Adams County Retirement Plan

ACTUARIAL VALUATION REPORT

as of January 1, 2022

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June 1, 2022

Ms. Debbie Haines, CEBS
Executive Director
Adams County
4430 South Adams County Parkway, Suite C3406
Brighton, CO 80601-8202

Re: Actuarial Valuation of the Adams County Retirement Plan as of January 1, 2022

Dear Debbie:

We are pleased to present our Report on the actuarial valuation of the Adams County Retirement Plan as of January 1, 2022.

This Report presents the results of the January 1, 2022 actuarial valuation of the Adams County Retirement Plan. The Report describes the current actuarial condition of the Adams County Retirement Plan, determines the Actuarially Determined Contribution (ADC), and analyzes changes in the determined rate.

We certify that the information included herein and contained in our January 1, 2022 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Adams County Retirement Plan as of the valuation date.

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The valuation was based upon information, furnished by the Plan, concerning Plan benefits, financial transactions, active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. This report and these calculations are not intended as legal or accounting advice, and we would recommend review by legal counsel for the compliance of these calculations with all relevant agreements.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events for the Pension Plan. 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 or additional cost or contribution requirements based on the plan's funded status) and;
- changes in plan provisions or applicable law.

The 10.50% employer and 9.00% employee contribution are the rates that comply with law. Due to the many factors affecting a retirement system, users of this report should be aware that contributions made at that rate do not necessarily guarantee long-term benefit security.

This report does not include a detailed assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

We believe that the assumptions and methods used in this report are reasonable and appropriate for the purpose for which they have been used. However, other assumptions and methods could also be reasonable and could result in materially different results. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are deemed to be immaterial.

Certification

The undersigned are independent actuaries and consultants. Paul Wood and Thomas Lyle are actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Paul T Wood

Paul Wood, ASA, FCA, MAAA
Senior Consultant

Thomas Lyle

Thomas Lyle, FSA, FCA, EA, MAAA
Consultant

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

Valuations are prepared annually, as of January 1 of each year, the first day of the fiscal year. The primary purposes of the valuation report are to measure the plan's liabilities, to determine the required contribution rate and to analyze changes in the Adams County Retirement Plan's actuarial position.

In addition, the report provides summaries of the member data, financial data, plan provisions, and actuarial assumptions and methods.

Financing Objectives

The Adams County Retirement Plan is supported by member contributions, employer contributions, and net earnings on the investments of the fund. Contribution rates are set in the plan document, currently at 9.00% for members and 10.50% for employers. Furthermore, the employer rate is scheduled to increase over the next two years until an ultimate rate of 11.50% is met.

Beginning in 2018, the County began making an additional contribution to the Plan, pursuant to an agreement between the County and the Plan; such contributions shall not be less than $2 million per year and will continue until the Plan reaches a specified funding level on a market and actuarial basis. The contribution is based on a reallocation of at least 0.314 mills of the County's total mill levy.

The combined member and employer contributions are intended to be sufficient to pay the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over a period of 22 years from the valuation date. This closed period amortization method was first adopted for use in the January 1, 2020 valuation.

Progress toward Realization of Financing Objectives

The UAAL/(surplus) and the funded ratio (ratio of the actuarial value of assets to the actuarial accrued liability) illustrate the progress toward the realization of certain financing objectives. Based on the actuarial valuation as of January 1, 2022, the Plan has an unfunded liability of $241.34 million and a funded ratio of 57.62%. The funded ratio increased from 54.03% to 57.62% and the Net Employer Actuarially Determined Contribution (ADC) decreased from 11.27% of pay, to 10.65% of pay.

The net employer Actuarially Determined Contribution as a percentage of pay for the year beginning January 1, 2022 is 10.65%. The expected County contribution is 10.50% of pay which creates a contribution shortfall of 0.15% of pay. This compares to a shortfall in the prior year of 1.27% of pay. The employer payroll contribution is scheduled to increase each year by 0.50% of pay until it reaches 11.50% as of January 1, 2024.

The recent amendments to lower future benefit accruals help to decrease the future cost of the plan. Projections indicate an improvement in funded status over time. However, projections are built on assumptions from which experience may vary over time. Ongoing monitoring of the funded levels of the plan is recommended.

Experience During the Year

The plan experienced a liability gain of $0.33 million during fiscal year 2021.

The plan experienced an actuarial asset gain of $12.66 million during fiscal year 2021. This gain was due to the actuarial value of assets earning a return greater than the assumed 7.25% return. The net overall result of the liability gain and the actuarial asset gain was an unfunded liability $12.99 million less than expected at January 1, 2022.

In addition, there was a loss due to a contribution shortfall relative to the ADC of $0.48 million.

Assumptions and methods

There have been no changes in assumptions and methods since the prior valuation. The assumptions have been selected by the Adams County Board of Retirement based upon the actuary's analysis and recommendations from the 2018 Experience Study.

The actuarial assumptions are summarized in Section G of our report.

The results of any actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in this Report are intended to provide information for rational decision making.

Benefit Provisions

All of the benefit provisions reflected in this valuation are those which were in effect on January 1, 2022. There have been no changes to the benefit provisions since the prior valuation.

The benefit provisions are summarized in Section D of our Report.

Data

Adams County staff supplied data for retired, active and inactive members as of January 1, 2022. We did not audit this data, but we did apply a number of tests to the data, and we have concluded that the data is reasonable and consistent with the prior year's data. Adams County staff also supplied asset data as of January 1, 2022.

Financial Position

Due mostly to recognition of asset gains from prior years, the funded ratio on an actuarial value of assets basis increased from January 1, 2021 to January 1, 2022. The funded ratio on a market value basis also improved.

Exhibit A.1
Funded Status Summary ($ in millions)

Valuation Date	January 1, 2022	January 1, 2021
Accrued Liability	$569.41	$551.11
Actuarial Value of Assets (smoothed)	328.08	297.79
Unfunded Accrued Liability	$241.34	$253.32
Funded Ratio (AVA basis)	57.6%	54.0%
Market Value of Assets	$368.47	$313.14
Unfunded Accrued Liability	$200.94	$237.97
Funded Ratio (MVA basis)	64.7%	56.8%
Market Value Rate of Return	19.0%	12.2%
Actuarial Value Rate of Return	11.5%	9.1%

The funded status alone is not appropriate for assessing the need for future contributions. The funded status is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

Financial Position (continued)

Investment gains decreased the Total Actuarially Determined Contribution by roughly 0.5%. Modest liability gains did not have a significant impact on the Total Actuarially Determined Contribution. The Employer Net Actuarially Determined Contribution of 10.65% of pay for Fiscal Year 2022 and 11.27% of pay for Fiscal Year 2021 are based on contributions being made throughout the year, consistent with the funding policy of the Plan.

