ACTUARIAL COST STATEMENT
FOR PROPOSED CHANGES FOR THE
EUREKA FIRE PROTECTION DISTRICT
PENSION PLAN

Prepared August 31, 2020

This actuarial statement is to disclose the financial impact of the Substantial Proposed Changes to the Eureka Fire Protection District Pension Plan which would be effective as of January 1, 2018. This statement is prepared using the actuarial assumptions and methods employed in the January 1, 2018 annual actuarial valuation, which was the actuarial valuation most recent actuarial valuation at the time of the plan restatement, in accordance with R.S.Mo. § 105.665.

Proposed Changes

The current pension benefit equals 2.5% of five-year Average Compensation times credited service through January 1, 2014, plus 2.0% of five-year Average Compensation times credited service after January 1, 2014. Credited service is limited to 30 years.

Under the amendment, the definition of Average Compensation is changed to be the average of an Employee's Monthly Compensation for the Employee's five highest Compensation Years for the ten consecutive Compensation Years immediately prior to that given date.

Also, under the proposal, participants hired after January 1, 2018 are excluded from the plan. Their retirement benefits are provided for under a separate defined contribution plan.

Actuarial Analysis

1. The basis of the proposed change is to a) protect the benefit of current participants whose compensation declines in the years immediately preceding retirement, and b) shift the retirement benefits of future hires to a defined contribution platform to make future costs more predictable.

2. The actuarial valuation assumes 4.5% salary increase. Therefore, the change In the Average Compensation has no impact on the valuation or projection. The plan closure has no impact on the 2018 or 2019 valuation, but will decrease the normal cost for years after 2019.

3. Attached is a 10-year projection of the current plan and the proposed plan.

4. The expected contribution for 2018 is $472,000, which is 20% of payroll. This amount is expected to increase by 2.75% per year. This amount is approximately equal to the Normal Cost plus a 20-year amortization of the unfunded liability.

5. The below table summarizes that there is no immediate impact as of January 1, 2018 of the Proposed Benefit:

	Current	**Proposed**
ACCRUED LIABILITY	$13,661,000	$13,661,000
MARKET VALUE OF ASSETS	$12,044,000	$12,044,000
ACTUARIAL VALUE OF ASSETS	$11,691,000	$11,691,000
UNFUNDED ACCRUED LIABILITY	$1,970,000	$1,970,000
ACCRUED LIABILITY FUNDED RATIO	85.6%	85.6%
NORMAL COST	$296,300	$296,300
NORMAL COST AS A % OF PAYROLL	12.6%	12.6%
EXPENSES	$0	$0
15 YEAR AMORT OF UNFUNDED LIABILITY	$202,100	$202,100
AMORT AS A % OF PAYROLL	8.6%	2.8%
ANNUAL COST (beginning of year)	$498,400	$498,400
ANNUAL COST (end of year)	$533,000	$533,000
ANNUAL COST AS A % OF PAYROLL	22.7%	22.7%
EXPECTED CONTRIBUTION	$472,000	$472,000
ASSUMED PAYROLL	$2,353,000	$2,353,000
EXPECTED BENEFIT PAYMENTS	$438,000	$438,000

6. The post-change contribution rate initially is $533,000 which is 22.7% of payroll. This amount decreases over time because the contribution is set to decrease the Unfunded Accrued Liability over an open 15-year period. The expected contribution is smaller than the 15-year contribution rate through 2020. After this, the expected contribution rate exceeds the 15-year contribution rate.

7. As shown in the projections, we do not believe that the proposed change would impair the ability of the plan to meet the obligations thereof in effect at the time the proposal is made.

8. The assumptions used for this analysis are listed in the cost projection exhibits and the January 1, 2018 actuarial report that has been attached.

9. We believe the assumptions used for the actuarial valuation produce results which, in the aggregate, are reasonable.

10. Individual Entry Age Normal method is used for the actuarial valuation. Unfunded Actuarial Liabilities are amortized over an open 15-year period. The Unfunded Accrued Liability equals the Accrued Liability less the Actuarial Value of Assets.

Ekon Benefits

Keith Kowalczyk
President
Associate of the Society of Actuaries
Enrolled Actuary, No. 20-2812

