
City of Lawrence,
Kansas Retiree
Healthcare Plan

Actuarial
Valuation as of
January 1, 2011



Gregory M. Stump, FSA

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Karen T. Earley, FSA

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Summary of Results

Executive Summary

EFI Actuaries, under contract with the City of Lawrence (the City), performed an actuarial valuation of the City's retiree healthcare benefits as of January 1, 2011. This report contains the results of the valuation. The purposes of this actuarial valuation are:

- To compute the annual contribution required to fund the healthcare benefits of the City's current and future retirees on an actuarial basis.
- To discuss various issues associated with the determination of the annual contribution, including considerations related to the method of funding the benefits, and the uncertainties involved in the projection of these benefits.
- To present items which are required for disclosure under Statements No. 43 and 45 of the Governmental Accounting Standards Board (GASB).

Assuming pay-as-you-go funding continues, the actuarial cost as of January 1, 2011 is 4.65%, measured as a percentage of payroll. Projecting pay to Fiscal Year 2012, the corresponding dollar amount of this cost is \$2.1 million.

The total City contribution for FY2012 is expected to be approximately \$623,000 (1.4% of projected payroll). This figure represents the amount of the total claims paid on behalf of retirees and their dependents for FY2012, less contributions from such retirees.

Table 1: Summary of OPEB Actuarial Liabilities and Costs

(\$ millions)	January 1, 2009	January 1, 2011
Fully Projected Liability	\$ 26.9	\$ 34.9
Entry Age Normal Actuarial Accrued Liability (AAL)	16.2	21.3
Normal Cost	0.9	1.2
Normal Cost as a Percentage of Pay	2.07%	2.73%
Amortization of Unfunded AAL as a Percentage of Pay	1.33%	1.92%
Total Cost as a Percentage of Pay	3.40%	4.65%
Projected Cost for Fiscal Year 2011	\$ 1.6	N/A
Projected Cost for Fiscal Year 2012	N/A	\$ 2.1
Projected Cost for Fiscal Year 2013	N/A	\$ 2.1

The results in **Table 1** above are based on the Entry Age Normal funding method with a 26-year level percentage of payroll amortization of the unfunded actuarial accrued liability (UAAL) and the current pay-as-you-go funding arrangement, using a corresponding discount rate of 4.0%, which represents the expected return on general assets for the City. Both of these are consistent with the prior valuation.

Table 2: Change in Actuarial Cost from Prior Valuation

	ARC (% of Payroll)
Rate as of January 1, 2009 (for fiscal years 2010 & 2011)	3.40%
Change Due to:	
Demographic Experience	0.50%
Changes in Healthcare Assumptions (other than trend)	0.32%
Change in Medical Trend	0.43%
Total Change	1.25%
Rate as of January 1, 2011 (for fiscal years 2012 & 2013)	4.65%

Changes from the prior valuation can be summarized as follows:

- Demographic Experience: Demographic experience is isolated by taking into account only changes in the plan population since 2009, and projecting healthcare costs forward two years based on the information used for the prior valuation.

A slight decrease in the active population combined with smaller salary increases than expected resulted in a decrease in the covered payroll used to calculate the contribution rates. This resulted in an increase in the Plan cost of 0.50%, when expressed as a percentage of pay. Other demographic gains and losses can occur because of status changes other than expected, including retirements, deaths, disabilities, and terminations.

- Healthcare Assumptions (other than medical trend): The change in healthcare assumptions (other than medical trend) resulted in a net increase in the Plan cost rate of 0.32%, due to the following:
 - Expected claims were increased to be more consistent with current premium equivalents, which have increased by approximately 41% since 2009, causing the contribution rate to increase by 0.61%. 2011 premium equivalents were approximately 2% less than expected based on the prior valuation.
 - The aging rates used to calculate the age-adjusted premiums were updated to incorporate 2010 claims experience. In the past, we have not received actual age-banded claims from the City and a set of standardized rates were used for this assumption. While these rates are reasonable and appropriate for the Plan, using actual Plan experience is preferred when developing these rates.

