Analysis of the Pension Funds in FY2014 Budget Report FAC/FCA-092

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Introduction: The study reported herein is part of the review by the Federation of Citizens Associations of the Fairfax County FY2014 Proposed Budget. In particular, this study is a review of the pension funds not from the point of view of whether the pension is too generous or too stingy to the employee, but from the point of view of whether it is adequately funded and adequately being managed. We consider here the Fairfax County Uniformed Retirement System (URS, Fund 73010, formerly Fund 600, for firemen, etc.), the Fairfax County Employees' Retirement System (FCERS, Fund 73000, formerly Fund 601, for employees not otherwise covered), the Fairfax County Police Officers Retirement System (PORS, Fund 73020,formerly Fund 602), the Educational Employees' Supplementary Retirement System (ERFC, , Fund S71000, formerly Fund 691, for teachers) and the Other Post-Employment Benefits (OPEB for teachers, Fund S71100, formerly Fund 692), and OPEB, Fund 73030, formerly Fund 603, for employees not otherwise covered). We do not consider the Virginia Retirement System (VRS), which is at the State level.

Summary: Under the County's reported actuarial assumptions, the pension funds are under-funded[1]. The assumptions in the actuarial computations could have a significant impact on the difference between assets and liabilities; therefore, the actuarial values of assets and liabilities should be reported for other economic scenarios, including those with returns on investment equal to the record over the last ten, twenty and thirty years. Alternative computations should also be made based on a high inflation rate, which so many financial experts are currently predicting. At present, the gap between the actuarial liability and the actuarial assets amounts to approximately $8000 per County residence. At an interest rate of 5%, the gap amounts to $400 per year per residence.

The pension costs have increased significantly over the past decade, primarily because so many benefits were added to the retirement plans when the return on investment was high (i.e., from 2001 to 2008). Now that the return on investments is low, these added benefits (e.g., paying the employee's contribution to the VRS) should be reconsidered.

The pension cost must be decreased. The pension fund already is a major cost to the County. One method of reducing the cost is a switch to a defined-contribution plan[2]. The switch could be for new employees only or for new and current employees for all future years, as was done in the Federal government. The change would decrease pension costs, relieve the County of the burden of the uncertainty in the economy, and prevent the escalation of benefits that has occurred in the past decade. A second method of reducing the pension cost of the pension is to make the retirement age be that of Social Security (i.e., 62/65). County employees might then want to continue to work for the County for 40 years as do private-sector employees, instead of 30 years. The County should evaluate these alternatives.

Our recommended Federation Budget Resolutions are listed in Appendix A.

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[1] The County is aware of the funding shortfall. FY 2014 Advertised Budget Plan (Vol. 2), Page 446, shows, in tabular form, that the funding is "outside the corridor" of 90% to 120% so that payments into the funds must be adjusted.

[2] Our Report -050 shows that a defined-contribution plan may be more beneficial to the employee than the current defined-benefit plan.

Discussion: Budget data on the pensions was taken from the County web site

http://www.fairfaxcounty.gov/dmb/

and its subsidiaries, such as

http://www.fairfaxcounty.gov/dmb/archives/budgetarchives.htm

for budgets for prior years, and from

http://www.fairfaxcounty.gov/finance/CAFR.htm

for the Comprehensive Annual Financial Reports (CAFR). The reports are all in Adobe pdf format. The CAFR for FY 2012, which is the most recent CAFR, has data up to and including FY2011 as listed under the Required Supplementary Information. The report format changes somewhat from year to year, so it will not always be found in the same format or the same page. Additional pertinent information can be found in Section G (Retirement Plans) and in Section H (Other Post Employment Benefits, OPEB). Pension data on income and expenses is found in Volume 2 of the budget documents, under the title Trust Funds. The funds were numbered 600, 601, 602, 603, 691 and 692 in previous years, but are now numbered 73010, 73000, 73020, 73030, S71000, and S71100, respectively. The tables used most were those at the end of each of these .pdf files.

The first question is: Are the projected pension assets sufficient to cover the projected liabilities? The CAFR shows the actuarial assets and liabilities for each year for each fund (Figure 1). The OPEB funds are relatively new; therefore, not much data is available. The actuarial dollar values are the net present value of the assets (contributions and the investment earnings from those contributions) and liabilities (amounts to be paid to retirees in the future, as if the program were terminated immediately). The word "actuarial" implies that the employee count, age, life expectancy, and years of service are factored into the computation.