Exhibit A.2
Contribution Summary
All Numbers Reported Middle of Year, Percent of Pay

Fiscal Year Beginning	January 1, 2022	January 1, 2021
Total Normal Cost	9.47%	9.66%
Amortization of UAL	9.78%	10.17%
Assumed Expenses	0.40%	0.44%
Total Actuarially Determined Contribution	19.65%	20.27%
Estimated Member Contribution	9.00%	9.00%
Net Annual Required Contribution Mid-Year	10.65%	11.27%
Estimated County Contribution	10.50%	10.00%
Contribution Shortfall	0.15%	1.27%

Benefit changes were made as of January 1, 2014, which decrease the rate of benefits accrued for all service after January 1, 2014, both for current members and future members. The lower benefit accruals will have the effect of decreasing the normal cost rate over time.

Executive Summary

Exhibit A.3 Adams County Retirement Plan Executive Summary		
	January 1, 2022	January 1, 2021
1. **Actuarially Determined Contribution**		
a. Total	$ 32,330,968	$ 32,730,115
b. Net Employer Contribution	17,525,738	18,200,211
c. Net Employer %	10.65%	11.27%
2. **Funded Status**		
a. Actuarial Accrued Liability	$ 569,413,773	$ 551,106,494
b. Actuarial Value of Assets (AVA)	328,077,911	297,788,161
c. Unfunded Liability (AVA-basis)	241,335,862	253,318,333
d. Funded Ratio (AVA-basis)	57.6%	54.0%
e. Market Value of Assets (MVA)	$ 368,468,119	$ 313,138,575
f. Unfunded Liability (MVA-basis)	200,945,654	237,967,919
g. Funded Ratio (MVA-basis)	64.7%	56.8%
3. **Summary of Census Data**		
a. Actives		
i. Counts	2,246	2,278
ii. Total Annual Projected Compensation	$ 164,502,555	$ 161,443,374
iii. Average Projected Compensation	73,242	70,871
iv. Average Age	42.8	42.8
v. Average Service	7.7	7.7
b. Members with Refunds Due Counts	232	147
c. Deferred Vested Member Counts	248	213
d. Retired Member Counts	1,146	1,094
e. Beneficiary Counts	127	121
f. Disabled Retiree Counts	56	56
g. Total Members Included in Valuation	4,055	3,909

SECTION B

VALUATION RESULTS

Actuarial Accrued Liability

Exhibit B.1 Adams County Retirement Plan Actuarial Valuation Results Actuarial Accrued Liability		
	January 1, 2022	**January 1, 2021**
1. **Active Members**		
a. Retirement Benefits	$ 194,666,855	$ 199,096,040
b. Withdrawal Benefits	2,298,499	1,843,189
c. Refund Benefits	(6,551,936)	(6,303,640)
d. Disability Benefits	5,112,144	5,176,868
e. Death Benefits	3,002,093	2,960,283
f. Total	$ 198,527,655	$ 202,772,740
2. **Members with Deferred Benefits**	$ 21,269,621	$ 17,761,031
3. **Members Receiving Benefits**	$ 349,616,497	$ 330,572,723
4. **Total**	$ 569,413,773	$ 551,106,494
5. **Actuarial Value of Assets**	$ 328,077,911	$ 297,788,161
6. **Unfunded Actuarial Accrued Liability**	$ 241,335,862	$ 253,318,333

Normal Cost

Exhibit B.2 Adams County Retirement Plan Actuarial Valuation Results Normal Cost		
	January 1, 2022	**January 1, 2021**
1. **Total Dollar Normal Cost**		
a. Retirement Benefits	$ 9,769,246	$ 9,846,712
b. Withdrawal Benefits	5,007,488	4,978,946
c. Disability Benefits	490,402	482,429
d. Death Benefits	305,215	301,291
e. Total	$ 15,572,351	$ 15,609,378
2. **Normal Cost as a Percentage of Pay**	9.47%	9.66%
3. **Normal Cost as a Percentage of Pay by Tier**		
a. Tier 1	13.75%	13.89%
b. Tier 2	11.61%	11.70%
c. Tier 3	8.02%	8.01%

Present Value of Projected Benefits

Exhibit B.3
Adams County Retirement Plan
Actuarial Valuation Results
Present Value of Projected Benefits

	January 1, 2022	January 1, 2021
1. **Active Members**		
a. Retirement Benefits	$ 262,365,103	$ 267,015,368
b. Withdrawal Benefits	34,520,430	33,961,807
c. Disability Benefits	8,506,778	8,497,012
d. Death Benefits	5,216,287	5,146,323
e. Total	$ 310,608,598	$ 314,620,510
2. **Members with Deferred Benefits**	$ 21,269,621	$ 17,761,031
3. **Members Receiving Benefits**	$ 349,616,497	$ 330,572,723
4. **Total**	$ 681,494,716	$ 662,954,264

Actuarially Determined Contribution

Exhibit B.4
Adams County Retirement Plan
Development of the Actuarially Determined Contribution

Fiscal Year Beginning	**January 1, 2022**		**January 1, 2021**	
	Dollar	**Percent of Pay**	**Dollar**	**Percent of Pay**
1. Total Normal Cost	$ 15,572,351	9.47%	$ 15,609,378	9.66%
2. Amortization of Unfunded Actuarial Accrued Liability Over 22 Years	16,094,617	9.78%	16,410,737	10.17%
3. Assumed Administrative Expenses	664,000	0.40%	710,000	0.44%
4. Actuarially Determined Contribution (ADC)	$ 32,330,968	19.65%	$ 32,730,115	20.27%
5. Estimated Member Contribution	14,805,230	9.00%	14,529,904	9.00%
6. Net ADC Mid-Year	$ 17,525,738	10.65%	$ 18,200,211	11.27%
7. Estimated County Contribution Mid-Year	17,272,768	10.50%	16,144,337	10.00%
8. Contribution Shortfall	$ 252,970	0.15%	$ 2,055,874	1.27%
9. Annual Projected Payroll	$ 164,502,555		$161,443,374	