This year we received actual age-banded claims for the City for 2010 (medical only) from Hays Companies, along with a normalized set of claims, representing an overall average of 2010 claims for a larger group with similar benefit provisions. The aging rates were updated to incorporate this information, causing a decrease in the Plan cost rate of 0.29%.

The combined impact of these two changes was an increase in Plan cost of 0.32% of pay.

- Medical Trend: The change in the medical inflation assumption (trend) increased the Plan cost by 0.43% of pay. The projected trends reflect the additional expected costs over the next few years associated with the Patient Protection and Affordable Care Act, the health care reform law enacted in 2010. Key provisions effective January 1, 2011 are the elimination of lifetime limits on medical coverage and the requirement to offer coverage for dependent children up to age 26.

The City's medical plan is currently unlimited; however, the changes in legislation are expected to be passed through in the form of higher stop-loss premiums. Hays Companies estimates a 1%-3% increase in claims expense in 2011 due to the change in dependent coverage.

Actuarial Certification

This report has been prepared for use by the City of Lawrence (the City). Accordingly, this report may not be distributed to any third party outside the City without EFI's written consent. If distribution of the report is made outside of the City, the report must be provided in its entirety. This report is a complex analysis that assumes a high level of technical knowledge concerning the City's operations, and uses the City's data, which EFI has not audited.

On the basis of the forgoing, we hereby certify that, to the best of our knowledge and belief, the report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial methods and procedures which are consistent with the applicable Actuarial Standards of Practice of the American Academy of Actuaries. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Gregory M. Stump, FSA, MAAA



Karen T. Earley, FSA, MAAA

Section 1:

Summary of Plan Provisions, Member Statistics, and Actuarial Assumptions

1.1: Brief Outline of Plan Provisions

Benefit Eligibility

To be eligible for healthcare benefits under the Plan, an employee must terminate service with the City and be receiving a KPERS or KP&F retirement or disability service benefit. For KP&F members, the criteria for retirement are: age 50 and 20 years of service (early retirement), 32 years of service (Tier I), and age 60 with 15 years of service (Tier II). For non-KP&F members, the criteria are age 65, age 62 with 10 years of service, or age plus service of at least 85 (“points”).

To receive medical benefits the employee or surviving spouse/dependent must be making the required premium contribution on a timely basis. The dependents of a retiree shall be eligible for coverage to the same extent as the dependents of active employees.

Benefits to the retiree are no longer payable once the member is eligible for Medicare (i.e. reaches age 65). The dependents of a retiree who has died or attained age 65 may continue coverage as allowed by COBRA, for a period of up to 36 months. In this case, the premium paid by the dependents shall be 102% of the total monthly premium equivalent.

Medical Benefits

The Plan is self-funded: the City pays the total claims, less any contributions made by retirees. Currently, the retiree pays 80% of the full premium equivalent amounts for retiree and dependent coverage. The premium equivalent amounts for the various plans (Medical, Prescription Drug, and Dental) as of the valuation date are shown below:

Coverage Level	<u>Total Monthly Premium Equivalent Amounts</u>				
	2011		2009		
	Medical/ Prescription Drug*	Dental	Medical	Prescription Drug	Dental
Retiree Only	\$ 461.00	\$ 29.00	\$ 267.37	\$ 59.00	\$ 23.00
Retiree & Child(ren)	\$ 891.00	\$ 62.00	\$ 518.69	\$ 112.69	\$ 47.53
Retiree & Spouse	\$ 990.00	\$ 58.00	\$ 574.86	\$ 126.86	\$ 51.38
Family	\$1,421.00	\$ 91.00	\$ 826.20	\$ 180.55	\$ 75.03

* Medical and Prescription drug coverage are bundled beginning in 2011

Pre-Funding

The cost of the benefits provided by the Plan is currently being paid by the City on a pay-as-you-go basis.

