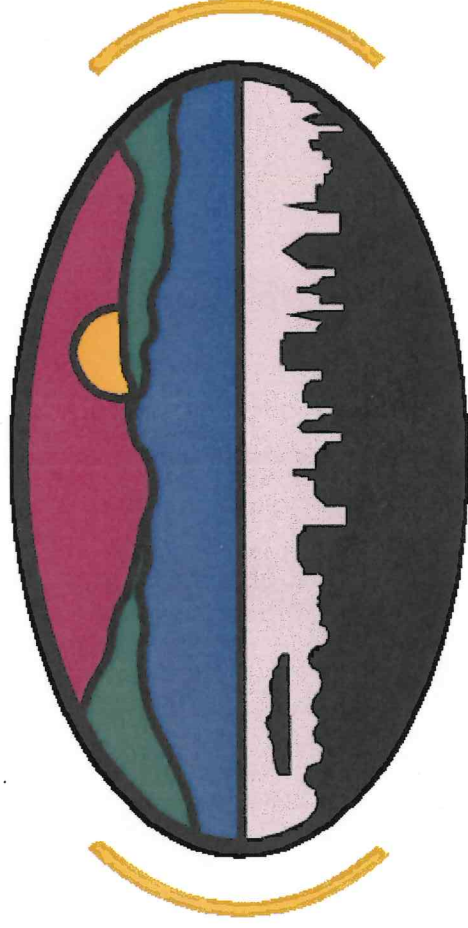


Understanding Actuarial Valuations & Pension Accounting

City Council Work Session

January 28, 2013



Basically Two Types of Plans

- **Defined Benefit (DB)** - a DB plan promises to pay a certain calculated amount at retirement, generally based on age, compensation, and years of service. BERS is a DB plan.
- **Defined Contribution (DC)** – a DC plan defines the amount contributed to the plan, but does not specify a certain benefit at retirement age. The benefit payable at retirement is based on the amount of the annuity that can be purchased at retirement based on the accumulated balance in a participant's account.
- **Other Types of Plans** – there are other types of plans that are essentially hybrids of the above two types.

DB Plans Are Costly

- The Plan Sponsor takes the risk that investment performance will not be at expected levels, and is also responsible to keep payroll costs at or below assumed rates of increase used in the valuation.
- DB plans require an annual actuarial valuation. BERS uses Buck Consultants, a very reputable national firm.
- DB plans require professional asset management, the fees for which are usually deducted directly from the plan's assets, essentially reducing the investment return.

Actuarial Valuations

- Actuaries use various assumptions to attempt to calculate the cost of the annual benefit and match it with the years employees are working.
- There are assumptions for:
 - Assumed rate of return on plan assets
 - Assumed rate of salary increases
 - Assumptions for disability, mortality and other factors

BERS' Actuarial Assumptions

- Funding is determined using the projected unit credit cost method.
- Assumed rate of return is 8% per year.
- Assumed rates of increase in future salaries ranging from 8.8% for a 25 year old to 3.8% for an employee ages 65 or older.
- Assets are valued using a five-year expected value basis.
- Assumed retirement at age 55 for Class A members and age 65 for Class B members.

Accounting for DB Pensions is Complex

- The actuarial valuation of assets represents a five-year expected value of assets method, with gains and losses deferred, then recognized 20% per year in calculating the actuarial value.
- Results in a smoothing effect on market volatility.
- At June 30, 2012, BERS has a deferred net loss of \$(2.3) million under this method.