Plan Experience

Exhibit B.5 **Adams County Retirement Plan** **Plan Experience for Fiscal Year 2021**		
Liabilities		
1.	Actuarial Accrued Liability at January 1, 2021	$ 551,106,494
2.	Normal Cost for Fiscal Year 2021	15,609,378
3.	Benefit Payments during Fiscal Year 2021	36,182,477
4.	Interest on Items 1-3 to End of Year	39,209,446
5.	Change in Actuarial Accrued Liability Due to Assumption Changes	-
6.	Change in Actuarial Accrued Liability Due to Provision Changes	-
7.	Expected Actuarial Accrued Liability at January 1, 2022	569,742,841
8.	Actual Actuarial Accrued Liability at January 1, 2022	569,413,773
9.	Liability Gain/(Loss)	329,068
Assets		
10.	Actuarial Value of Assets at January 1, 2021	$ 297,788,161
11.	Benefit Payments and Expenses during Fiscal Year 2021	36,956,270
12.	Contributions during Fiscal Year 2021	33,138,058
13.	Interest on Items 10-12 to End of Year	21,451,231
14.	Expected Actuarial Value of Assets at January 1, 2022	315,421,180
15.	Actual Actuarial Value of Assets at January 1, 2022	328,077,911
16.	Asset Gain/(Loss)	12,656,731
Total		
17.	Total Gain/(Loss)	**$ 12,985,799**

Plan Experience By Source

Exhibit B.6 Adams County Retirement Plan Plan Experience for Fiscal Year 2021 Gain/(Loss) by Source		
1. Asset Gain/(Loss)	$	12,656,731
2. Liability Gain/(Loss)		
a. Salary Gain/(Loss)	$	454,076
b. New Members and Rehire Gain/(Loss)		(743,240)
c. Withdrawal Gain/(Loss)		(156,252)
d. Disability Gain/(Loss)		242,610
e. Retirement Gain/(Loss)		515,927
f. Active Mortality Gain/(Loss)		138,865
g. Annuitant Mortality Gain/(Loss)		121,707
h. LTD to Disability Retirement		42,631
i. Other Demographic		(287,257)
j. Total	$	329,068
3. Total Gain/(Loss)	$	12,985,799

SECTION C

PLAN ASSETS

Statement of Plan Net Assets

Exhibit C.1
Adams County Retirement Plan
Statement of Plan Net Assets

	December 31, 2021	December 31, 2020
Assets		
Investments, at fair value:		
Cash	$ 106,812	$ 2,469,748
Money Market Funds	11,958,579	6,497,769
Public Equity	194,161,101	163,470,786
Private Equity	31,450,277	18,176,116
Floating Rate Debt	43,042,721	17,609,869
Fixed Rate Debt	33,495,921	43,961,036
Low Volatility	-	15,328,742
Real Estate Funds	54,159,661	45,471,168
Liquid Real Assets	-	-
Total cash and investments	$ 368,375,072	$ 312,985,234
Receivables:		
Dividends and Interest	105,972	178,961
Other Assets:		
Fiduciary/Directors Liability Insurance	116,405	113,520
Total assets	$ 368,597,449	$ 313,277,715
Liabilities and net assets held in trust for benefits		
Accrued liabilities	129,330	139,140
Total payables	$ 129,330	$ 139,140
Net assets held in trust for pension benefits	$ 368,468,119	$ 313,138,575

Statement of Changes in Plan Net Assets

	Exhibit C.2 Adams County Retirement Plan Statement of Changes in Plan Net Assets			
	Year Ended December 31, 2021		Year Ended December 31, 2020	
Additions to Net Assets Attributed to:				
Contributions:				
Employer contributions	$	16,069,172	$	14,629,155
Plan Members contributions		14,462,566		13,859,162
Plan Members for Purchase of service				
Mill Levy Revenue		2,606,320		2,455,845
Total contributions	$	33,138,058	$	30,944,162
Investment Income:				
Net appreciation in fair value of investments*	$	56,850,896	$	32,388,492
Interest		595,285		825,435
Dividends		3,539,714		2,579,927
Other		7,466		11,664
Total Investment Income	$	60,993,361	$	35,805,518
Less Investment expense		(1,845,605)		(1,610,402)
Net investment income	$	59,147,756	$	34,195,116
Total additions	$	92,285,814	$	65,139,278
Deductions to Net Assets Attributed to:				
Benefit payments	$	32,115,068	$	30,833,131
Refunds		4,067,409		2,510,968
Administrative expenses		773,793		570,307
Total deductions	$	36,956,270	$	33,914,406
Change in net assets		55,329,544		31,224,872
Net assets held in trust for benefits:				
Beginning of year		313,138,575		281,913,703
End of year	$	368,468,119	$	313,138,575

**Asset value as of December 31, 2020 was restated subsequent to the issuing of the last year's valuation report. Therefore, the amount for year ending December 31, 2021 includes an additional $917,874 to account for the restatement.*

Actuarial Value of Assets

Exhibit C.3
Adams County Retirement Plan
Development of the Actuarial Value of Assets

	Item	Year Ending December 31, 2021
1.	Actuarial value of assets, at beginning of year (prior to corridor)	$ 297,788,161
2.	Market value of assets, at beginning of year	$ 313,138,575
3.	Net new investments	
	a. Contributions received for prior plan year	$ 33,138,058
	b. Benefits paid and administrative expenses	(36,956,270)
	c. Net	$ (3,818,212)
4.	Market value of assets, at end of year	$ 368,468,119
5.	Net MVA earnings [(4) - (2) - (3c)]	$ 59,147,756
6.	Assumed investment return rate	7.25%
7.	Expected return [(6)*(2)+(6)*(3c)/2]	$ 22,564,137
8.	Excess return [(5) - (7)]	$ 36,583,619
9.	Expected actuarial value of assets as of December 31, 2021 [(1) + (3c) + (7)]	$ 316,534,086
10.	Deferred amounts for fiscal year ending December 31,	

	Year	Gain/(Loss)	20% Recognized This Year	Percent Deferred	Amount Deferred
a.	2021	$ 36,583,619	$ 7,316,724	80%	$ 29,266,895
b.	2020	13,864,044	2,772,809	60%	8,318,426
c.	2019	20,501,015	4,100,203	40%	8,200,406
d.	2018	(26,977,595)	(5,395,519)	20%	(5,395,519)
e.	2017	13,748,040	2,749,608	0%	-
f.	Total	$ 57,719,123	$ 11,543,825		$ 40,390,208