Changes in Plan Provisions

There have been no changes in Plan provisions since the prior valuation.

1.2: Participant Data

Data on active and inactive employees and their beneficiaries as of January 1, 2011 was supplied by the City on electronic media. Participant data was reviewed for reasonableness and consistency but was neither verified nor audited.

A summary of data as of January 1, 2011 is shown below. Total members as of January 1, 2009 are also shown for comparison purposes.

	<u>January 1, 2011</u>			<u>January 1, 2009</u>
	General Members	Safety Members	Total Members	Total Members
Active Participants				
Number of Participating Actives	489	270	759	780
Average Age	44.4	40.1	42.9	42.0
Average Service	11.4	12.9	11.9	11.0
Average Pay	\$49,454	\$67,266	\$55,790	\$55,400
Inactive Participants				
Number of Retired Participants	17	40	57	56
Average Age	60.5	58.7	59.2	58.2
Number of Disabled Participants	2	1	3	4
Average Age	59.9	34.3	51.4	46.2

The following table is a summary of the current healthcare coverage for the above inactive participants who have elected to purchase health insurance from the City.

Plan Coverage	Medical / Drug Inactive Participants	Dental Inactive Participants
Single Coverage Contracts	37	37
Employee and Spouse Coverage Contracts	18	16
Employee and Child(ren) Coverage Contracts	2	2
Family Coverage Contracts	3	3
Total Contracts	60	58

1.3: Actuarial Methods and Assumptions

Actuarial Method

A full description of the Entry Age Normal Cost Method is as follows:

Normal Cost

- The actuarial liability for all future healthcare benefits payable by the City to current and future retired employees is computed. This is called the Fully Projected Liability.
- Entry age is established based on the service provided in the data from the City.
- A portion of the Fully Projected Liability is assigned for each participant to estimated prior Entry Age Normal costs, based on assumed past earnings. This sum of these portions is called the Actuarial Accrued Liability.
- The excess of the total Fully Projected Liability over the Actuarial Accrued Liability is divided by the present value of future pay to determine the Normal Cost as a percentage of pay. The percentage for each individual is multiplied by their respective pay. The sum of these is the Employer Normal Cost.
- The Employer Normal Cost is divided by the total payroll to determine Employer Normal Cost rate.

Amortization Cost

- The actuarial value of the assets on hand to pay future benefits is subtracted from the Actuarial Accrued Liability, producing the Unfunded Actuarial Accrued Liability.
- The Unfunded Actuarial Accrued Liability determined from this valuation is amortized as a level percentage of pay (assuming 4.00% per year growth in total payroll) over a closed period of 30 years (26 years as of January 1, 2011). The Amortization Rate for a given year is expressed as a percentage of projected active member payroll for that year.
- Amortizations of future gains and losses can be tracked individually and amortized over different periods.

The sum of the Employer Normal Cost Rate and the Amortization Rate is the total City contribution rate.

The City's actuarial cost is determined by multiplying the active payroll by the contribution rate.

Actuarial Value of Plan Assets

There are currently no assets specifically set aside into a separate trust in order to pay for retiree healthcare benefits. Therefore, in accordance with the GASB Statements, the Market Value of Assets and the Actuarial Value of Assets are both equal to \$0. The City does maintain a reserve in the Health Insurance Fund with the intention of paying for future health care costs.