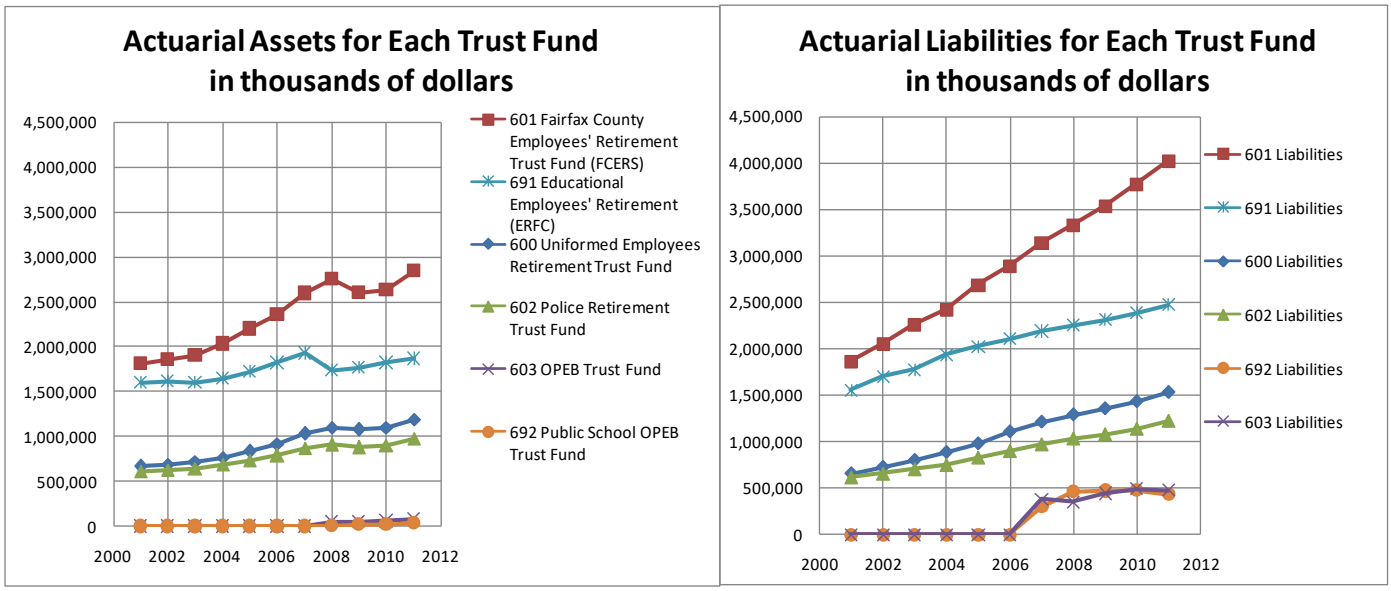

Figure 1: Actuarial Assets and Liabilities for Each of the Pension Funds

The difference between the actuarial assets and actuarial liabilities can best be seen if the two are plotted on the same graph (Figure 2, right-hand side). The much greater liabilities than assets for the two OPEB funds is evident in Figure 1, so they were not repeated in the right-hand part of Figure 2. The total assets and total liabilities, on the left of Figure 2, shows that the sum of the liabilities has been rising at a faster rate than the assets, especially since 2006, although the gap between the two was only 0.01% less in 2011 as compared to 2010. On average since 2001, liabilities have increased $579M per year, whereas assets have increased only $245M per year.

During the last decade, when high ROI's were obtained by the pension funds, the high ROI's were not used to decrease the County's pension contributions; instead, they were used to increase benefits. For example, the Deferred Retirement Option Plan (DROP)[3] was introduced in 2005 and the Other Post Employment Benefits (OPEB) was introduced in 2007. Before FY2008, the teachers paid 5% into the VRS; now, the County pays the teacher's VRS contribution, thereby doubling the County contribution. A post-retirement health-insurance benefit was added in 2003. Originally, approximately one-third of the legacy ERFC benefit ended when Social Security payments started. Since 2004, the employee can have the entire legacy ERFC continue until death. The newer ERFC 2001 has always had the full benefits continue until death[4]. In FY2008, the police officer's contribution to the pension was decreased from 12% to 11%[5]. These escalations of benefits, and others that we may have missed, have not been rescinded during the economic downturn; therefore, we have the consistently increasing gap between actuarial assets and liabilities.