11.	Asset gain/(loss) to be recognized as of December 31, 2021	$ 11,543,825
12.	80% of Market Value	$ 294,774,495
13.	120% of Market Value	$ 442,161,743
14.	Actuarial value of assets [(Item 9 + Item 11), but not more than Item 13 or less than Item 12]	$ 328,077,911

Annual Rates of Investment Return

Exhibit C.4 Average Annual Rates of Investment Return				
Fiscal Year Ended December 31,	Actuarial Value		Market Value	
	Annual	Cumulative	Annual	Cumulative
1995	12.1 %	10.7 %	22.9 %	10.1 %
1996	11.6	10.9	12.0	10.4
1997	13.0	11.3	17.0	11.5
1998	12.2	11.4	9.0	11.1
1999	12.0	11.5	4.0	10.2
2000	8.7	11.2	2.6	9.4
2001	6.2	10.7	(1.6)	8.2
2002	(4.5)	9.2	(10.9)	6.3
2003	9.7	9.2	22.4	7.6
2004	4.3	8.8	11.0	7.8
2005	4.4	8.5	6.2	7.7
2006	7.6	8.5	14.2	8.1
2007	11.1	8.6	8.2	8.1
2008	(7.9)	7.6	(26.2)	5.7
2009	11.6	7.8	12.5	6.1
2010	1.9	7.5	9.5	6.3
2011	(0.1)	7.1	(0.5)	5.9
2012	0.4	6.8	12.1	6.2
2013	9.3	6.9	14.1	6.6
2014	8.7	6.9	7.1	6.6
2015	6.4	6.8	(1.7)	6.1
2016	7.2	6.6	8.4	6.0
2017	7.8	6.5	13.4	6.6
2018	4.7	6.5	(3.1)	6.2
2019	5.9	6.4	15.6	6.6
2020	9.1	6.5	12.2	6.8
2021	11.5	7.0	19.0	7.5

SECTION D

SUMMARY OF BENEFIT PROVISIONS

Summary of Benefit Provisions

Based on the Plan Originally effective July 1, 1968 and amended and restated effective January 1, 2022

Participation

Membership in the Retirement Plan is automatic upon the first day of Covered Employment. You are in Covered Employment when you are (1) an elected or appointed County official or deputy, or staff of such person, (2) an employee of an Employer who is in a regular position regularly scheduled to work or budgeted for at least 30 hours each week, or (3) an employee of the Retirement Board who meets these requirements. Any employee of the Retirement Board who meets these requirements is considered an employee of the County for purposes of the Plan.

You are not eligible to participate in the Retirement Plan if you are (1) an employee in a position regularly scheduled to work or budgeted for less than 30 hours each week, (2) a leased employee, (3) an independent contractor, or (4) in a position that does not meet the criteria in the above paragraph, such as a position designated as temporary, seasonal, provisional, regular part-time scheduled to work less than 30 hours per week, project designated full-time, project designated part-time, or an election judge.

Member Contributions

Effective January 1, 2015, each member contributes 9.00% of compensation on a monthly basis. Interest on contributions is credited at a rate of 3.0% per annum compounded monthly.

Contribution Accumulation means the total of the member Pre-2014 Contribution Accumulation and Post-2013 Contribution Accumulation. The Pre-2014 Contribution Accumulation means the total of the member contributions to the retirement fund prior to January 1, 2014, plus interest. The Post-2013 Contribution Accumulation means the total of the member contributions to the retirement fund on or after January 1, 2014, plus interest. The Contribution Accumulation does not include any amounts paid to purchase previous service credit.

After December 31, 1983 member contributions are picked up and paid by the County as provided in Code Section 414(h).

County Contributions

The County, on a monthly basis, is scheduled to make contributions equal to:

- 10.50% of compensation payroll for dates January 2022 through December 2022;
- 11.00% of compensation payroll for dates January 2023 through December 2023;
- 11.50% of compensation payroll for dates subsequent to December 31, 2023.

Credited Service

All service completed during the elapsed time from the member's date of employment, excluding any breaks in service, to the member's date of termination on the basis of 1/365th year for each day of employment after January 1, 1965, provided an employee joined the plan on the first date eligible. Service prior to January 1, 1970 will be included (up to five years) provided the employee became a Member on the first date of eligibility.

Service is credited while a member is on long-term disability or is eligible for disability benefits from Social Security, even if the member does not receive disability benefits from Social Security because they are reduced to zero due to other disability benefits received. No credited service will be granted if the member chooses to receive a lump-sum payment from the Employer's LTD plan unless the member qualifies for disability benefits from Social Security (regardless of whether or not the member actually receives Social Security disability benefits).

Service Purchase

Eligible members may purchase additional years of service credit for any full-time, non-vested previous employment with any public or private employer in the United States, subject to certain restrictions.

Classification of Tiers

- *Tier 1* - Members hired prior to January 1, 2005
- *Tier 2* - Members hired on or after January 1, 2005 but before January 1, 2010
- *Tier 3* - Members hired on or after January 1, 2010

Compensation

Compensation is the total regular compensation paid to the member, reflecting the normal regular salary or hourly wage rate, before any payroll deductions for income tax, Social Security, group insurance, or any other purpose, excluding bonuses, extra pay, overtime pay, workers' compensation, single-sum payments received in lieu of accrued vacation and sick leave upon termination of employment or during the course of employment, required contributions by the County under this Plan, or for Social Security, group insurance, retainers' fees under contract, or the like, but including compensation deferred under Sections 125, 403(b), 414(h), or 457 of the Internal Revenue Code.

Final Average Monthly Compensation

- *Tier 1 - Members hired prior to January 1, 2005:*

  Average of the highest 36 consecutive calendar months of compensation during the last 120 months of employment.

- *Tier 2 - Members hired on or after January 1, 2005 but before January 1, 2010:*

  Average of the highest 60 consecutive calendar months of compensation during the last 120 months of employment.

Career Compensation

- *Tier 3 - Members hired on or after January 1, 2010:*

  Pensionable Compensation from date of participation to retirement.

- *Tiers 1 & 2 - Members hired prior to January 1, 2010:*

  Pensionable Compensation from January 1, 2014 to retirement.