Reconciliation of Market Value of Plan Assets, July 1, 2008 - June 30, 2012

	July 1, 2008 - June 30, 2009	July 1, 2009 - June 30, 2010	July 1, 2010 - June 30, 2011	July 1, 2011 - June 30, 2012
Market value at beginning of period	118,573,405	94,968,798	111,790,020	134,079,722
Contributions during period	10,480,004	10,569,109	11,662,386	12,546,410
Total investment income	(23,818,921)	16,892,327	22,411,312	1,420,339
Benefit payments and expenses	(10,265,690)	(10,640,214)	(11,783,996)	(12,513,627)
Market value at end of period	94,968,798	111,790,020	134,079,722	135,532,844
Expected market value at end of period	128,282,164	102,492,353	120,606,747	144,840,194
Investment gain/(loss) for the year	(33,313,366)	9,297,667	13,472,975	(9,307,350)

Year Ended	Investment Gain / (Loss)	Weight	Weighted Gain / (Loss)
June 30, 2012	(9,307,350)	x 0.80	(7,445,880)
June 30, 2011	13,472,975	x 0.60	8,083,785
June 30, 2010	9,297,667	x 0.40	3,719,067
June 30, 2009	(33,313,366)	x 0.20	(6,662,673)
			(2,305,701)

Actuarial Value of Assets = Market Value minus weighted gain / (loss) = **\$137,838,546**

Accounting for DB Pensions is Complex, cont'd

- Actual results that differ from actuarially assumed results are deferred and considered in the calculation of the past service liability.
- Actuarial gains and losses result from actual experience being different than assumed experience.
- Actuarial gains and losses are amortized over 30-years from the year in which they occur.
- BERS' unfunded past service costs totaled \$58.6 million at June 30, 2012.

The sources of the (Gains)/Losses are as follows:

Actual UAL as of June 30, 2011	\$55,099,233
Expected UAL (Prior to Changes) as of June 30, 2012	\$56,355,637
Salary Increases	(\$1,440,127)
New Participants	350,043
Active - Retirements	(198,329)
Active - Terminations	(465,395)
Active - Mortality	191,472
Active - Disabilities	(446,919)
Retiree Mortality	365,944
Other (Data Corrections, etc.)	(568,265)
Total Liability (Gain)/Loss	(\$2,211,576)
Investment (Gain)/Loss	7,625,302
Newly Eligible Employees	388,779
Ordinance Changes	(3,550,707)
Total Change in UAL	\$2,251,798
Actual UAL as of June 30, 2012	\$58,607,435

The reconciliation of the UAL is as follows:

	Class A Members	Class B Members	Total System
Total UAL as of June 30, 2011	\$23,312,258	\$31,786,975	\$55,099,233
Interest Adjustment	42,769	(136,809)	(94,040)
FY 2012 Experience Base	2,191,929	1,410,313	3,602,242
Total UAL as of June 30, 2012	\$25,546,956	\$33,060,479	\$58,607,435