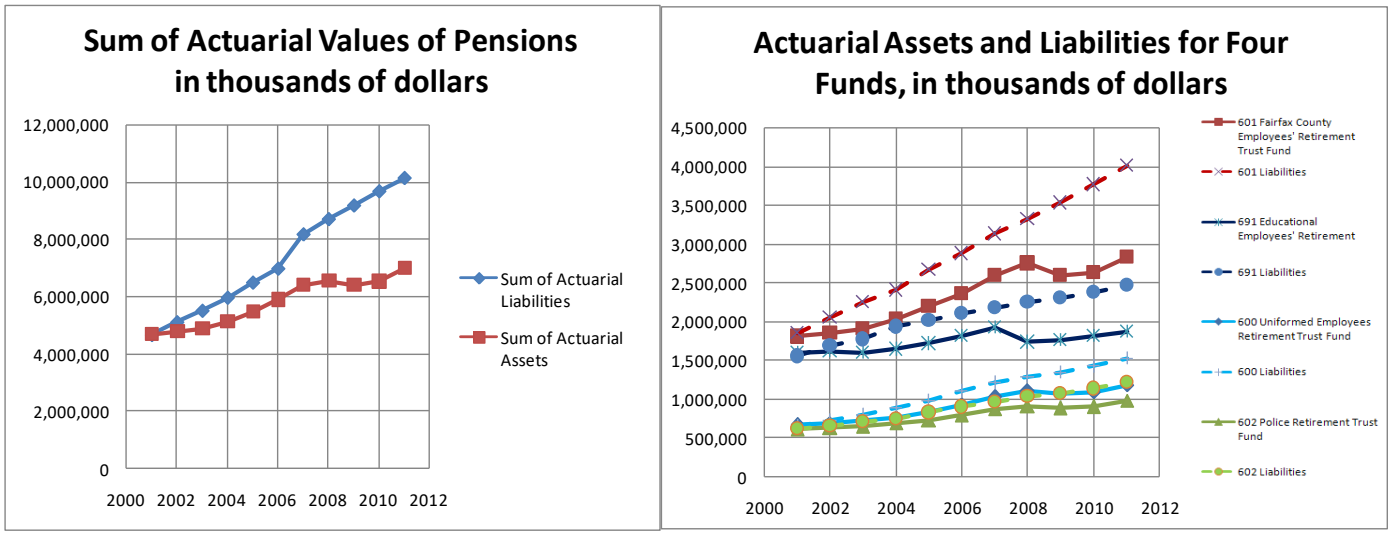

Figure 2: Actuarial Assets and Liabilities for the Sum and Selected Pension Accounts

The future of the pension funds should be of great concern. There are 303 current retirees per year in Funds 600 to 602 (=8493/(83-55)); there are 580 currently active, retirement-plan employees per year covered by these same funds (17,414/30, Pg 498 of Vol 2). The number of retirees will increase by almost a factor of two in the not-too-distant future. Tax revenues must increase greatly to cover this impending increase or benefits must be decreased (e.g., the retirement age might be increased).

Because the pension funds constitute a major cost to the County and the cost must be increased to balance assets and liabilities, a lower-cost system should be evaluated. For example, the pensions might be switched to a defined-contribution plan rather than the current defined-benefit plan. The switch could be for new employees only; however, a switch might be made also for current employees for all future years, as was done in the Federal government.

The second question is: Are the imbalances in the funds sensitive to the economic assumptions needed to compute the actuarial assets and liabilities? The key assumptions made in computing the actuarial values are (see, for example, Pg 76 of FY2012 CAFR):

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[3] For information on the increased benefits, see http://www.fairfaxcounty.gov/finance/cafr.htm

[4] In March 2012, Jeanne M. Carr, Executive Director/CIO of ERFC, (JMCarr@fcps.edu) says that the changes to ERFC have not changed the actuarial liabilities of the ERFC.

[5] http://www.fairfaxcounty.gov/dmb/adopted/FY2008/pdf/Volume1/00189.pdf

a. A rate of return on the investment of present and future assets of 7.5 percent per year compounded annually, including an inflation component of 1.0 percent in 2012 and 3.0 percent thereafter;
b. Projected annual salary increases of 5.0 to 12.0 percent, including an inflation component of 1.0 percent in 2012 and 3.0 percent thereafter; and
c. Annual cost-of-living adjustments of 1.0 percent in 2012 and 2.75% thereafter.

These assumptions are quite different from those in the FY2011 CAFR. The anticipated rate of return of 7.5 percent is the same year after year.