Actuarial Assumptions

Valuation Date	All assets and actuarial liabilities are computed as of January 1, 2011.
Rate of Return	The annual rate of return on assets used to pay for benefits is assumed to be 4.00% (rate of return on general assets).
Inflation	The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.25% per year.
Basis for Demographic Assumptions	In general, the demographic assumptions predicting future member behavior have been taken from the most recently available pension valuation for the covered members – in this case, the December 31, 2009 actuarial valuation of the Kansas Public Employees Retirement System (KPERS). There were no changes to these demographic assumptions since the prior valuation.
Increases in Pay	<p>Assumed pay increases for Covered Employees consist of increases due to inflation (cost of living adjustments) and productivity, and those due to longevity and promotion.</p> <p>Pay increases due to inflation are assumed to increase with the CPI, for an expected rate of 3.25% per year. Pay is also assumed to increase by 0.75% per year for improvements in productivity, for a total general wage increase assumption of 4.0% per year.</p> <p>Salary levels are expected to increase due to promotion/longevity in accordance with service. Representative rates are as follows:</p>

Years of Service	General Increase Rate	Safety Increase Rate
1	6.3%	8.2%
5	2.1%	2.9%
10	1.2%	0.9%
15	0.8%	0.3%
20	0.5%	0.0%
25	0.1%	0.0%
30+	0.0%	0.0%

Participant Mortality Rates of mortality for disabled and retired Covered Employees and their beneficiaries are given by the RP-2000 Healthy Annuitants Table with projected Generational Mortality improvements (computed using Projection Scale AA).

The ages for general members are set forward by two years for males, and set back one year for females.

Service Retirement Rates of retirement for general members are based on the age of the Covered Employee and the eligibility condition. Representative rates are as follows:

Age	Early or Normal Retirement	Rule of 85 – 1 st Year	Rule of 85 – Subsequent Years
53	0.0%	11.0%	10.0%
55	5.0%	13.0%	10.0%
57	5.0%	13.0%	10.0%
59	5.0%	15.0%	12.0%
61	15.0%	25.0%	25.0%
63	20.0%	N/A	N/A
65	35.0%	N/A	N/A
70+	100.0%	N/A	N/A

Rates of retirement for safety members are based on the age of the Covered Employee, their benefit Tier, and the eligibility condition. Representative rates are as follows:

Age	Tier I	Tier II – Early Retirement	Tier II – Normal Retirement
51	5.0%	10.0%	25.0%
53	10.0%	15.0%	25.0%
55	40.0%	N/A	25.0%
57	25.0%	N/A	40.0%
59	35.0%	N/A	55.0%
61	20.0%	N/A	40.0%
63+	100.0%	N/A	100.0%

Disability

Rates of disability are based on the age of the Covered Employee. Representative rates are as follows:

Age	General Members	Safety Members
22	0.03%	0.06%
27	0.05%	0.07%
32	0.08%	0.15%
37	0.12%	0.35%
42	0.17%	0.56%
47	0.27%	0.76%
52	0.46%	0.96%
57	0.70%	1.00%
62	0.95%	1.50%
65 and above	0.00%	0.00%

Termination

Rates of termination are based on the gender and years of service of the Covered Employee. Representative rates are as follows:

Years of Service	<u>General</u>		Safety Tier II
	Male	Female	
1	16.0%	20.0%	13.0%
5	8.3%	9.0%	6.0%
10	3.8%	4.3%	2.5%
15	2.7%	2.8%	1.0%
20	1.8%	1.8%	0.5%
25	1.3%	0.9%	0.0%

Rates of termination for safety members are based on the age of the Covered Employee, their benefit Tier, and the amount of service. For Tier I, the assumption is that 3% will terminate annually below age 41; the rate is 0% thereafter.

No terminations are assumed after eligibility for retirement.