BERS' Situation

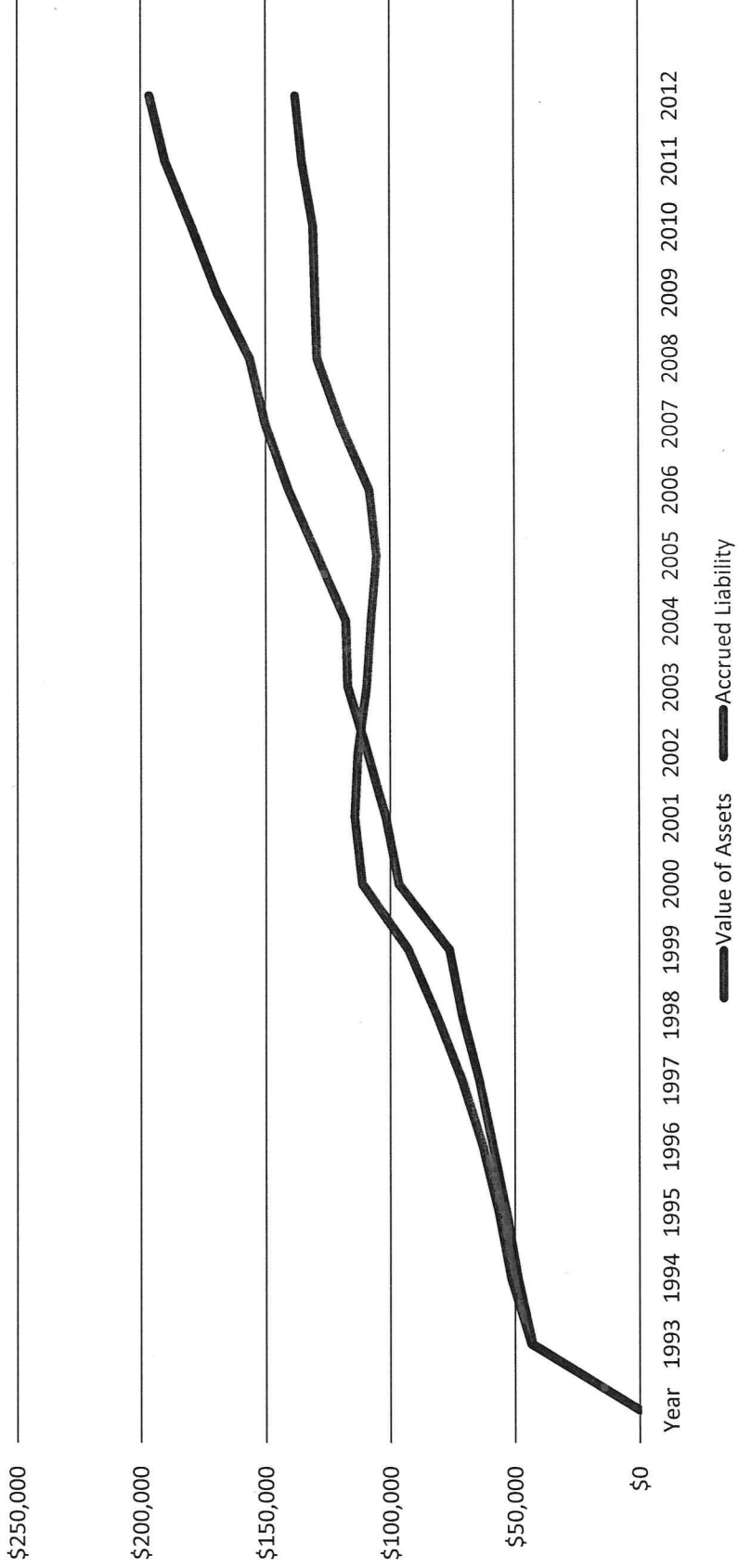
- The City's pension plan is significantly underfunded, with a funding ratio of only 70.2% at June 30, 2012.
- This underfunding began in 2003 and has grown significantly since then, and with the exception of 2007 and 2008, has increased each year since then to total \$58.6 million.
- There result of the underfunding is dramatic increases in pension costs.