The assumptions made in computing the actuarial values can be compared to what has happened to the investments over the last decade (Figure 3). The effect of terrorist attack of 9/11 in 2001 is evident in the drop from 2001 to 2002. The effect of the collapse of the housing market is evident in the drop from 2008 to 2009. (The fund balances are as of June 30 in the year indicated. The 2014 values are the budget figures.)

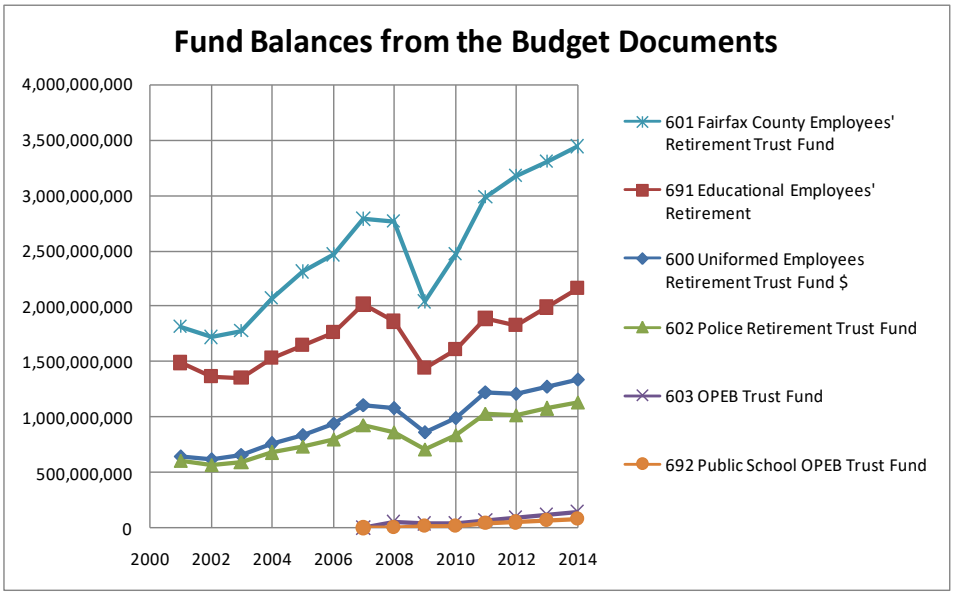

Figure 3: History of the Values of the Assets

Actuarial Assumption (a) above, concerning the assumed 7.5% return on investment, can be tested against data for the last ten years. The return on investment has certainly not been constant; however, the average increase in the year-to-year return on investment of the pension funds has exceeded that of the Standard and Poor's 500 – thanks to the investment advisors (Table 1). (The time offset of the peaks and valleys of the curves is due to the reporting periods. The S&P values are Dec 31 values; the pension values are July 1 values.) The average return on investment from 2001 to 2012, including the unrealized capital gains, is 6.9% per year, whereas the average for the S&P 500, including dividends, is 1.4%. The S&P 500, which is usually not considered to be volatile, is seen to be more volatile than the pension funds, surely because a significant percent of the pension fund is invested in bonds rather than stocks. The average Consumer Price Index (CPI-U) changed over this same period by 2.3%. (CPI-U includes the effect of food and fuel prices; the CPI does not.)

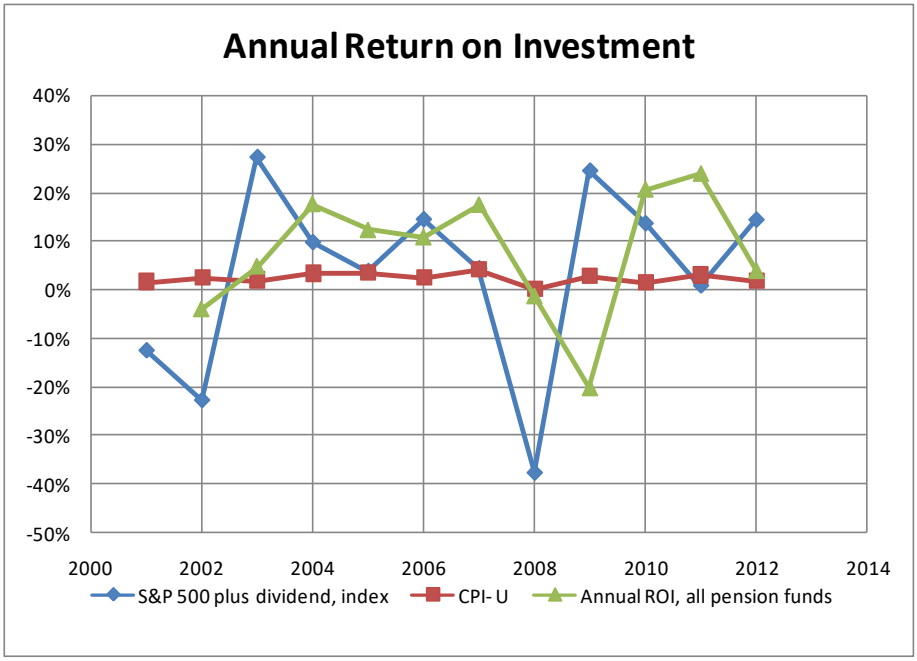

Figure 4: Annual Return on Investment as Compared to S&P 500 and the Consumer Price Index