Expected Annual Claims Expected total annual combined medical and pharmacy claims for 2011 are based on the age of the retiree, with representative amounts as follows:

Age	<u>2011 Valuation</u>		<u>2009 Valuation Projected to 2011</u>	
	Retiree	Retiree + Spouse	Retiree	Retiree + Spouse
51	\$ 6,624	\$ 14,224	\$ 6,584	\$ 14,156
55	7,689	16,513	7,494	16,113
59	9,170	19,692	8,634	18,563
63	10,935	23,483	10,119	21,756

Medical Inflation Annual increases in the premium equivalents and expected claims for post-retirement benefits are assumed to be as follows:

Year	<u>1/1/2011</u>		<u>1/1/2009</u>		
	Medical/Rx	Dental	Medical	Rx	Dental
2009	N/A	N/A	15.0%	15.0%	5.0%
2010	N/A	N/A	11.0%	12.0%	5.0%
2011	10.0%	5.0%	9.0%	10.0%	5.0%
2012	8.0%	5.0%	8.0%	9.0%	5.0%
2013	8.5%	5.0%	7.0%	8.0%	5.0%
2014	9.0%	5.0%	6.0%	7.0%	5.0%
2015	8.0%	5.0%	5.0%	5.0%	5.0%
2016	7.0%	5.0%	5.0%	5.0%	5.0%
2017	6.0%	5.0%	5.0%	5.0%	5.0%
2018+	5.0%	5.0%	5.0%	5.0%	5.0%

These rates are based on an analysis of the healthcare plan provisions, anticipated growth in healthcare costs and an evaluation of the past claims experience of the City. The rates also reflect the additional expected costs due to the Patient Protection and Affordable Care Act enacted in 2010. For the prior valuation increases for 2011 were expected to be 9% and 10% for medical and pharmacy benefits, respectively, decreasing to 5% each by 2015.

Expenses Expenses are currently assumed to be 10% of expected claims.

Election of Coverage / Family Composition	65% of active members are assumed to elect retiree coverage for the benefits described above. 50% of these members are assumed to elect family coverage. These assumptions are based on an analysis of the elections and behavior of the current retiree population. Male spouses are assumed to be three years older than their wives.
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Changes in Actuarial Methods and Assumptions

Changes in medical assumptions, including expected annual per capita costs by retiree age, and future increases in costs, were applied and are described above.

There have been no changes to the actuarial methods since the prior valuation.

Section 2:

Actuarial Computations

2.1: Computation of Annual Required Contribution (ARC)

		January 1, 2009	January 1, 2011
(1)	Fully Projected Liabilities		
	Active Members	\$ 23,368,768	\$ 31,037,196
	Inactive Members	<u>3,561,094</u>	<u>3,851,563</u>
	Total Active and Inactive	26,929,862	34,888,759
(2)	EAN Accrued Liabilities		
	Active Members	12,625,309	17,451,844
	Inactive Members	<u>3,561,094</u>	<u>3,851,563</u>
	Total Active and Inactive	16,186,403	21,303,407
(3)	Covered Payroll	43,646,468	42,671,173
(4)	Actuarial Value of Plan Assets:	0	0
(5)	Unfunded Actuarial Liability: (2) – (4)	16,186,403	21,303,407
(6)	Amortization of Unfunded Actuarial Liability: (5) ÷ Amort Factor	578,086	819,362
(7)	As a % of Covered Payroll	1.32%	1.92%
(8)	Normal Cost	905,517	1,164,265
(9)	As a % of Covered Payroll	2.07%	2.73%
(10)	Total Cost	3.40%	4.65%
(11)	Projected Payroll	\$ 45,392,327	\$ 44,378,020
(12)	Projected ARC: (10) x (11)	1,542,947	2,062,972

2.2: Projection of Estimated Post-Retirement Benefits

The following projections are based on the current covered population; any benefits expected to be paid to future new entrants are not included. The projections reflect all benefits expected to be paid by the City on behalf of the retirees. All assumptions are the same as used for the actuarial valuation as of January 1, 2011.