Primary Drivers of Underfunding

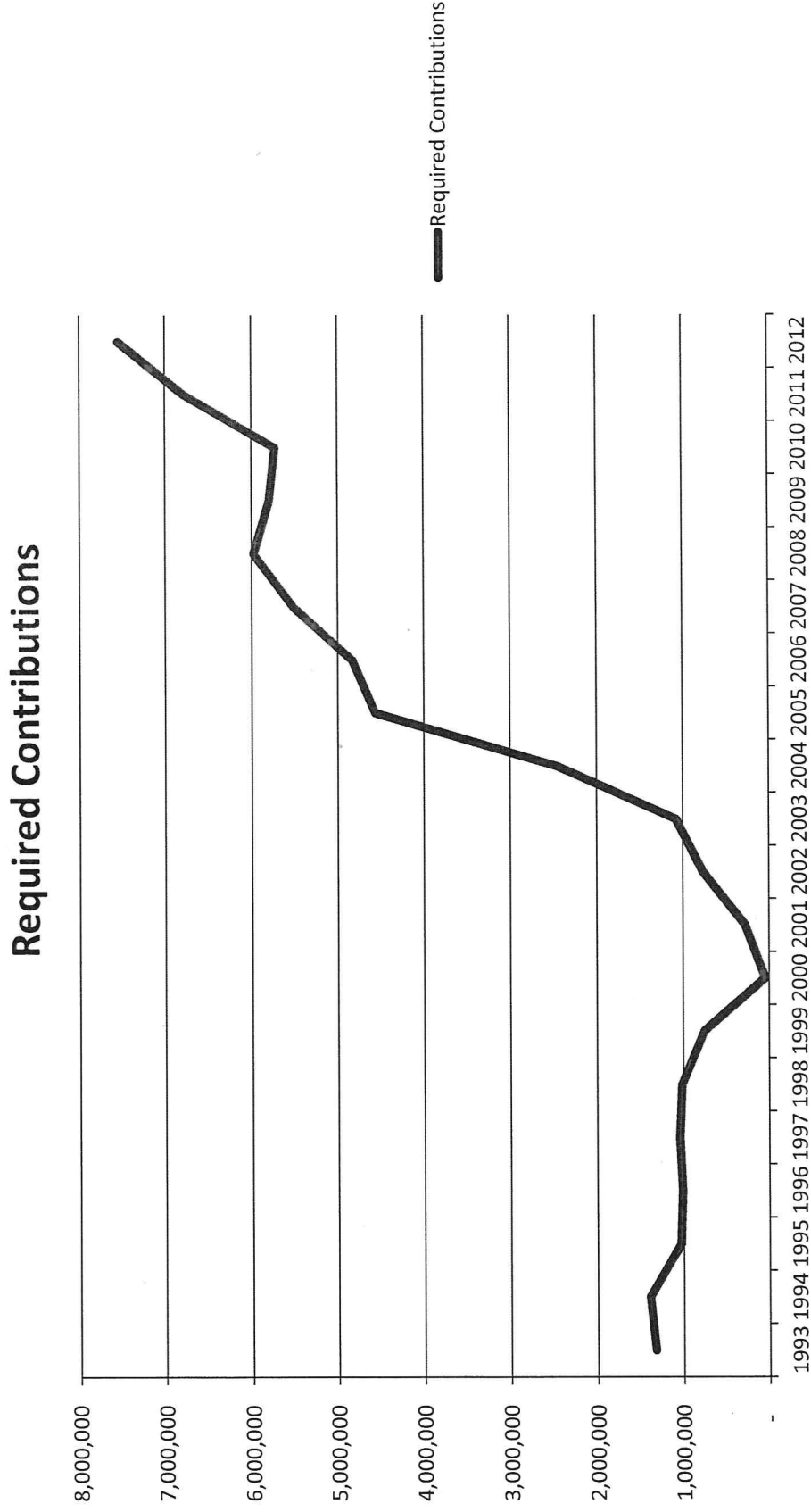
- The most significant cause of the underfunding is the benefit improvements granted to employees in 2000, when the plan was fully funded at 115%. This drove increases in the actuarial accrued liability in all subsequent years. The benefit improvements caused a 27% increase in the actuarially accrued liability.
- Also, during four of the years since 2000, the Plan's investments incurred a net loss for the year, and in all but one year since then (2007), the return on assets was less than the actuarial assumed return on assets of 8%.

Funding Status Over the Past 20 Years

Assets vs. Accrued Liability
(Amounts in thousands)