To aid the Board of Supervisors in assessing the status of the pension funds, the account performances should be re-computed with historical returns on investment and inflation rates, over the past 10, 20 and 30 years, in addition to the rates currently being used in the actuarial computations. The counter argument is that the values will be overly influenced by two catastrophic events: 9/11 and the housing collapse; however, we cannot be assured that another catastrophe will not happen (e.g., war in the Middle East). In addition, the current recession could last years. Even in good times, the long-term growth rate of the S&P 500, including dividends, is only approximately 2.65% above the CPI-U rate (Figure 5).

	Number of Years Back			
Averages for periods ending June 20, 2012, backwards	**1**	**3**	**5**	**10**
73010 Uniformed Employees Retirement Trust Fund	0.1%	13.1%	2.7%	7.7%
73000 Fairfax County Employees' Retirement Trust Fund	8.7%	19.6%	5.5%	9.3%
73020 Police Retirement Trust Fund	-0.4%	15.0%	3.3%	7.6%
73030 OPEB Trust Fund	1.4%	12.0%		
S71000 Educational Employees' Retirement	0.6%	13.1%	1.8%	7.3%
S71100 Public School OPEB Trust Fund	0.9%	9.4%		
All pension funds	3.7%	14.3%	2.4%	6.9%
CPI- U	3.0%	3.0%	2.6%	2.7%
S&P 500 plus dividend, index	0.8%	12.5%	-1.5%	1.7%

Table 1: Comparison of Various Investment Alternatives

A thoroughly offsetting factor could be inflation, so the balance between assets and liabilities should also be recomputed for a high inflation rate – a phenomenon forecast by many economists. The increase in the pension adjustment for retirees is limited to 4% per year (Pg 68 of FY2009CAFR). If inflation were to exceed this 4% limit and the investment values were to stay ahead of inflation, the retirees would be paid is dollars of less value so that the present rate of contributing to the pension fund would be greater than needed under a high-inflation scenario.

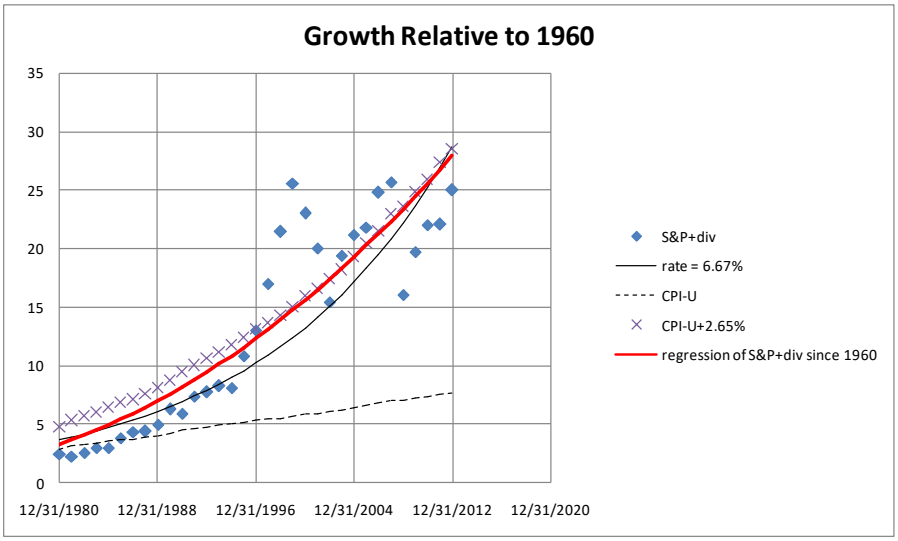

Figure 5: Compound Growth Rate of the Stock Market

The history of the County contributions to the pension funds (Figure 6 and Figure 7) shows the considerable variation from year to year[6]. The trend toward increasing contributions for non-education employees is evident (Figure 7). The contributions will continue to increase because the number per year that are retiring will grow to two times the number per year that are retired. The contributions to both the education and non-education far exceed the approximately 5% of salaries that private-sector companies contribute to their pension funds.

