

Affton Fire Protection District Pension Program

Cost Statement of Proposed Plan Changes

November 15, 2023





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Certification

This cost statement was prepared for the Affton Fire Protection District to document impacts of implementing proposed pension plan changes under current consideration. The information contained in this document was prepared in order to meet the requirements of Missouri Statute 105.665 and 105.684.

Except where indicated otherwise, the results included in this cost statement are based on the same data, assumptions, methods, and provisions as the 1/1/2023 valuation. This cost statement has been prepared in accordance with generally accepted actuarial principles and practice using methods and assumptions we believe to be reasonable.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- > Plan experience differing from that anticipated by the economic or demographic assumptions;
- > Changes in economic or demographic assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- > Changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report.

The consultants indicated below are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

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Current Structure

- Benefit Formula: 1.73333% of average earnings per year of service up to 30 years of service (52% maximum)
- Normal Retirement Age: Age 65 for non-firefighters and age 60 for all other participants

Proposed Structure

The only changes to the current plan is to increase the benefit multiplier from 1.73333% to 2.16667% effective for active participants as of January 1, 2024 and to change the normal retirement age for non-firefighter participants to age 60:

- Benefit Formula: 2.16667% of average earnings per year of service up to 30 years of service (65% maximum)
- Normal Retirement Age: Age 60 for all participants

All other plan provisions are the same as those used for the 1/1/2023 valuation and are summarized in the appendix to this study.





Reasons for the Statement

- Required by law (Missouri statute 105.665)
- Document various impacts of making changes to plan benefits
- Uniform information for every legislative body/committee before approving and implementing plan changes

Requirements of the Statement

- Immediate impacts to liabilities, normal costs, contributions and funded levels
- Must use the methods of the most recent valuation
- 10-year projections of similar information
- Assumptions and methods used to calculate the impacts
- Specific statements about the plan's ability to make necessary contributions before and after the proposed changes
- The cost statement must be available as public information for 45 days prior to implementing the changes
- The cost statement must be kept on file by the legislative body/ committee and filed with the joint committee on public employee retirement





Summary of Projection Assumptions

Assumption/Method	Description
Discount Rate	6.50%
Asset Performance	6.50% per year Alternate scenario with 0% return in 2023 only
Asset Method	5-year Phase-in Actuarial Value
District Contributions	\$1M Annually
Population	Active population remains level
New Entrants	Based on recent new hires - \$70K starting salary
All other assumptions	Same as January 1, 2023 valuation

The cost projections contained in this report are based on the January 1, 2023 valuation results. Census data and asset information were provided by the plan sponsor and asset advisor and are summarized in the January 1, 2023 actuarial valuation report. Reasonable actuarial techniques and assumptions were used to produce the cost projections.





