Appendix A. Methodology

1. DATA

As of July 1, 2008, the total Fire and Police non-active members was 4,118, consisting of 1,977 Fire and 2,141 police retirees. Our analysis focused on the 707 Fire and 638 Police retirees, who retired during the period January 1, 1998 to December 31, 2008.

The data utilized in this report were obtained from a number of different sources. The Jury obtained data files from SFERS that contained work and pension information that was used by SFERS to compute the retiree’s pension benefit. The data file was exported into an Excel file for our review and analysis. The data file layout is included in the Appendix B.

The Jury also obtained from the Police and Fire DHR records on retirees' work history in order to determine the duration and type of work assigned to the retirees in their final year of employment. The work history records were reviewed in conjunction with the analysis of the SFERS data to determine any unusual increases in the retirees' “Covered Compensation” (the key element in the calculation of a retirees' pension benefit). The increases in compensation for job promotions were excluded in our analysis of pension “spiking.” See Appendix D for Pension Glossary.

The Jury found 165 or 26% of all Fire retirees and 143 or 22% of all Police retirees retired with a 10% or greater increase in their "Covered Compensation" over their historical pay rate. See Figure 7. The Jury computed the present value of the pension spike to quantify the additional liability to fund that resulted from this practice.

The present value concept as it relates to pension cost is best understood by the example of parents saving for their child's college education. Most parents know approximately, how big the college (or the pension) expense will be when it comes due. The question is how much they must put aside now to meet that expense. The answer is the present value of the future obligation. In our analysis of the present value of the pension spike, we used the same discount rate as the rate used in the latest SFERS actuarial valuation (i.e. 7.75%). See Appendix C for the Cheiron Actuarial Valuation dated July 1, 2008.
2. DATA VALIDITY
Data validity was checked using screen shots from the SFERS system to support the Jury's calculations.

2.1. Several iteration of data extraction was needed in order to correct extraction and data miss-matches and errors.

2.2. The final extraction was performed on Jan27th, 2009, and was certified as valid by SFERS.

2.3. Information was sorted in a manner that isolated individuals receiving an increase in compensation of more than 10% in any given year.

3. PROCESS
3.1. Files were analyzed using standard EXCEL formulas
3.2. No special codes or macros were used for data evaluation
3.3. Sorting was done using standard EXCEL functions such as the sort and filter.
3.4. Pivot tables were created to summarize the data in a format that was used in the Jury's analysis.

4. DATA ANALYSIS
4.1. Criteria for selection were agreed on with SFERS staff as follows
   4.1.1.1. An increase in salary of less than 10% over one year was deemed to be a "maximum ordinary raise"
   4.1.1.2. An increase of 10% or greater in any given year indicated some form of extraordinary increase or change in rank, or both.
4.2. SFCGJ analyzed the data looking for increases in salary of more than 10% in the three years prior to retirement.
4.3. Present Value calculations were done using Excel's PV function PV(rate,nper,pmt,fv,type), as described below
   4.3.1.1. Rate - is the discount rate per period. For example, SFERS actuary used a discount rate of 7.75%. This rate is converted into a monthly rate. The monthly rate is calculated as 7.75%/12. You would enter 7.75%/12 or .645 into the formula as the rate.
   4.3.1.2. Nper - is the total number of payment periods in an annuity. For example, the Jury used a life expectancy after retirement of 29.6 years, based on the average retirement age for Fire retirees was 54.1 years and 51.5 years for Police. You would enter 29.6 * 12 into the formula for nper.
   4.3.1.3. Pmt - is the payment made each period and cannot change over the life of the annuity. The Jury calculated the payment for each retiree in the sample. The payment represents the difference in calculated pension amount with the spike and the calculated pension amount without the spike. The payment is
calculated on a monthly basis and entered into the PV function as a negative amount.

4.3.1.4. Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (the future value of a loan, for example, is 0). Type is the number 0 or 1 and indicates when payments are due – beginning of the period or end of the period.