The recent Aon report[7] compares the County benefits only to those of other government entities, not to private-sector benefits; nevertheless, the County benefits equal or exceed those of the other governments (see Appendix B).

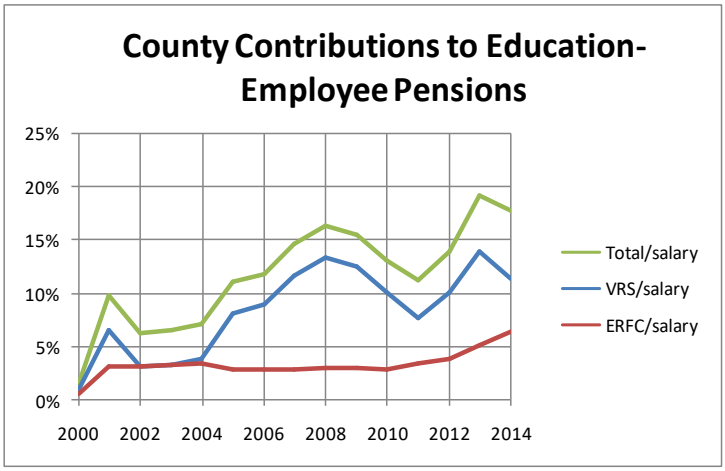

Figure 6: Percent of Salaries Paid to Education-Employee Pension Funds

[6] The data was taken from Volume 1 of the budget documents in the section called "Non-Departmental Program Area".
[7] Aon-Hewitt: FAIRFAX COUNTY POST-RETIREMENT BENEFITS REVIEW. JANUARY, 2012

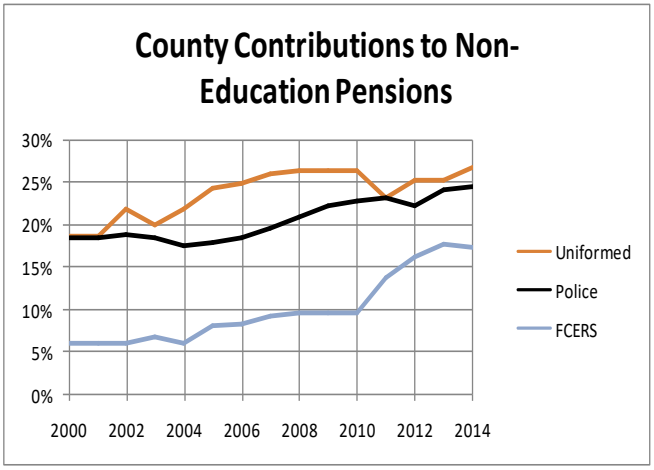

Figure 7: Percent of Salaries Paid to Non-Education-Employee Pension Funds

We recently estimated[8] the future actuarial liability associated with the education-employee pension plan (the former Fund 691, now Fund S71100), based on having all workers work 30 years and retire at the age of 56. We also assumed that the number of employees would remain the same as it is today, 22,000. We considered several cases, starting with all workers working 30 years and retiring at the age of 56. The most realistic case was having an attrition rate that is the same as the school system has historically experienced (Case 5 in the referenced report). This historical increase in liability seems to approaching Case 5 (Figure 8). The County[9] graciously had the report reviewed by its consultant (GRS). The consultant thought the assumptions that we had to make, absent the demographic data, invalidated the results; however, the consultant did not estimate the long-term liability. The GRS report had too many unstated assumptions for us to make a comparison; however, its results stated on its Page 8 are not greatly different from our results. Most importantly, GRS had the number of employees increase at the rate of 3.75% per year – forever. We held the number of employees constant at 22,000. With an ever-increasing employment rate, the number of workers will always exceed the number of retirees by a considerable number.

The purpose of our projection (Figure 8) was to call attention to a possibly unsustainable pension liability. Meeting this liability remains an undeveloped strategy.