Financial Impacts: 6.50% return all years

Current Provisions	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Liability	17,344,910	18,203,787	19,086,664	19,822,499	20,654,377	21,495,156	22,423,393	23,426,224	24,273,858	25,076,237	25,898,623
Actuarial Value of Assets	15,601,699	16,985,664	18,216,823	19,155,347	20,012,991	21,558,480	23,229,832	25,018,880	26,719,155	28,425,280	30,201,416
Unfunded Accrued Liability	1,743,211	1,218,123	869,841	667,152	641,386	(63,324)	(806,439)	(1,592,656)	(2,445,297)	(3,349,043)	(4,302,793)
Funded Percentage	89.9%	93.3%	95.4%	96.6%	96.9%	100.3%	103.6%	106.8%	110.1%	113.4%	116.6%
Market Value of Assets	14,246,547	15,668,311	17,148,467	18,520,246	20,012,991	21,558,480	23,229,832	25,018,880	26,719,155	28,425,280	30,201,416
Market Funded Percentage	82.1%	86.1%	89.8%	93.4%	96.9%	100.3%	103.6%	106.8%	110.1%	113.4%	116.6%
Normal Cost + Admin	428,942	437,389	429,187	467,110	468,642	490,280	503,925	475,350	488,867	508,363	520,370
% of Payroll	10.2%	10.3%	9.9%	10.8%	10.5%	10.7%	10.7%	9.8%	10.1%	10.3%	10.4%
Payment on Unfunded	166,889	118,184	79,316	53,241	49,151	-	-	-	-	-	-
% of Payroll	4.0%	2.8%	1.8%	1.2%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Contribution EOY	634,560	591,685	541,556	554,174	551,450	522,148	536,680	506,248	520,643	541,407	554,194
% of Payroll	15.1%	13.9%	12.5%	12.8%	12.3%	11.4%	11.4%	10.4%	10.7%	11.0%	11.1%
ER Contribution EOY	354,748	305,305	265,090	253,058	248,352	203,736	208,181	193,787	198,748	206,888	211,703
% of Payroll	8.4%	7.2%	6.1%	5.8%	5.6%	4.5%	4.4%	4.0%	4.1%	4.2%	4.2%
Proposed Provisions											
Liability	19,947,176	21,069,578	22,224,278	23,201,020	24,299,898	25,412,026	26,635,415	27,957,119	29,025,630	30,046,361	31,089,992
Assets	15,601,699	16,967,744	18,168,925	19,029,730	19,805,031	21,249,590	22,814,037	24,489,870	25,972,460	27,420,757	28,905,859
Unfunded Accrued Liability	4,345,477	4,101,834	4,055,353	4,171,290	4,494,867	4,162,436	3,821,378	3,467,249	3,053,170	2,625,604	2,184,133
Funded Percentage	78.2%	80.5%	81.8%	82.0%	81.5%	83.6%	85.7%	87.6%	89.5%	91.3%	93.0%
Market Value of Assets	14,246,547	15,650,391	17,100,569	18,394,629	19,805,031	21,249,590	22,814,037	24,489,870	25,972,460	27,420,757	28,905,859
Market Funded Percentage	71.4%	74.3%	76.9%	79.3%	81.5%	83.6%	85.7%	87.6%	89.5%	91.3%	93.0%
Normal Cost + Admin	534,384	544,799	534,112	581,429	583,214	610,091	627,391	572,171	599,541	624,095	639,151
% of Payroll	12.7%	12.8%	12.3%	13.4%	13.0%	13.3%	13.3%	11.8%	12.3%	12.7%	12.7%
Payment on Unfunded	388,647	374,742	376,251	390,459	422,421	398,969	374,027	350,349	318,006	280,861	237,419
% of Payroll	9.2%	8.8%	8.7%	9.0%	9.4%	8.7%	7.9%	7.2%	6.5%	5.7%	4.7%
Total Contribution EOY	983,028	979,311	969,537	1,035,061	1,071,001	1,074,649	1,066,510	982,484	977,188	963,778	933,547
% of Payroll	23.4%	23.1%	22.3%	23.9%	23.9%	23.5%	22.6%	20.2%	20.1%	19.6%	18.6%
ER Contribution EOY	703,275	692,990	693,133	734,009	767,968	756,302	738,079	677,143	656,875	630,664	592,273
% of Payroll	16.7%	16.3%	16.0%	16.9%	17.2%	16.5%	15.6%	13.9%	13.5%	12.8%	11.8%
Change in Contribution											
Total Contribution EOY	348,468	387,626	427,981	480,887	519,552	552,501	529,830	476,236	456,544	422,372	379,353
% of Payroll	8.3%	9.1%	9.9%	11.1%	11.6%	12.1%	11.2%	9.8%	9.4%	8.6%	7.6%
ER Contribution EOY	348,527	387,686	428,043	480,951	519,617	552,567	529,898	483,356	458,127	423,776	380,570
% of Payroll	8.3%	9.1%	9.9%	11.1%	11.6%	12.1%	11.2%	9.9%	9.4%	8.6%	7.6%
Payroll	4,202,160	4,245,748	4,342,810	4,332,462	4,472,113	4,575,018	4,719,307	4,864,961	4,860,336	4,912,467	5,014,466



Recommended Employer Contributions



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Financial Impacts: (**) 0.00% return in 2023, 6.50% all other years