EUREKA FIRE PROTECTION DISTRICT PENSION PLAN
10 YEAR COST PROJECTION UNDER CURRENT PLAN

	1/1/2018	1/1/2019	1/1/2020	1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028
ACCRUED LIABILITY	$13,661,000	$14,481,000	$15,377,000	$16,117,000	$16,933,000	$17,832,000	$18,823,000	$19,856,000	$20,873,000	$21,982,000	$23,128,000
ESTIMATED ASSETS	$11,691,000	$12,530,000	$13,636,000	$14,595,000	$15,455,000	$16,392,000	$17,413,000	$18,469,000	$19,505,000	$20,624,000	$21,773,000
UNFUNDED ACCRUED LIABILITY	$1,970,000	$1,951,000	$1,741,000	$1,522,000	$1,478,000	$1,440,000	$1,410,000	$1,387,000	$1,368,000	$1,358,000	$1,355,000
ACCRUED LIABILITY FUNDED RATIO	85.6%	86.5%	88.7%	90.6%	91.3%	91.9%	92.5%	93.0%	93.4%	93.8%	94.1%
NORMAL COST	$296,300	$317,000	$332,500	$353,800	$376,000	$399,000	$421,300	$441,600	$466,800	$490,000	$516,900
NORMAL COST AS A % OF PAYROLL	12.6%	12.9%	12.9%	13.2%	13.4%	13.6%	13.7%	13.8%	13.9%	14.0%	14.1%
ANNUAL COST											
NORMAL COST	$296,300	$317,000	$332,500	$353,800	$376,000	$399,000	$421,300	$441,600	$466,800	$490,000	$516,900
EXPENSES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 YEAR AMORT OF UNFUNDED LIABILITY	$202,100	$200,200	$178,600	$156,200	$151,700	$147,800	$144,700	$142,300	$140,400	$139,300	$139,000
ANNUAL COST (beginning of year)	$498,400	$517,200	$511,100	$510,000	$527,700	$546,800	$566,000	$583,900	$607,200	$629,300	$655,900
ANNUAL COST (end of year)	$533,000	$553,000	$547,000	$546,000	$565,000	$585,000	$606,000	$625,000	$650,000	$673,000	$702,000
COST AS A % OF PAYROLL	22.7%	22.5%	21.3%	20.3%	20.1%	19.9%	19.8%	19.5%	19.4%	19.2%	19.2%
EXPECTED CONTRIBUTION - EMPLOYER	$472,000	$485,000	$498,000	$512,000	$526,000	$540,000	$555,000	$570,000	$586,000	$602,000	$619,000
COST AS A % OF PAYROLL	20.06%	19.72%	19.38%	19.06%	18.74%	18.41%	18.11%	17.80%	17.51%	17.21%	16.94%
ASSUMED PAYROLL	$2,353,000	$2,459,000	$2,570,000	$2,686,000	$2,807,000	$2,933,000	$3,065,000	$3,203,000	$3,347,000	$3,498,000	$3,655,000
EXPECTED BENEFIT PAYMENTS	438,000	441,000	669,000	667,000	665,000	661,000	711,000	817,000	823,000	886,000	879,000

Assumptions

Discount Rate	7.00%
Rate of Return	7.00%
Aggregate Payroll Growth	4.50%
Inflation	2.75%

Assumes Level Population (New Hires Replace Exits)

EUREKA FIRE PROTECTION DISTRICT PENSION PLAN
10 YEAR COST PROJECTION UNDER PROPOSED PLAN

	1/1/2018	1/1/2019	1/1/2020	1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028
ACCRUED LIABILITY	$13,661,000	$14,481,000	$15,377,000	$16,074,000	$16,836,000	$17,668,000	$18,578,000	$19,505,000	$20,389,000	$21,345,000	$22,306,000
ESTIMATED ASSETS	$11,691,000	$12,530,000	$13,636,000	$14,595,000	$15,455,000	$16,392,000	$17,413,000	$18,469,000	$19,505,000	$20,624,000	$21,773,000
UNFUNDED ACCRUED LIABILITY	$1,970,000	$1,951,000	$1,741,000	$1,479,000	$1,381,000	$1,276,000	$1,165,000	$1,036,000	$884,000	$721,000	$533,000
ACCRUED LIABILITY FUNDED RATIO	85.6%	86.5%	88.7%	90.8%	91.8%	92.8%	93.7%	94.7%	95.7%	96.6%	97.6%
NORMAL COST	$296,300	$317,000	$292,800	$306,000	$319,800	$334,200	$338,600	$340,200	$355,600	$358,900	$375,000
NORMAL COST AS A % OF PAYROLL	12.6%	12.9%	13.0%	12.8%	12.6%	12.3%	12.1%	12.0%	11.7%	11.6%	11.3%
ANNUAL COST											
NORMAL COST	$296,300	$317,000	$292,800	$306,000	$319,800	$334,200	$338,600	$340,200	$355,600	$358,900	$375,000
EXPENSES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 YEAR AMORT OF UNFUNDED LIABILITY	$202,100	$200,200	$178,600	$151,800	$141,700	$130,900	$119,500	$106,300	$90,700	$74,000	$54,700
ANNUAL COST (beginning of year)	$498,400	$517,200	$471,400	$457,800	$461,500	$465,100	$458,100	$446,500	$446,300	$432,900	$429,700
ANNUAL COST (end of year)	$533,000	$553,000	$504,000	$490,000	$494,000	$498,000	$490,000	$478,000	$478,000	$463,000	$460,000
COST AS A % OF PAYROLL	22.7%	22.5%	22.4%	20.5%	19.4%	18.4%	17.6%	16.8%	15.7%	14.9%	13.9%
EXPECTED CONTRIBUTION - EMPLOYER	$472,000	$485,000	$498,000	$512,000	$526,000	$540,000	$555,000	$570,000	$586,000	$602,000	$619,000
COST AS A % OF PAYROLL	20.06%	19.72%	22.18%	21.45%	20.70%	19.94%	19.90%	20.03%	19.27%	19.43%	18.67%
ASSUMED PAYROLL	$2,353,000	$2,459,000	$2,245,000	$2,387,000	$2,541,000	$2,708,000	$2,789,000	$2,846,000	$3,041,000	$3,099,000	$3,316,000
EXPECTED BENEFIT PAYMENTS	438,000	441,000	669,000	667,000	665,000	661,000	711,000	817,000	823,000	886,000	879,000

Assumptions	
Discount Rate	7.00%
Rate of Return	7.00%
Aggregate Payroll Growth	4.50%
Inflation	2.75%
No New Hires After January 1, 2018 Enter Plan	