Year	Total Estimated City Retiree Healthcare Payments (\$ millions)
2011	\$ 0.5
2012	0.6
2013	0.7
2014	0.8
2015	1.0
2016	1.2
2017	1.3
2018	1.5
2019	1.4
2020	1.5
2021	1.6
2022	1.7
2023	1.7
2024	2.0
2025	2.3
2026	2.5
2027	2.6
2028	2.7
2029	2.7
2030	2.9
2031	3.0
2032	2.8
2033	2.8
2034	2.7
2035	2.7
2036	2.7
2037	2.7
2038	2.6
2039	2.3
2040	2.3

Section 3:

Disclosure Information

Schedules of Funding Status and Employer Contributions Required Under GASB Statement No. 45

GASB Statement No. 45 require the preparation of schedules of funding status and employer contributions, as well as the disclosure of plan provisions, actuarial assumptions, and other information.

Annual OPEB Cost, Contribution, and Changes in Net OPEB Obligation

	Fiscal 2010	Fiscal 2011	Fiscal 2012
Annual Required Contribution (ARC)	\$ 1,543,000	\$ 1,605,000	\$ 2,063,000
Interest on Net OPEB Obligation	4,000	40,000	83,000
Adjustment to Annual Required Contribution	<u>(4,000)</u>	<u>(37,000)</u>	<u>(80,000)</u>
Annual OPEB cost	\$ 1,543,000	\$ 1,608,000	\$ 2,066,000
Contributions Made*	<u>(644,000)</u>	<u>(529,000)</u>	<u>(623,000)</u>
Increase in Net OPEB Obligation	\$ 899,000	\$ 1,079,000	\$ 1,443,000
Net OPEB Obligation – Beginning of Year	101,000	1,000,000	2,079,000
Net OPEB Obligation – End of Year	\$ 1,000,000	\$ 2,079,000	\$ 3,522,000

* Amounts should be based on actual contributions = Total claims paid on behalf of retirees, less retiree contributions. This will also impact the Net OPEB Obligation amounts for fiscal years 2011 and 2012.

Schedule of Funding Status

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 Percentage of Covered Payroll ((b-a)/c)
1/1/2007	0	5,521,200	5,521,200	0.0%	40,195,095	13.7%
1/1/2009	0	16,186,403	16,186,403	0.0%	43,646,468	37.1%
1/1/2011	0	21,303,407	21,303,407	0.0%	42,671,173	49.9%

Summary of Information

Valuation Date:	January 1, 2011
Actuarial Cost Method:	Individual Entry Age Normal
Amortization Method:	Level percentage of pay, closed period
Remaining Amortization Period:	26 Years
Asset Valuation Method:	N/A
Investment Rate of Return:	4.0% per annum
Projected Salary Increases:	4.0% – 10.5% for General members, 4.0% - 16.0% for Public Safety members (Includes inflation at 3.25%)
Projected Post-Retirement Benefit Cost Increases:	Annual increases in the premium equivalents and expected claims for post-retirement benefits are assumed to be as follows:

<u>Year</u>	<u>Medical/Rx</u>	<u>Dental</u>
2011	10.0%	5.0%
2012	8.0%	5.0%
2013	8.5%	5.0%
2014	9.0%	5.0%
2015	8.0%	5.0%
2016	7.0%	5.0%
2017	6.0%	5.0%
2018+	5.0%	5.0%

Appendix:

Additional Information and Sensitivity Analysis

Background

In 2004, the Governmental Accounting Standards Board (GASB) issued a new set of accounting rules, referred to as Statements 43 and 45, for how public sector employers must measure and report the cost of retiree benefit obligations on their financial statements. These statements cover what are known as “Other Post-Employment Benefits” (OPEB) and include such non-pension benefits as life insurance, dental care coverage and long-term care, as well as retiree health benefits.

In the past, governmental employers have traditionally accounted for these benefits by reporting the cost of those benefit amounts that are actually paid out during the current year. This accounting treatment is closely related to the *pay-as-you-go* funding method that most employers have used to pay for these benefits. The City of Lawrence has been using the pay-as-you-go approach towards the funding and accounting of its OPEB benefits.