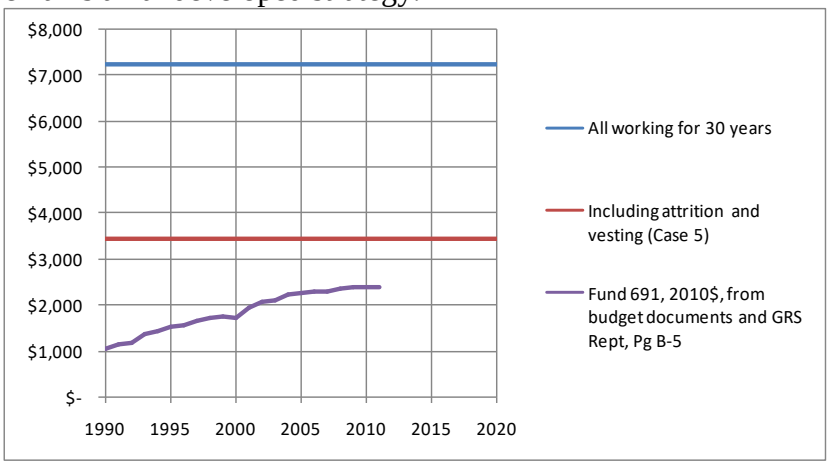

Figure 8: Long-term Actuarial Liability of the Education-Employees Pension

[8] 083 Long-Term FCPS Pension Costs.docx

[9] Jeanne M. Carr, CFA, Executive Director/CIO, ERFC

Appendix A: Proposed Resolutions[10]

Resolution 1: Re-evaluate the actuarial assets and liabilities under historical rates of inflation and return on investment (high priority)

WHEREAS the actuarial values of the assets and liabilities depend on the assumed values of inflation and return on investment,
WHEREAS the Board of Supervisors should be informed of potential shortfalls and surpluses, and
WHEREAS the currently assumed values of the rates of inflation and return on investment differ significantly from what has been experienced over the past thirty years, especially the last ten years, and from the longer-term S&P 500 rate

Therefore

BE IT RESOLVED that the Federation recommends that the actuarial values be re-computed under alternative assumptions, including (1) the last 10-, 20- and 30-year average values for the rate of return of the pension and the average inflation rate over those years, and (2) the high inflation rates anticipated by many economists.

Resolution 2: Evaluate changing the pensions from defined-benefit to defined-contribution plans (high priority)

WHEREAS, under the current assumptions used by the County, the actuarial assets are less than the actuarial liabilities, indicating that the Fairfax County's defined-benefit pensions are currently under-funded;
WHEREAS the County's pension costs are already a major component of the County's expenses;
WHEREAS the County desires decreasing expenditures, not raising taxes, to meet budget limitations; and
WHEREAS most solvent private companies, as well as the Federal government, have reduced their pension expenses by changing from defined-benefit plans to defined-contribution plans

Therefore

BE IF RESOLVED that the Federation requests that the County evaluate switching from the current defined-benefit plan to a new defined-contribution plan. The switch could be for new employees only; however, a switch should also be evaluated if the new plan is applied to all employees for all of their future years, as was done in the Federal government.

Resolution 3: Project the actuarial liabilities for the next 30 years (high priority)

[10] The County did not put any net money into the VRS in FY2011 and FY2012. These payments will be made, with 7.5% interest, over ten years, starting in FY2013. See: http://www2.timesdispatch.com/rtd/news/stateregional/stateregionalgovtpolitics/article/VRSS1520100314-222207/330443/ The County payment to the VRS is approximately $61M, because the County has a policy of paying the employee's contribution to the plan. The $122M paid back over 10 years at 7.5% interest amounts to approximately $18M per year

WHEREAS the growth in actuarial liabilities continues to exceed the growth in actuarial assets, estimates of future actuarial liabilities are needed for budgeting purposes,
WHEREAS approximately 370 employees per year are currently under the 73000, 73010, and 73020 plans
WHEREAS currently approximately 580 employees per year retire under these same plans
WHEREAS the this twofold in number of retirees will require a great increase in total pension expenditures
WHEREAS some modifications to the retirement plans may be necessary to offset a great increase in pension expenditures
WHEREAS private-sector employees work until approximately age 65 before being able to afford to retire

Therefore

BE IT RESOLVED that Federation requests that the County forecast and report the expected actuarial liabilities, year by year, over the next 30 years.

BE IT FURTHER RESOLVED that the Federation requests that the County determine the reduction in cost associated with delaying payment of retirement benefits until age 65, with the annual payment being limited to what is currently earned with 30 years of service.

