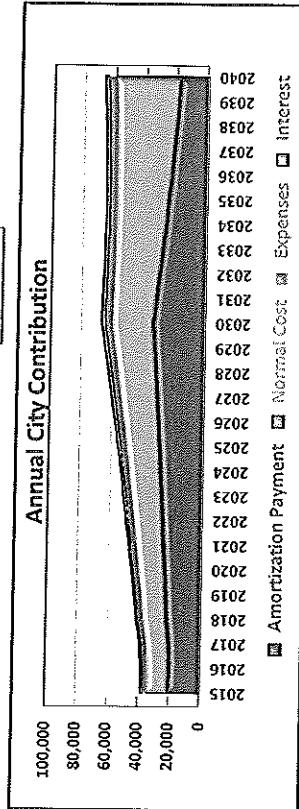


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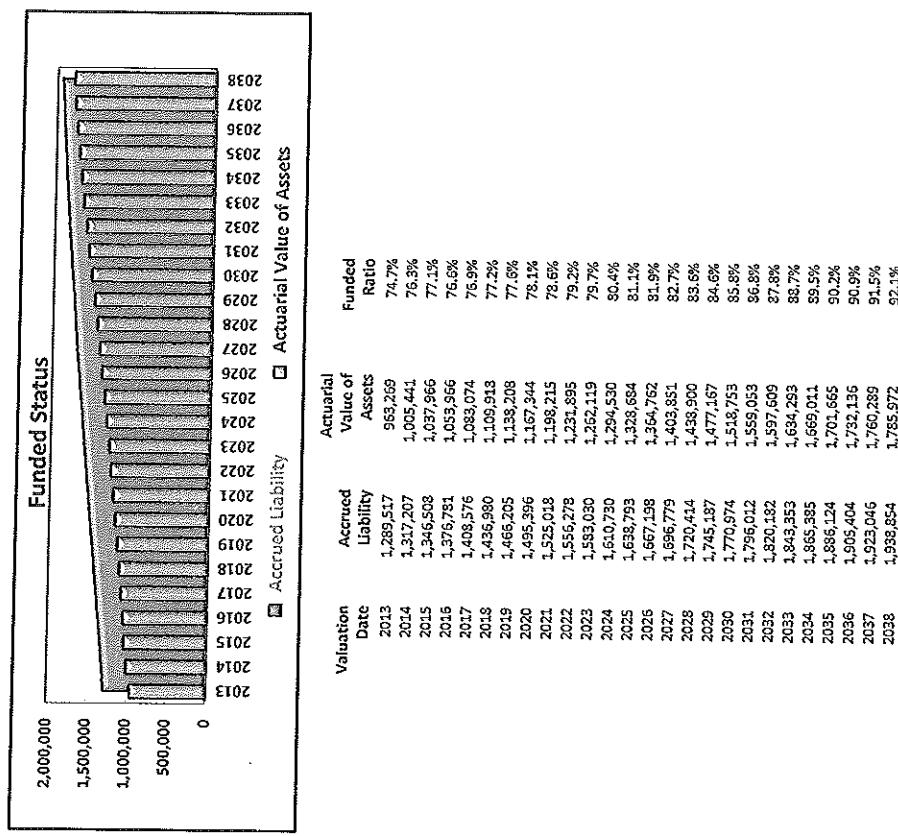
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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.75%
Actual Return on Assets	7.75%
Amortization Growth Rate	3.00%
Amortization Period	25
Minimum Period	10