Current Provisions	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Liability	17,344,910	18,203,787	19,086,664	19,822,499	20,654,377	21,495,156	22,423,393	23,426,224	24,273,858	25,076,237	25,898,623
Actuarial Value of Assets	15,601,699	16,801,526	17,788,702	18,479,354	19,084,983	20,374,044	21,968,407	23,675,463	25,288,415	26,901,542	28,578,635
Unfunded Accrued Liability	1,743,211	1,402,261	1,297,962	1,343,145	1,569,394	1,121,112	454,986	(249,239)	(1,014,557)	(1,825,305)	(2,680,012)
Funded Percentage	89.9%	92.3%	93.2%	93.2%	92.4%	94.8%	98.0%	101.1%	104.2%	107.3%	110.3%
Market Value of Assets	14,246,547	14,747,620	16,167,931	17,475,976	18,900,844	20,374,044	21,968,407	23,675,463	25,288,415	26,901,542	28,578,635
Market Funded Percentage	82.1%	81.0%	84.7%	88.2%	91.5%	94.8%	98.0%	101.1%	104.2%	107.3%	110.3%
Normal Cost + Admin	428,942	437,389	429,187	467,110	468,642	490,280	503,925	475,350	488,867	508,363	520,370
% of Payroll	10.2%	10.3%	9.9%	10.8%	10.5%	10.7%	10.7%	9.8%	10.1%	10.3%	10.4%
Payment on Unfunded	166,889	133,876	116,521	112,457	130,377	91,561	32,793	-	-	-	-
% of Payroll	4.0%	3.2%	2.7%	2.6%	2.9%	2.0%	0.7%	0.0%	0.0%	0.0%	0.0%
Total Contribution EOY	634,560	608,397	581,179	617,239	637,955	619,661	571,605	506,248	520,643	541,407	554,194
% of Payroll	15.1%	14.3%	13.4%	14.2%	14.3%	13.5%	12.1%	10.4%	10.7%	11.0%	11.1%
ER Contribution EOY	354,748	322,017	304,714	316,123	334,857	301,248	243,105	193,787	198,748	206,888	211,703
% of Payroll	8.4%	7.6%	7.0%	7.3%	7.5%	6.6%	5.2%	4.0%	4.1%	4.2%	4.2%
Proposed Provisions											
Liability	19,947,176	21,069,578	22,224,278	23,201,020	24,299,898	25,412,026	26,635,415	27,957,119	29,025,630	30,046,361	31,089,992
Assets	15,601,699	16,783,717	17,741,062	18,354,143	18,877,581	20,065,867	21,553,372	23,147,262	24,542,583	25,897,938	27,284,057
Unfunded Accrued Liability	4,345,477	4,285,861	4,483,216	4,846,877	5,422,317	5,346,159	5,082,043	4,809,857	4,483,047	4,148,423	3,805,935
Funded Percentage	78.2%	79.7%	79.8%	79.1%	77.7%	79.0%	80.9%	82.8%	84.6%	86.2%	87.8%
Market Value of Assets	14,246,547	14,730,257	16,120,626	17,350,989	18,693,554	20,065,867	21,553,372	23,147,262	24,542,583	25,897,938	27,284,057
Market Funded Percentage	71.4%	69.9%	72.5%	74.8%	76.9%	79.0%	80.9%	82.8%	84.6%	86.2%	87.8%
Normal Cost + Admin	534,384	544,799	534,112	581,429	583,214	610,091	627,391	572,171	599,541	624,095	639,151
% of Payroll	12.7%	12.8%	12.3%	13.4%	13.0%	13.3%	13.3%	11.8%	12.3%	12.7%	12.7%
Payment on Unfunded	388,647	390,424	413,433	450,705	507,772	512,124	500,891	487,920	469,303	451,832	432,174
% of Payroll	9.2%	9.2%	9.5%	10.4%	11.4%	11.2%	10.6%	10.0%	9.7%	9.2%	8.6%
Total Contribution EOY	983,028	996,012	1,009,135	1,099,223	1,161,900	1,195,159	1,201,620	1,128,997	1,138,319	1,145,862	1,140,961
% of Payroll	23.4%	23.5%	23.2%	25.4%	26.0%	26.1%	25.5%	23.2%	23.4%	23.3%	22.8%
ER Contribution EOY	703,275	709,692	732,732	798,171	858,867	876,812	873,189	823,656	818,006	812,748	799,687
% of Payroll	16.7%	16.7%	16.9%	18.4%	19.2%	19.2%	18.5%	16.9%	16.8%	16.5%	15.9%
Change in Contribution											
Total Contribution EOY	348,468	387,615	427,956	481,984	523,945	575,498	630,016	622,749	617,676	604,456	586,767
% of Payroll	8.3%	9.1%	9.9%	11.1%	11.7%	12.6%	13.3%	12.8%	12.7%	12.3%	11.7%
ER Contribution EOY	348,527	387,675	428,018	482,048	524,010	575,564	630,084	629,869	619,258	605,860	587,984
% of Payroll	8.3%	9.1%	9.9%	11.1%	11.7%	12.6%	13.4%	12.9%	12.7%	12.3%	11.7%
Payroll	4,202,160	4,245,748	4,342,810	4,332,462	4,472,113	4,575,018	4,719,307	4,864,961	4,860,336	4,912,467	5,014,466



Recommended Employer Contributions





Additional Comments on Projections

- Missouri Statute 105.684 requirements for a local public retirement system to increase benefits are met:
 - > The Plan is at least 80% funded prior to adopting the change; and
 - > The Plan is at least 75% funded <u>after</u> adopting the change.
- > 10-year projections assume the change occurs at January 1, 2023 even though the change is expected to be effective January 1, 2024. This shows the sensitivity of the results on the current population. Additional information on the demographics of the population can be found in the January 1, 2023 Valuation Report.
- > These projections reflect numerous assumptions, and one should focus on the general trend of the results rather than the absolute dollar amounts.
- The cost projections assume current demographic and economic assumptions are met. Actual results will vary from projections shown in this report, perhaps significantly, due to changes in the assumptions, plan provisions, participant demographics, interest rate movement, actual asset performance, and other actual experience of the plan. Depending on the use of this information, additional cost projections may be necessary to quantify the sensitivity of results.