Resolution 4: Apply proceeds from high returns on investment to the reduction in required County contributions (high priority)
WHEREAS actuarial liabilities are increasing faster than actuarial assets, thereby increasing the underfunding of the pension plans; and
WHEREAS at least some of the underfunding is due to new retirement benefits being added when high returns on investment have been experienced;

Therefore

BE IT RESOLVED that Federation requests that no retirement benefits be added or increased while the pensions are underfunded or while the County contribution to the County and State pension funds exceeds some threshold amount such as 10% of the wages.
BE IT FURTHER RESOLVED that the Federation requests that the County review the benefits added during the past decade and, where possible, rescind some or all of the benefits added during this period.

Appendix B: Conclusions from the Aon Report

In January 2012, Aon Hewitt, consultants to Fairfax County, published a review of the Fairfax County Post-Retirement programs[11]. The review compared the Fairfax County benefits to those of other governments, including the Federal government and adjacent county governments. The Executive Summary lists four conclusions that are pertinent to the analysis performed herein:

1. The County Employees' Retirement System benefit plans are very strong, being more generous than those of your competitor group. This is primarily driven by the defined benefit plan where benefits exceed those of most competitors.
2. The County Employees' Retirement System benefits exceed the minimum retirement income needed to support the employee's current lifestyle in retirement.
3. The Police Officers Retirement System provides benefits that are comparable to, though slightly lower in value than, the average of the competitor group.
4. The Uniformed Retirement System provides benefits that are comparable to, though slightly greater in value than, the average of the competitor group.

[11] http://www.fairfaxcounty.gov/hr/pdf/fairfaxcountyretirementbenefitsbenefitsstudy.pdf

Appendix C: Computation of the Rate of Return

We explain how we compute the return on investment (ROI) by way of example. We take Fund 73010 (Fund 600) and compute the ROI over the past five years. So we can compare to the ROI reported by Fairfax County, we choose the ROI as of the end of FY2011.

At the beginning of the five year period (i.e., the end of 2006), the balance in the fund was $942,648,274. At the end of 2011, the balance was $1,220,411,973. If we ignore the contributions and expenses over this time period, the average increase would be simply $(1{,}220{,}411{,}973/942{,}648{,}274)^{1/5}$ or 1.053. Therefore, the average ROI would be 5.3%.

This first approximation must be corrected for the net of contributions minus the expenses over this time period:

Year	Net of funds added
2007	-11,569,400
2008	-7,579,561
2009	-7,436,367
2010	-11,735,462
2011	-13,951,284

The negative sign indicates that the expenses exceeded the contributions.

If we were to invest the $11,569,400 at a rate of 5.3%, the value would accumulate to $11{,}569{,}400*(1.053)^{4.5}$ or 14,596,156. The 4.5 accounts for the fact that the contributions and expenses occurred throughout the year of 2007. They compound to 2008, 2009, 2010, and 2011 (i.e., 4 times) to get their value in 2011. Because we do not have the detailed history of the contributions and expenses, we treat the contributions and expenses as if they occur at the middle of the year, so we must multiply again by $1.053^{0.5}$. Similarly, the net of funds added in 2008 uses $1.053^{3.5}$. At 5.3% ROI, the various year amounts accumulate to the end of 2011 as:

Year	Net of funds added, evaluated at the end of 2011
2007	-14,596,156
2008	-9,081,202
2009	-8,461,196
2010	-12,680,686
2011	-14,316,220
TOTAL	-59,135,460

We find, therefore, that at 5.3% ROI, the ending value would be1,279,547,433 (i.e., $59,135,460 more than the $1,220,411,973 listed above) if the effects of contributions and expenses are included. A better estimate of the ROI, therefore, is $(1{,}279{,}547{,}433/942{,}648{,}274)^{1/5}$, or 1.0630 (i.e., 6.30%).

Because we computed the value of the funds added using 5.3%, we should return and re-evaluate the funds added using 6.30%. Computing the ROI is, therefore, an iterative process. The final iteration yields an ROI of 6.33%.

This same computation can be repeated for any number of years. For the example of Fund 73010, we get:

yrs back	1	3	5	10
Starting balance	$991,072,542	$1,081,289,955	$942,648,274	$644,181,059
Ending balance	$1,220,411,973	$1,220,411,973	$1,220,411,973	$1,220,411,973
Net contributions	($12,508,332)	($35,374,259)	($60,562,450)	($61,374,872)
New ending balance	$1,232,920,305	$1,255,786,232	$1,280,974,423	$1,281,786,845
ROI	24.4%	5.1%	6.3%	7.1%
Fairfax County report	19.9%	5.1%	6.2%	7.1%

Differences will arise if Fairfax County uses the actual history of contributions and expenses rather than placing them at mid-year. Such a difference will be most pronounced for the one-year period.