Career Monthly Compensation

Career Compensation divided by Credited Service accrued during the period. If hired before January 1, 2010 and become disabled before January 1, 2014, special calculations apply. For members with a qualified military leave of absence, career compensation will include compensation credited at a rate that would have been in effect during the leave.

Accrued Benefit (Monthly)

Effective January 1, 2014, the accrued benefit for Tier 1 and Tier 2 members is composed of "Component A" benefit plus a "Component B" benefit. Component A shall mean the benefit attributable to service credit earned prior to January 1, 2014. Component B shall mean the benefit attributable to service credit earned on or after January 1, 2014.

Tiers 1 & 2 - Members hired prior to January 1, 2010:

- *Component A Benefit:*

  2.5% of Final Average Monthly Compensation multiplied by Credited Service prior to January 1, 2014 including purchased service.

- *Component B Benefit:*

  Greater of 1.75% of Career Compensation divided by 12, or 1.75% of Career Monthly Compensation times Credited Service earned on or after January 1, 2014.

Accrued Benefit (Monthly) (continued)

Tier 3 - Members hired on or after January 1, 2010:

- 1.75% of Career Compensation divided by 12 or 1.75% of Career Monthly Compensation times Credited Service, if greater.

The minimum monthly accrued benefit for all members is $25 per month per year of Credited Service.

Vested Accrued Benefit

Eligibility:

Five years of Credited Service for all Tiers. Tier 3 formerly required ten years of Credited Service.

Benefit:

100% of the Accrued Benefit determined as of the date of termination. The benefit may be reduced if payment commences before the Normal Retirement Date or the Special Early Retirement Date.

Normal Retirement

Eligibility:

Attainment of age 65.

Benefit:

Accrued Benefit up to a maximum of 80% of the member's average monthly compensation during any consecutive 12-month period in which the member receives their highest average monthly compensation.

Regular Early Retirement

Eligibility:

- *Tier 1 - Members hired prior to January 1, 2005:*

  Attainment of age 55 and 5 years of Credited Service.

- *Tiers 2 & 3 - Members hired on or after January 1, 2005:*

  Attainment of age 55 and 10 years of Credited Service.

Benefit:

- *Tier 1 - Members hired prior to January 1, 2005:*

  Vested Accrued Benefit determined as of the Early Retirement Date, reduced by 1/6 of 1% for each of the first 36 months and 1/4 of 1% for each additional month payments commence prior to the Normal Retirement Date.

- *Tiers 2 & 3 - Members hired on or after January 1, 2005:*

  Vested Accrued Benefit determined as of the Early Retirement Date, reduced by 1/3 of 1% for each of the first 36 months and 5/12 of 1% for each additional month payments commence prior to the Normal Retirement Date.

Special Early Retirement

Eligibility:

- *Tier 1 - Members hired prior to January 1, 2005:*

  Attainment of any age and age plus credited service equals 70 or more at termination.

- *Tier 2 - Members hired on or after January 1, 2005 and prior to January 1, 2010:*

  Attainment of age 50 and age plus credited service equals 70 or more at termination.

- *Tier 3 - Members hired on or after January 1, 2010:*

  Attainment of age 55 and age plus credited service equals 80 or more at termination.

Benefit:

Vested Accrued Benefit determined as of the Special Early Retirement Date, unreduced for early payment.

Disability Retirement

Eligibility:

Total and permanent disability. Member qualifies for disability under the County's long-term disability plan or under Title II of the Social Security Act.

Benefit:

Normal Retirement Benefit considering annual rate of compensation at disability and Credited Service that would have accumulated if employment had continued uninterrupted to the later of the Normal Retirement Date, or the date that the County's long-term disability benefits end. The Component A Benefit will be based on Credited Service attributable to the period ending on December 31, 2013 (including any period through December 31, 2013 while the member was disabled), and the Average Monthly Compensation when the member became disabled. The Component B Benefit will be based on Credited Service attributable to the period beginning on January 1, 2014 and ending on retirement or the date payments under the Employer's LTD plan end, whichever is later (including the period on or after January 1, 2014 while the member was disabled), and the Career Monthly Compensation when the member became disabled.

Benefits commence at Normal Retirement Date, or if later, the first day of the month after payments cease under the County's long-term disability insurance contract. If applicable, members may elect to commence benefits under Early Retirement or Special Early Retirement provisions.

Termination Benefit

Eligibility:

Members with less than five years of Credited Service receive a refund of the member's contributions. Members who have completed at least five years of Credited Service are eligible to receive their Vested Accrued Benefit payable at Normal Retirement Date.

Benefit:

Vested Accrued Benefit determined as of the date of termination but not less than the actuarial equivalent value, determined as of the benefit commencement date, of the Accumulated Contributions as of the Normal Retirement Date.

Refund of Accumulated Contributions

Upon termination prior to any type of retirement, in lieu of a monthly pension benefit, the member may elect to receive a refund of a percentage of the Pre-2014 accumulated contributions (excluding service purchase contributions) according to the following schedule, plus 100% of the Post-2013 accumulated contributions:

	Percent Vested of Pre-2014 Contributions Accumulated At Termination		
Completed Years of Service	**Hired Prior to 1/1/2005**	**Hired 2005-2010**	**Hired on or after January 1, 2010**
Less Than 5	100%	100%	100%
5	110%	100%	100%
6	125%	110%	100%
7	140%	120%	100%
8	155%	130%	100%
9	170%	140%	100%
10	185%	150%	100%
11	200%	160%	100%
12	200%	170%	100%
13	200%	180%	100%
14	200%	190%	100%
15 or more	200%	200%	100%

Pre-Retirement Death Benefit

- *Member is single:*

  Beneficiary receives two times member's accumulated contributions at date of death (excluding service purchase contributions).

- *Member is married:*

  Spouse receives two times member's accumulated contributions at date of death (excluding service purchase contributions); or

  A monthly benefit equal to 60% of the member's vested accrued benefit, commencing the first day of the month after the member's death or age 50 (55 for Terminated Vested Members) whichever is later.

Normal Form

- *Tier 1* - 10-year certain and life
- *Tier 2* - 10-year certain and life
- *Tier 3* - Single life annuity

Optional Forms

- 100% joint and survivor annuity
- 50% joint and survivor annuity
- 66-2/3% last survivor annuity
- 100% joint and survivor annuity with pop up
- 50% joint and survivor annuity with pop up
- For members in Tier 1 and Tier 2 only: Single life annuity
- For members in Tier 3 only: 10-year certain and life

Optional Form Conversion Factors

Optional annuity forms are actuarially equivalent based on 7.25% interest and the 1983 Group Annuity Mortality table blended 50% male and 50% female.