Assumptions

The following assumptions all match the January 1, 2023 valuation report as required:

Investment Return: 6.50%

This assumption has set by the plan sponsor in conjunction with their asset advisor. We believe this assumption is reasonable based on an application of the JP Morgan capital market assumptions by class to the plan's asset allocation.

Salary Scale: Varies by service based on the following:

<u>Credited Service</u>	Assumed Increase
< 5	6.5%
5-9	5.0%
10-14	3.5%
15+	2.5%

Mortality: PubS-2010 with generational improvements from 2010 based on MP-21

PubG-2010 with generational improvements from 2010 based on MP-21 for Beneficiaries

- Retirement¹: Age 60 (Age 65 for administrative assistants, secretaries, and office managers) and 5 years of participation or current age if greater
- Disability: None

¹ For liabilities reflecting proposed design change, all participants are assumed to retire at age 60 and 5 years of participation or current age if greater.





> Withdrawal: Varies by service as follows:

Credited Service	<u>Rate</u>
< 5	4.0%
5-9	2.0%
10-14	1.0%
15+	0.0%

Additional assumptions made to provide projections:

- > Active participant count flat over the projection period
- Actual contributions are assumed to be \$1.0M per year, or if greater the recommended contribution





- Current Contributions
 - The plan sponsor has made and plans to continue to make contributions exceeding the contributions as calculated and recommended under current plan provisions.
- Proposed Contributions
 - To our knowledge, the additional contributions described as part of the proposed benefit changes will be met based on recent contributions levels. These funds will be provided by designated tax revenue and general funds. The projected improvement of the funding ratio of the plan under the proposed changes over the next 10 years demonstrates this outcome.
- Assumptions
 - The actuarial assumptions and methods used for the valuation were chosen by the employer. In our opinion, all actuarial assumptions and methods used in both the valuation and projections are individually reasonable, and in aggregate produce results which are reasonable.





- > The actuarial cost method used in the valuation was the Entry Age Normal cost method.
- Under this method, the normal cost is the sum of the individual normal costs for all participants. For an active participant, the individual normal cost is determined by spreading the present value at the current age of the projected benefit at the assumed retirement age in such a way that produces a level annual cost over expected earnings for the individual between entry age and assumed retirement age. For a non-active participant, the normal cost is zero.
- The actuarial accrued liability is the sum of the individual accrued liabilities for all plan participants. For an active participant, the individual accrued liability is the accumulation of past normal costs up to the valuation date. For non-active participants, the individual accrued liability is the present value at the current age of future benefits. The unfunded actuarial accrued liability equals the actuarial accrued liability less the actuarial value of assets.
- The total annual contribution of the plan is calculated as the normal cost plus an amount to amortize the unfunded actuarial accrued liability. The unfunded liability is recognized using a 20year closed level amortization schedule. Contributions in excess of the recommended contribution are used to reduce the outstanding balance of the amortization base established earliest. In addition, if the plan is fully funded, all outstanding bases are deemed satisfied. The resulting recommended contribution is increased with interest to reflect anticipate end of year contributions.



Current Plan Provisions

Provision	Description
Normal Retirement ¹	Age 60 with 5 years of participation (Age 65 for admin assistants, secretaries or office managers)
	1.7333% of Average Annual Earnings times Credited Service to a maximum of 30 years (e.g. 52% maximum)
Early Retirement	Age 55 and 15 years of service
	Accrued benefit reduced by 2% of Average Annual Earnings for each year the early retirement precedes normal retirement
Vesting	3 years – 20% 4 years – 40% 5 years – 60% 6 years – 80% 7 years – 100%
Average Annual Earnings	Average of best 3 consecutive years of service preceding retirement
Employee Contributions	7.0% of Earnings
Payment Form	Single Life Annuity as normal form
	50% Joint and Survivor Annuity, 66 2/3%, 75%, 100% Joint and survivor annuity, 10-year Certain and Life Annuity
Actuarial Equivalence	7.5% and the UP-84 mortality table

¹ Proposed change includes Normal Retirement age of 60 for all participants and formula multiplier of 2.16667% for all active participants effective January 1, 2024.