The new statements require the use of using accrual-basis accounting methods, which will generally result in a higher current annual cost being reported on the employers’ financial statements. The new statements do not require that these benefits be paid for on a similar basis (i.e. using pre-funding methods). However, governments that elect to pre-fund these benefits will generally be able to report a smaller annual cost for these benefits on their financial statements than if they did not pre-fund.

Pay-as-you-Go Funding:

A method for funding benefits whereby the employer pays the current year’s benefits from the operating funds of the employer

Accrual-basis Accounting:

A method that recognizes costs when an employee earns a benefit, not when the benefit is actually paid

Pre-Funding:

A method for funding whereby the employer sets aside (and generally invests) assets to pay for future benefits

Funding Policy and Implications

To demonstrate the effects of pre-funding benefits, we have determined the City’s cost based on several scenarios:

1. Full pre-funding of benefits – This implies that the City will consistently contribute an amount equal to the Annual Required Contribution (ARC) as defined by GASB 45.
2. Continuing pay-as-you-go funding – This entails no intended pre-funding, and that all future benefits will be paid from the City’s general assets.
3. Partial pre-funding of benefits – This involves contributing an amount which is higher than the pay-as-you-go cost, but lower than the ARC under full pre-funding. In particular, it is assumed that the City will pre-fund an amount annually which is halfway between the pay-as-you-go cost and the full pre-funding ARC.

GASB Statement 43 has particular requirements pertaining to the legal structure of a trust fund when determining whether assets can be considered to be accumulated for the purposes of pre-funding the OPEB benefits, specifically:

- Contributions to the plan are irrevocable
- Plan assets are dedicated to providing benefits to their retirees and their beneficiaries in accordance with the terms of the plan
- Plan assets are legally protected from creditors of the employer or plan administrator

The City must satisfy these requirements if it wishes to use these assets to offset the retiree healthcare liabilities for GASB purposes.

The key difference between the three funding strategies described above is in the selection of the discount rate (or investment return assumption) used to determine liabilities and costs. As required by GASB Statements 43 and 45, the return assumption must correspond with the assets used to support the benefits. For a plan with a full pre-funding policy, the expected return on plan assets may be used. For an unfunded plan (i.e. pay-as-you-go), the City's expected rate of return on general funds will be required. For a plan with a partial-funding policy, those liabilities which are being pre-funded can be discounted at the expected return on plan assets, while those liabilities which are not being pre-funded must be discounted at the expected rate of return on the general fund.

Discount Rate:

The interest rate used to calculate the value today of money that will be needed in the future.

Unfunded Actuarial Accrued Liability:

The value in today's dollars of future benefits that workers have earned based on the service to the current date.

Annual Required Contribution (ARC): The amount of money that should be set aside during the year to cover both the value of benefits accrued by active workers during the year (Normal Cost) and the portion of the unfunded actuarial liability that is being paid that year.

The discount rate is a key economic assumption, and has a substantial impact on the determination of liabilities and costs. A lower discount rate leads to a higher present value of future benefits, and subsequently higher calculated liabilities and actuarial costs.

For illustrative purposes, **Table A-1** on the next page shows the determination of liabilities and the ARC under alternate funding policies. The discount rates in each case are based on some combination of the City's expected return on general assets and the expected return from a trust fund. The latter assumption would depend on the actual investment mix selected for the trust fund.

The Entry Age Normal actuarial cost method with a 26-year level percentage of payroll amortization of the UAL has been used to determine the liabilities and costs in all cases. (For additional information on the Entry Age Normal method refer to Section 1.3)

Table A-1: Summary of Liabilities and Cost (ARC) Under Various Funding Policies

(\$ millions)	Pay As You Go	Full Pre-Funding	Partial Pre-Funding*
Discount Rate	4.00%	7.50%	5.75%
Fully Projected Liability	\$ 34.9	\$ 20.3	\$ 26.2
Unfunded Actuarial Accrued Liability	21.3	15.1	17.9
Employer Normal Cost Rate (% of pay)	2.73%	1.34%	1.92%
Total Cost (ARC as a percentage of pay)	4.65%	3.34%	3.89%
Total Cost (ARC) for FY 2012	\$ 2.1	\$ 1.5	\$ 1.7
Funding Policy Contribution Amount (FY2012)	0.6	1.5	1.1

* This scenario is based on an assumed contribution equal to half of the full pre-funding ARC, less the pay-as-you-go cost.