Payment Date

Benefits are paid on the first day of the month following eligibility for receipt.

Rehires

Effective January 1, 2017, any employee who terminates employment and is reemployed and was otherwise entitled to the Rule of 70 (with or without a minimum age of 50), and who is reemployed on or after January 1, 2017, shall be eligible for a Special Early Retirement (a) with respect to the portion of such employee's accrued benefit attributable to Credited Service earned prior to the period of reemployment when the sum of his age plus service (including purchase of service) equals 70 or more and he is not employed by any Employer as an employee, and (b) with respect to the portion of such employee's accrued benefit attributable to Credited Service earned after the period of reemployment when the sum of his age plus service (including purchase of service) equals 80 or more and he is not employed by any Employer as an employee, if the Rule of 80 date is not earlier than the date the employee would have been eligible for a Special Early Retirement if the employee had remained in-service since December 31, 2016.

SECTION E

SUMMARY OF PARTICIPANT DATA

Summary of Census Data

Exhibit E.1 Adams County Retirement Plan Summary of Census Data		
	January 1, 2022	**January 1, 2021**
1. **Active Members**		
a. Counts		
Tier 1	312	360
Tier 2	243	267
Tier 3	1,691	1,651
Total	2,246	2,278
b. Annual Projected Compensation	$ 164,502,555	$ 161,443,374
c. Average Annual Compensation	$ 73,242	$ 70,871
d. Average Age	42.8	42.8
e. Average Service	7.7	7.7
f. Accumulated Member Contributions with Interest	$ 98,573,296	$ 95,420,016
2. **NonVested Members with Refunds Due**		
a. Counts	232	147
b. Amount of Refunds Due	$ 1,763,259	$ 770,128
3. **Deferred Vested Members***		
a. Counts	248	213
b. Annual Deferred Benefits	$ 3,295,692	$ 2,920,653
c. Average Benefit	$ 13,289	$ 13,712
4. **Retired Members**		
a. Counts	1,146	1,094
b. Annual Benefits	$ 30,130,374	$ 28,287,830
c. Average Benefit	$ 26,292	$ 25,857
5. **Beneficiaries**		
a. Counts	127	121
b. Annual Benefits	$ 2,060,789	$ 1,975,391
c. Average Benefit	$ 16,227	$ 16,326
6. **Disabled Retirees**		
a. Counts	56	56
b. Annual Benefits	$ 1,083,802	$ 1,054,492
c. Average Benefit	$ 19,354	$ 18,830
7. Total Members Included in Valuation	4,055	3,909

*Includes 27 deferred disabled members in 2022 and 26 deferred disabled members in 2021.

Summary of Changes in Participant Status

Exhibit E.2
Summary of Changes in Participant Status
During Fiscal Year 2021

	Active Members	With Deferred Benefits[1]	With Refunds Due	Retirees	Disabled Retirees	Beneficiaries	Total
As of January 1, 2021	2,278	213	147	1,094	56	121	3,909
Age retirements	(70)	(4)		74			0
Disability retirements	(1)				1		0
Deferred disability	(3)	3					0
Deaths	(3)	(2)		(25)		(5)	(35)
Vested terminations	(55)	55					0
Rehires	7	(5)	(2)				0
Cashouts	(106)	(13)	(58)				(177)
Expiration of benefits						(3)	(3)
Terminated nonvested with refunds due	(145)		145				0
New beneficiary or Alternate Payee				1		14	15
New entrants during the year[2]	344			2			346
Data correction		1			(1)		0
Net change	(32)	35	85	52		6	146
As of January 1, 2022	2,246	248	232	1,146	56	127	4,055

[1] Includes 27 deferred disabled members at January 1, 2022

[2] Includes 38 members hired and terminated in 2021 with refunds due

Active Member Counts by Age and Service

Exhibit E.3 Active Member Counts by Age and Service as of January 1, 2022								
Age	Service							
	0-4	5-9	10-14	15-19	20-24	25-29	Over 30	Total
Under 20	3	0	0	0	0	0	0	3
20-24	68	3	0	0	0	0	0	71
25-29	218	33	0	0	0	0	0	251
30-34	205	111	5	0	0	0	0	321
35-39	168	125	31	22	3	0	0	349
40-44	141	76	44	56	10	0	0	327
45-49	86	58	38	47	39	3	0	271
50-54	91	50	24	54	33	8	1	261
55-59	70	45	22	31	24	8	10	210
60-64	36	35	17	17	15	7	9	136
65-69	10	9	3	8	2	4	3	39
Over 70	0	2	1	1	2	0	1	7
Total	1,096	547	185	236	128	30	24	2,246

Active Member Average Salary by Age and Service

Exhibit E.4
Active Member Average Salary at Valuation Date by Age and Service[1]
as of January 1, 2022

Age	Service 0-4	5-9	10-14	15-19	20-24	25-29	Over 30	Total
Under 20								
20-24	$45,603							$46,114
25-29	53,133	$62,067						54,308
30-34	59,052	68,517	$75,741					62,585
35-39	61,080	72,689	88,900	$84,630				69,226
40-44	67,287	70,404	83,947	94,153	$80,909			75,270
45-49	67,876	80,723	84,824	91,958	91,212			81,031
50-54	64,516	74,545	75,988	86,322	90,532	$110,018		76,883
55-59	60,564	71,950	80,595	79,961	79,246	104,577	$83,806	72,884
60-64	63,920	72,859	68,679	70,971	66,491	85,210	81,648	70,249
65-69	58,495	75,086		89,321				74,522
Over 70								43,713
Total	$59,728	$71,724	$81,403	$87,204	$83,849	$98,376	$86,089	$69,495

[1] Average Salary not shown if group contains less than five members

Exhibit E.5 10-Year Projected Benefit Payments (Closed Group)			
Fiscal Year Ended December 31,	**Actives**	**Inactives**	**Total**
2022	$ 2,418,518	$ 33,693,478	$ 36,111,996
2023	4,211,579	33,500,984	37,712,563
2024	5,862,979	33,261,045	39,124,024
2025	7,554,088	33,021,654	40,575,742
2026	9,131,369	32,709,551	41,840,920
2027	11,248,280	32,403,638	43,651,918
2028	13,404,999	32,036,810	45,441,809
2029	15,566,386	31,625,280	47,191,666
2030	17,650,504	31,088,305	48,738,809
2031	19,671,080	30,571,223	50,242,303