Annual Required Contributions Over the Past 20 Years



SCHEDULE F

**BURLINGTON EMPLOYEES' RETIREMENT SYSTEM
HISTORICAL AND PROJECTED CONTRIBUTIONS
CLASS A AND B EMPLOYEES**

<u>Fiscal Year Ending</u>	<u>Projected Payroll</u>	<u>Normal Contribution</u>	<u>Past Service Contribution</u>	<u>Contribution Shortfall</u>	<u>Total City Contribution</u>
June 30, 2006	\$33,190,245	\$3,782,704	\$905,446	(\$756,403)	\$3,931,747
June 30, 2007	34,384,729	3,969,950	2,259,664	683,638	6,860,252
June 30, 2008	35,588,195	3,037,864	2,929,190	(256,122)	5,710,932
June 30, 2009	36,833,782	3,073,086	2,851,003	(48,794)	5,875,295
June 30, 2010	40,328,362	3,297,021	2,455,550	0	5,752,571
June 30, 2011	42,563,572	3,097,260	3,681,967	0	6,779,227
June 30, 2012	43,148,038	3,045,975	4,501,979	0	7,547,954
June 30, 2013	43,477,161	3,083,144	5,092,361		8,175,505
June 30, 2014	44,616,671	2,994,432	5,437,938		8,357,370
June 30, 2015	46,178,255	3,021,612	5,437,938		8,459,550
June 30, 2016	47,794,494	3,127,368	5,437,938		8,565,306
June 30, 2017	49,467,302	3,236,826	5,437,938		8,674,764

Notes:

No future liability gains or losses are assumed; assets are assumed to earn 8% per annum.

Projected payroll assumed to increase 3.5% per annum.

Unfunded liability as of June 30, 2004, was amortized over 30 years.

All future changes in unfunded liability will be amortized over 30 years.

SCHEDULE G

BURLINGTON EMPLOYEES' RETIREMENT SYSTEM

ANNUAL AMORTIZATION OF THE UNFUNDED PAST SERVICE LIABILITY

Fiscal Year	Beginning of FY Balance of Unfunded Liability	Amortization Payment in Fiscal Year
2013	\$58,607,435	\$5,092,361
2014	\$58,203,669	\$5,437,937
2015	\$57,422,025	\$5,437,937
2016	\$56,577,850	\$5,437,937
2017	\$55,666,141	\$5,437,937
2018	\$54,681,495	\$5,437,937
2019	\$53,618,078	\$5,437,937
2020	\$52,469,587	\$5,437,937
2021	\$51,229,217	\$5,437,937
2022	\$49,889,618	\$5,437,937
2023	\$48,442,850	\$5,437,937
2024	\$46,880,341	\$5,437,937
2025	\$45,192,831	\$5,437,937
2026	\$43,370,321	\$5,437,937
2027	\$41,402,009	\$5,437,937

Amortization of the unfunded liability continues at \$5.4 million per year through 2034 and declining thereafter until fully amortized by the end of 2043.

Increasing Contributions Have Not Held the Funding Problem in Check

SCHEDULE OF FUNDING PROGRESS

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability ¹ (AAL) (b)	Excess of Assets over AAL (a - b)	Funded Ratio (a / b)	Covered Payroll (c)	Excess as a percentage of Covered Payroll ((a - b) / c)
June 30, 2006	108,343,798	140,615,645	(32,271,847)	77.05%	30,954,711	-104.26%
June 30, 2007	119,785,835	150,002,528	(30,216,693)	79.86%	34,256,676	-88.21%
June 30, 2008	129,101,729	156,313,830	(27,212,101)	82.59%	36,751,722	-74.04%
June 30, 2009	129,841,522	169,319,955	(39,478,433)	76.68%	39,769,493	-99.27%
June 30, 2010	130,594,539	179,323,343	(48,728,804)	72.83%	41,161,578	-118.38%
June 30, 2011	135,097,458	190,196,691	(55,099,233)	71.03%	42,971,870	-128.22%
June 30, 2012	137,838,546	196,445,981	(58,607,435)	70.17%	43,865,945	-133.61%

Where Do We Go From Here?

- Minimize the growth in salaries and wages upon which the pension benefit is based. This will require union participation to be effective, and should include increased employee contribution rates.
- Consider creating a defined contribution plan for new employees that begin service after a certain date.
- Consider negotiating increased years of service requirements, reduced disability benefits, and caps on final average salary amounts used to calculate the benefit.
- As a last resort, issue a Pension Obligation Bond to fund the deficiency.
- Other ideas?

Questions?