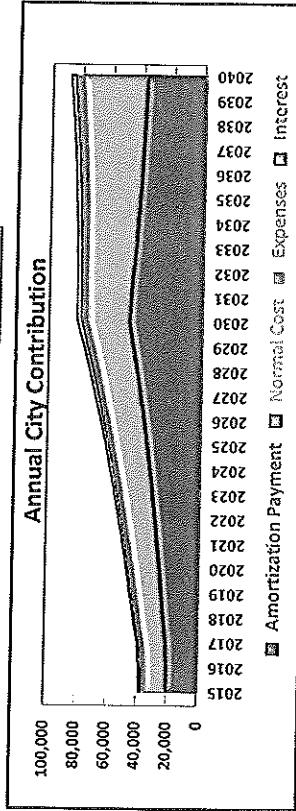
FYE	Amort.	Normal Cost	Interest	Old Plan Offsets	Annual City Contrib.
2015	\$21,274	\$13,589	\$2,522	\$1,422	\$46,207
2016	\$20,789	\$14,280	\$2,509	\$1,429	\$46,498
2017	\$21,073	\$15,038	\$2,402	\$1,466	\$47,507
2018	\$22,620	\$15,730	\$2,442	\$1,551	\$50,000
2019	\$23,446	\$16,455	\$2,515	\$1,613	\$52,574
2020	\$24,268	\$17,356	\$2,590	\$1,681	\$55,605
2021	\$25,129	\$18,229	\$2,668	\$1,750	\$58,957
2022	\$26,019	\$19,198	\$2,748	\$1,821	\$62,598
2023	\$26,911	\$19,945	\$2,830	\$1,888	\$66,529
2024	\$27,826	\$20,854	\$2,915	\$1,962	\$70,643
2025	\$28,784	\$21,859	\$3,003	\$2,040	\$75,027
2026	\$29,782	\$22,838	\$3,093	\$2,122	\$80,002
2027	\$30,824	\$24,042	\$3,186	\$2,208	\$85,208
2028	\$31,908	\$25,088	\$3,281	\$2,292	\$90,681
2029	\$33,027	\$26,178	\$3,380	\$2,380	\$96,381
2030	\$34,196	\$27,335	\$3,451	\$2,472	\$102,303
2031	\$32,557	\$28,552	\$3,585	\$2,460	\$108,599
2032	\$30,638	\$29,825	\$3,693	\$2,440	\$115,307
2033	\$28,784	\$31,154	\$3,804	\$2,424	\$122,365
2034	\$27,036	\$32,540	\$3,918	\$2,414	\$130,012
2035	\$25,395	\$33,987	\$4,036	\$2,412	\$138,012
2036	\$23,854	\$35,496	\$4,157	\$2,415	\$146,353
2037	\$22,407	\$37,070	\$4,281	\$2,425	\$155,035
2038	\$21,047	\$38,712	\$4,410	\$2,440	\$164,024
2039	\$19,770	\$40,426	\$4,542	\$2,452	\$173,215
2040	\$18,571	\$42,213	\$4,678	\$2,469	\$182,594



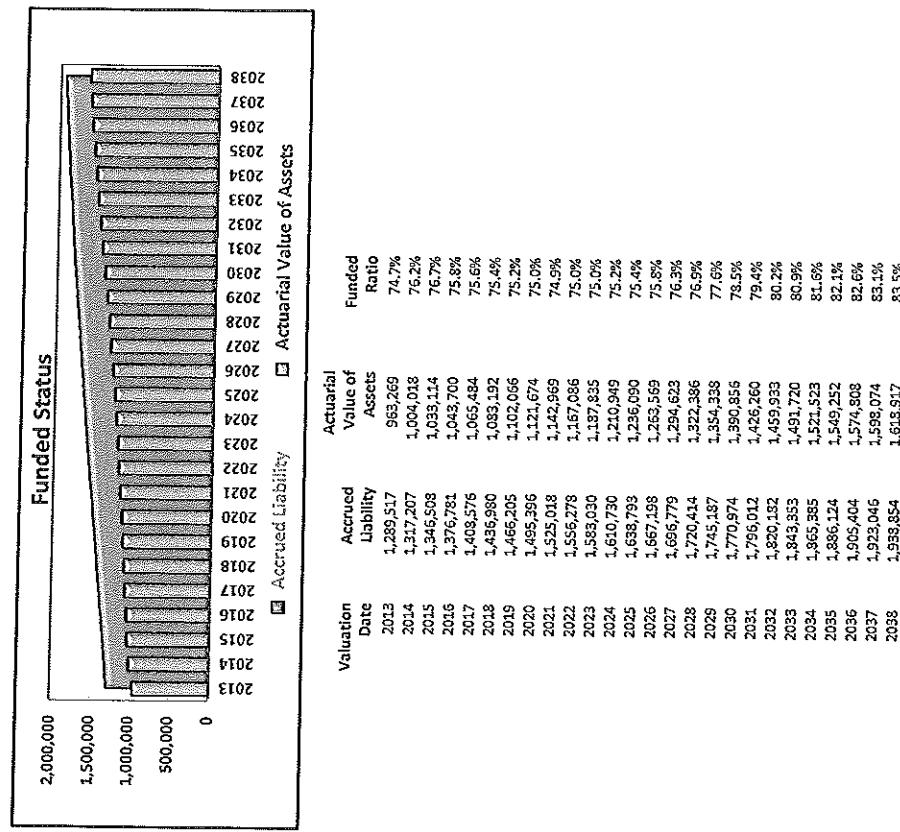
Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption
 7.75%
 Actual Return on Assets
 7.00%
 Amortization Growth Rate
 3.00%
 Amortization Period
 25
 Minimum Period
 10



Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.