Exhibit E.6 History of Refunds	
Fiscal Year Ended December 31,	**Refund Amount**
2006	$ 1,225,048
2007	1,187,708
2008	1,220,911
2009	1,043,307
2010	910,161
2011	1,761,213
2012	1,870,042
2013	2,029,377
2014	3,253,473
2015	3,086,203
2016	2,989,507
2017	2,328,219
2018	3,357,700
2019	2,666,844
2020	2,510,968
2021	4,067,409

SECTION F

HISTORICAL SCHEDULES

Schedule of Funding Progress

Exhibit F.1
Adams County Retirement Plan
Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
(1)	(2)	(3)	(4)=(3)-(2)	(5)=(2)/(3)	(6)	(7)=(4)/(6)
1/1/2013	$ 199,076,191	$ 386,835,357	$ 187,759,166	51.5%	$ 96,443,158	194.7%
1/1/2014	214,140,815	379,802,962	165,662,147	56.4%	102,088,234	162.3%
1/1/2015	227,350,888	398,075,505	170,724,617	57.1%	107,861,819	158.3%
1/1/2016	235,725,998	419,358,970	183,632,972	56.2%	113,995,220	161.1%
1/1/2017	246,434,159	440,035,366	193,601,207	56.0%	120,573,734	160.6%
1/1/2018	259,301,061	484,193,980	224,892,919	53.6%	127,273,779	176.7%
1/1/2019	265,656,097	505,342,712	239,686,615	52.6%	135,696,959	176.6%
1/1/2020	275,805,624	529,979,010	254,173,386	52.0%	149,499,049	170.0%
1/1/2021	297,788,161	551,106,494	253,318,333	54.0%	161,443,374	156.9%
1/1/2022	328,077,911	569,413,773	241,335,862	57.6%	164,502,555	146.7%

Schedule of Employer Contributions

Exhibit F.2 Adams County Retirement Plan Schedule of Employer Contributions			
Fiscal Year Ended December 31,	Actuarially Determined Contribution	Actual County Contribution *	Percentage Contributed
2006	$ 10,110,243	$ 5,175,320	51.2%
2007	11,320,501	5,740,166	50.7%
2008	11,542,116	6,445,284	55.8%
2009	16,237,097	7,048,276	43.4%
2010	16,856,144	7,153,366	42.4%
2011	17,559,138	7,235,764	41.2%
2012	18,762,499	7,533,395	40.2%
2013	19,659,013	8,289,767	42.2%
2014	15,406,279	8,964,812	58.2%
2015	15,254,244	9,709,230	63.6%
2016	15,858,211	10,316,491	65.1%
2017	16,276,851	10,954,633	67.3%
2018	19,360,970	13,634,301	70.4%
2019	21,014,878	14,698,525	69.9%
2020	18,154,422	17,085,000	94.1%
2021	18,200,211	18,675,492	102.6%
2022	17,525,738	TBD	TBD

*County Contribution includes $2,012,610 in mill levy revenue for fiscal year 2019, $2,455,845 in mill levy revenue for fiscal year 2020, and $2,606,320 in mill levy revenue for fiscal year 2021.

Supplementary Information

Exhibit F.3 Adams County Retirement Plan Supplementary Information	
Valuation Date	January 1, 2022
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent of Payroll Closed
Remaining Amortization Period	22 Years
Asset Valuation Method	5-Year Smoothed Market
Actuarial Assumptions:	
Investment Rate of Return	7.25%
Projected Salary Increases	Service-based increases from 3.5% to 6.10%
Inflation	2.50%
Cost of Living Adjustments	N/A

SECTION G

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Methods and Assumptions

I. Valuation Date

The valuation date is January 1st of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial liability.

1. The valuation is prepared on the projected benefit basis. The present value of each participant's expected benefit payable at retirement or termination is determined, based on age, service, sex, compensation, and the interest rate assumed to be earned in the future (7.25%). The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of terminating with a service benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

2. The employer contributions required to support the benefits of the Plan are determined following a level percent funding approach, and consist of a normal cost contribution and an accrued liability contribution.

3. The normal contribution is determined using the Entry Age Normal cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of anticipated covered service, would be required in addition to the contributions of the participant to meet the cost of all benefits payable on their behalf.

4. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 22 years from the valuation date as a level percentage of payroll. It is assumed that payments are made throughout the year.

III. Actuarial Value of Assets

The actuarial value of assets is based on recognizing gains and losses over a five-year period where gains and losses are determined by comparing the projected market value of assets (based on the prior year's market value of assets, cash flows during the year and expected investment returns on those amounts) to the current year's market value of assets. The actuarial value of assets must be between 80% and 120% of market value.

IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.25% per annum, compounded annually, composed of an assumed 2.50% inflation rate and a 4.75% real rate of return. This rate represents the assumed return, net of all investment expenses.

2. Salary increase rate: Inflation rate of 2.50%, plus productivity component of 1.00%, plus step-rate/ promotional component as shown (adopted May 2018).

Completed Years of Service	Percentage Increase in Salary		
	Merit	Wage Inflation	Total
0	2.60 %	3.50 %	6.10 %
5	2.30	3.50	5.80
10	2.00	3.50	5.50
15	1.50	3.50	5.00
20	0.20	3.50	3.70
25	0.15	3.50	3.65
30	0.00	3.50	3.50
35	0.00	3.50	3.50
40	0.00	3.50	3.50

3. Wage inflation: 3.50%

4. Payroll growth: 3.50%

B. Demographic Assumptions

1. Mortality rates (pre- and post-retirement) – The valuation assumes fully generational mortality. The base mortality table used is the RP-2014 Blue Collar Healthy Annuitant Generational Mortality Table. Future mortality improvements are assumed each year using the Ultimate MP Scale. The following are sample rates for 2022 (adopted May 2018):

Sample Attained Ages	Probability of Death Pre-Retirement	
	Men	**Women**
20	0.05 %	0.02 %
25	0.06	0.02
30	0.05	0.02
35	0.06	0.03
40	0.08	0.04
45	0.12	0.07
50	0.20	0.11
55	0.33	0.17
60	0.56	0.25
65	0.99	0.38
70	1.59	0.64
75	2.57	1.08
80	4.15	1.82
85	7.77	4.63
90	13.73	9.98

