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# ACTUARIAL COST STATEMENT FOR PROPOSED CHANGES FOR THE EUREKA FIRE PROTECTION DISTRICT OF ST. LOUIS COUNTY DEFINED BENEFIT PLAN

Prepared and Presented September 22, 2014

This actuarial statement is to disclose the financial impact of the Substantial Proposed Changes to the Eureka Fire Protection District of St. Louis County Defined Benefit Plan in accordance with the restated Plan Document which will be retroactively effective January 1, 2013. This statement is prepared using the actuarial assumptions and methods employed in the last annual actuarial valuation in accordance with R.S.Mo. § 105.665.

## Proposed Changes

### Pension Benefit Formula

For service earned on or after January 1, 2014, the Accrued Benefit would equal 2.0% times Average Compensation times Service on or after January 1, 2014. The Accrued Benefit for Service earned prior to January 1, 2014 would remain at 2.5% times Average Compensation times Service prior to January 1, 2014. The service cap remains at 30 years.

### Vesting Schedule

For participants who are first employed on or after June 11, 2013, there would be 0% vesting if less than 10 Years of Service, and 100% vesting upon 10 Years of Service. For participants first employed prior to June 11, 2013, the vesting schedule would remain at 100% vesting upon 5 Years of Service.

## Actuarial Analysis

The following display reflects Level Normal Cost, Amortization of the Unfunded Accrued Liability and the Total Annual Cost all calculated as of January 1, 2014 both as a dollar amount and a percentage of compensation. The three columns provided are (1) the Current Plan, (2) the Proposed Formula and the Proposed Vesting Schedule described above, and (3) the Difference being the actuarial gain due to the decrease in future benefits.

| | Current Plan | | Proposed Changes | | Difference | |
|---|---|---|---|---|---|---|
| **Normal Cost** | 284,786 | 11.94% | 257,707 | 10.81% | (27,079) | (1.13)% |
| **Amortization of Unfunded Accrued Liability** | | | | | | |
| 10 years | 262,154 | 10.99% | 201,094 | 8.43% | (61,060) | (2.56)% |
| 20 years | 173,802 | 7.29% | 133,320 | 5.59% | (40,482) | (1.70)% |
| 30 years | 148,381 | 6.22% | 113,820 | 4.77% | ((34,561) | (1.45)% |
| **Total Annual Cost** | | | | | | |
| 10 years | 546,940 | 22.93% | 458,801 | 19.24% | (88,139) | (3.69)% |
| 20 years | 458,588 | 19.23% | 391,027 | 16.40% | (67,561) | (2.83)% |
| 30 years | 433,167 | 18.16% | 371,527 | 15.58% | (61,640) | (2.58)% |

Individual Entry Age Normal method is used for the calculations above. Prior to the proposed changes, the Unfunded Accrued Liability is $1,970,149, and subsequent to the changes is $1,511,265. The Actuarial Accrued Liability after this change would be $10,224,352. The Market Value of Plan assets is $9,047,042 resulting in a Plan Funded Percentage of 88.49%.

The expected 2014 total contributions are $443,000 which equals 18.58% of active participants' payroll. All contributions are paid by the Eureka Fire Protection District. These contributions are sufficient to fund the proposed change in benefit between a 10 year and 20 year amortization period.

Because this proposed change results in a reduction in projected plan costs, this proposed change will not impair the ability of the Plan to meet its obligations to pay benefits.

All of the results in this report were based on the following Actuarial Methods and Assumptions which are the same as those used in the most recent Actuarial Valuation Report.

**Cost Method:**

Individual Entry Age Normal (EAN) Funding Method - Under this method, the Normal Cost is calculated as a level percentage of pay for each active participant from hire date until assumed exit age. The EAN Accrued Liability equals the Total Projected Benefit Liability minus the Present Value of Future Normal Costs.

The Unfunded Accrued Liability equals the Accrued Liability less the Actuarial Value of Assets. Increases and decreases in the Unfunded Accrued Liability cause the plan to establish amortization bases. Level annual payments are charged and/or credited to the plan until the bases are fully amortized.

**Valuation of Assets**

The Actuarial Value of Assets equals the Market Value minus any deferred appreciation in excess of expected earnings, plus any deferred appreciation short of expected earnings. Each year's excess appreciation is recognized in equal installments over four years. The Actuarial Value of Assets will be no less than 80% nor more than 120% of the Market Value of Assets.

**Mortality Rates**

2014 IRS Optional Combined Male and Female Tables for Small Plans

**Salary Appreciation**

Increase Rate: 4.5% per annum: compounded annually

**Investment Earnings**

7.0% per annum: compounded annually

**Assumed Retirement Age**

Age 55 and the completion of 30 Years of Service, but not later than age 65.

**Termination prior to Retirement other than Death**

2003 Society of Actuaries Small Plan Age-Based Table, multiplied at each age by 30%

**Expense Load**

None

To the best of my knowledge and belief, this valuation report is complete and accurate; and in my opinion the actuarial assumptions in the aggregate are reasonable expectations and represent my best estimate of anticipated experience under the Plan.

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