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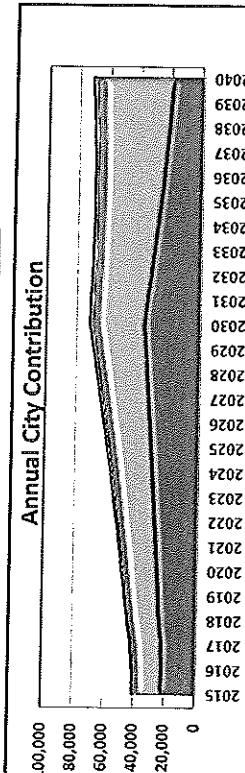
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CITY OF HARTFORD MERR - Long-term Projection Based on July 1, 2013 Valuation

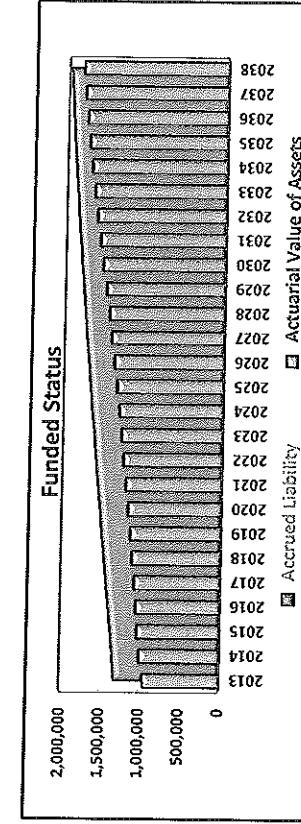
Interest Rate Assumption
 Actual Return on Assets
 Amortization Growth Rate
 Amortization Period
 Minimum Period

7.50%
7.50%
3.00%
25
10

Annual City Contribution



Funded Status



236

Projection Assumptions: The City always pays the Annual City Contribution. There are no plan changes, assumption changes, funding method changes, or actuarial gains / losses. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

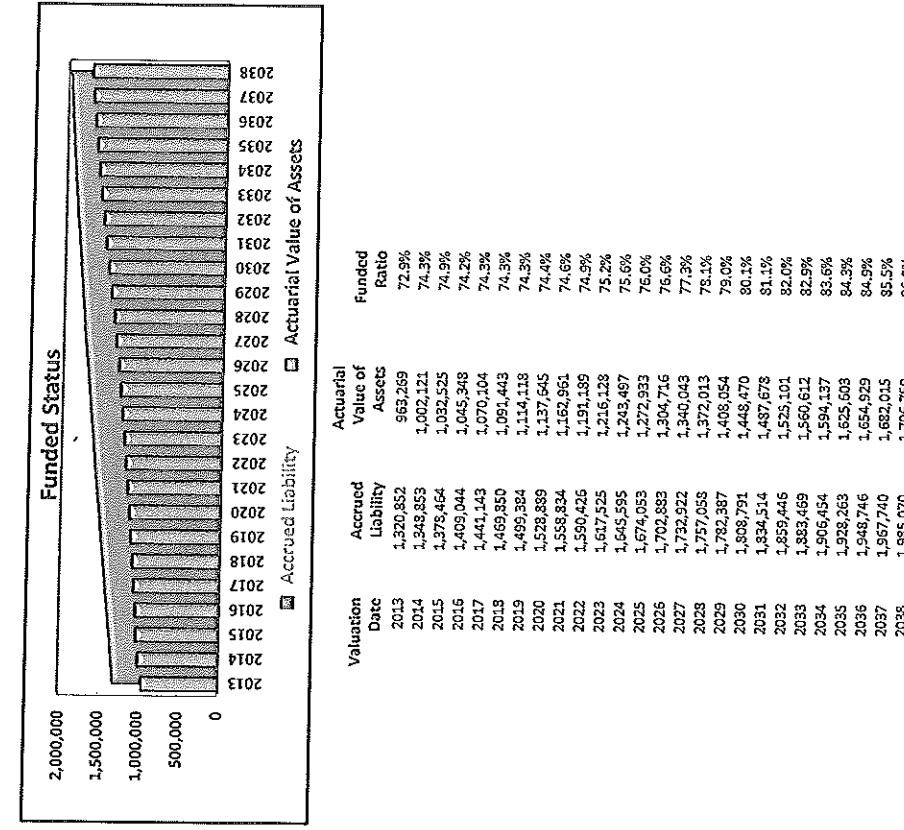
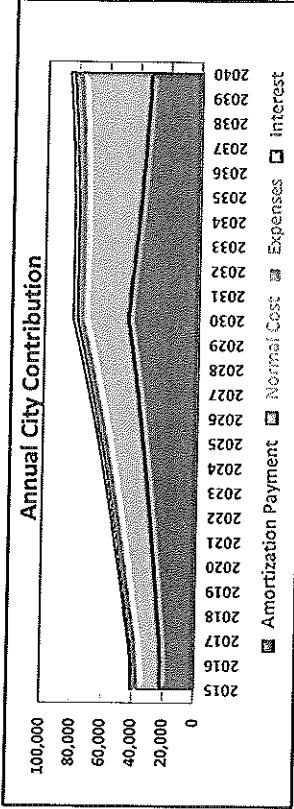
Milliman

4/18/2014

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CITY OF HARTFORD MERF - Long-term Projection Based on July 1, 2013 Valuation

Interest Rate Assumption	7.50%
Actual Return on Assets	7.00%
Amortization Growth Rate	3.00%
Amortization Period	2.5
Minimum Period	1.0



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