Uncertainties in OPEB Projections: Healthcare Inflation

As can be seen in the discussion above, the decision to pre-fund post-retirement benefits has a large impact on the determination of the OPEB liabilities and costs.

Also, unlike pension plans, which have a relatively predictable pattern of benefits, post-retirement healthcare benefits are much more difficult – if not impossible – to forecast accurately. Pension benefits are based on service and salary, which can be reasonably anticipated. Post-retirement medical benefits are much more variable, as they depend heavily on medical inflation. In fact, healthcare inflation is the most important determinant of the City’s cost over the long term.

In order to calculate future medical benefits, it is common to use relatively high expected medical inflation rates for the next few years, which gradually decrease over time. One explanation for the downward trend in medical inflation rates is that if medical inflation is not controlled, then expenditures in the health-related sectors will constitute an unacceptably large portion of the overall national economy.

Even if medical inflation decreases to the level of general inflation, long-term rates of medical premium rate increases may still exceed the general inflation rate. Medical care premiums often increase faster than medical inflation due to the particulars of the medical coverage, such as the leveraging effect of employee cost-sharing (co-pays, deductibles, etc.) on premium rates. For this reason, a long-term medical inflation assumption is frequently set at a level higher than assumed general inflation.

Table A-2 below demonstrates the impact of medical inflation on costs, showing liabilities and costs under three scenarios. The baseline scenario applies the valuation assumption of initial annual medical inflation of 10% and an ultimate growth rate of 5%. The alternate scenarios assume medical costs increase at rates 1% higher and 1% lower per year than valuation assumptions. In each case, a discount rate of 4.0% and the Entry Age Normal cost method were used.

Table A-2: Summary of Liabilities and Cost (ARC) Under Various Medical Inflation Scenarios

(\$ millions)	Valuation Assumptions	Increased Medical Inflation	Decreased Medical Inflation
Initial Medical/Rx Inflation	10.0%	11.0%	9.0%
Ultimate Medical Inflation	5.0%	6.0%	4.0%
Fully Projected Liability	\$ 34.9	\$ 41.1	\$ 29.8
Entry Age Actuarial Accrued Liability	21.3	24.2	18.8
Employer Normal Cost Rate (% of pay)	2.73%	3.29%	2.27%
Total Cost (% of Pay)	4.65%	5.47%	3.97%
Total ARC, FY2012	\$ 2.1	\$ 2.4	\$ 1.8

Uncertainties in OPEB Projections: Demographic Experience and Healthcare Reform

As new provisions of the healthcare reform legislation take effect over the next few years, it is uncertain how demographic experience such as participation, termination and retirement rates will be affected. Participation in employer-sponsored plans may decline as alternative plan options become available through the exchanges on the open market.

Similarly, termination and retirement rates could experience increases as employees no longer have as strong an incentive to continue employment in order to receive retiree medical benefits. Countering this is the possibility that the weak economy will cause employees to extend employment due to lack of sufficient savings for retirement. Demographic assumptions such as these used in the OPEB valuation should be monitored closely over the next few years as experience emerges.

Another important risk is Plan expenses. Although current year expenses are expected to be slightly higher than 10% (based on the most recent budget memo), our current assumption is based on an analysis of the actual stop-loss premiums and administrative expenses over the past few years and represents a long-term estimate of future expenses. We will monitor this assumption over the next few years to determine whether a different assumption would be more reasonable. As a point of comparison, a long term expense assumption of 12% would increase the current contribution rate by approximately 0.15% of pay.