Sample Attained Ages	Probability of Death Post-Retirement	
	Men	**Women**
20	0.05 %	0.02 %
25	0.07	0.02
30	0.09	0.04
35	0.12	0.07
40	0.17	0.11
45	0.25	0.17
50	0.38	0.26
55	0.55	0.37
60	0.78	0.53
65	1.16	0.81
70	1.82	1.29
75	2.91	2.12
80	4.79	3.52
85	8.01	6.00
90	13.59	10.38

2. Mortality rates (post-disablement) – RP-2014 Disabled Male and Female No Collar Mortality Table. Future mortality improvements are assumed each year using the Ultimate MP Scale. Sample rates for 2022 shown below (adopted May 2018):

Sample Attained Ages	Probability of Death Post-Disability	
	Men	**Women**
20	0.05 %	0.02 %
25	0.20	0.09
30	0.48	0.23
35	0.85	0.42
40	1.25	0.65
45	1.65	0.90
50	1.99	1.17
55	2.27	1.41
60	2.57	1.64
65	3.06	1.99
70	3.90	2.65
75	5.24	3.86
80	7.40	5.74
85	10.94	8.50
90	16.71	12.47

3. Disability rates. Sample rates shown below (adopted May 2018):

Sample Attained Ages	Probability of Disablement Next Year	
	Men	Women
25	0.02 %	0.02 %
30	0.03	0.03
35	0.05	0.05
40	0.08	0.08
45	0.13	0.13
50	0.22	0.22
55	0.42	0.42
60	0.60	0.60

4. Termination rates (for causes other than death, disability or retirement): Termination rates are based on service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown (adopted May 2018):

Completed Years of Service	Probability of Termination Next Year	
	Men	Women
0	12.00 %	12.00 %
5	9.00	9.00
10	6.00	6.00
15	4.00	4.00
20	2.00	2.00
25	1.00	1.00
30	1.00	1.00
35	1.00	1.00

5. Retirement rates (adopted May 2018).

	Tier 1		Tier 2		Tier 3	
Age	Age-based	Rule-based	Age-based	Rule-based	Age-based	Rule-based
< 46	12.00%	12.00%				
46	12.00%	12.00%				
47	12.00%	12.00%				
48	12.00%	12.00%				
49	12.00%	12.00%				
50	15.00%	15.00%		20.00%		
51	15.00%	15.00%		15.00%		
52	15.00%	15.00%		15.00%		
53	15.00%	15.00%		15.00%		
54	15.00%	15.00%		15.00%		
55	15.00%	15.00%	15.00%	15.00%	15.00%	25.00%
56	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
57	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
58	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
59	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
60	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
61	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
62	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
63	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
64	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
65	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
66	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
67	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
68	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
69	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
70	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
71	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
72	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
73	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
74	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
75	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

C. Expense Loading. Based on the prior three year average, rounded to the nearest $1,000.

Year	Noninvestment Expenses		
2019	$647,743		
2020	570,307		
2021	773,793		
	$1,991,843	÷ 3 =	$663,948

Average	$663,948
Loading	$664,000

D. Other Assumptions

1. Percent married: 85% of employees are assumed to be married.

2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

3. Cost of living adjustment: None.

4. Optional forms: Members are assumed to elect the normal form of benefit.

5. Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

6. Current and future deferred vested participants are assumed to retire at age 55 or the age they meet normal retirement eligibility if they are not eligible for early retirement at age 55. Deferred disabled participants are assumed to commence benefits at age 60.

7. Pay increase timing: Middle of year.

8. Decrement timing: Decrements of all types are assumed to occur mid-year.

9. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

10. Decrement relativity: Decrement rates are used directly, without adjustment for multiple decrement table effects.

11. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

SECTION H

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The computed contribution rate shown on Exhibit B.4 may be considered as a minimum contribution rate that complies with the Board's policy. Actual contributions are set by statute. The timely receipt of the contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the statutory rate do not necessarily guarantee benefit security.

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	January 1, 2022	January 1, 2021	January 1, 2020
Ratio of the market value of assets to total payroll	2.2	1.9	1.9
Ratio of actuarial accrued liability to payroll	3.5	3.4	3.5
Ratio of actives to retirees and beneficiaries	1.7	1.8	1.8
Ratio of net cash flows to market value of assets	-1%	-1%	-2%
Duration of the actuarial accrued liability	11.3	11.4	11.5

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 4.0 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 5.5 times the payroll, a change in liability 2% other than assumed would equal 11% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability

SECTION I

DETERMINISTIC PROJECTIONS

Deterministic Projections

Projections are a vital part of the annual valuation process for the Adams County Retirement Plan. The Adams County Retirement Plan is funded on a fixed rate basis meaning the contributions made to the plan do not automatically change as a result of experience, good or bad. As a result, long term projected outcomes can change significantly year to year due to fluctuations in investment returns.

Included in this section are two sets of deterministic projection. The first assumes the County continues to increase contributions each year until an ultimate rate of 11.50% is met. The second set assumes the County continues to contribute at the current contribution level. This analysis is meant to demonstrate the positive impact on the Plan of increased County contributions. Please note that both projection sets assume an annual rate of return on assets of exactly 7.25%.

Deterministic Projections

Set One – Assumes County Contribution Increase Until and Ultimate Rate of 11.5% is Met

Adams County Retirement Plan
Projection Results Based on January 1, 2022 Actuarial Valuation
Discount Rate: 7.25%

Valuation as of January 1,	Actuarial Accrued Liability (AAL, in thousands)	Actuarial Value of Assets (AVA, in thousands)	Unfunded Actuarial Accrued Liability (UAAL, in thousands)	Funded Ratio	Employer ADC	Employer Normal Cost and Admin	Amortization Payment	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll - (in thousands)	Employee Contributions (in thousands)	Employer Contributions (in thousands)	Mill Levy Revenue (in thousands)
									Employee	Employer				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2022	$569,414	$328,078	$241,336	57.6%	10.65%	0.87%	9.78%	7.25%	9.00%	10.50%	$164,503	$14,805	$17,273	$2,606
2023	589,613	361,426	228,187	61.3%	9.44%	0.24%	9.20%	7.25%	9.00%	11.00%	170,603	15,354	18,766	2,639
2024	608,838	402,331	206,507	66.1%	8.38%	0.08%	8.30%	7.25%	9.00%	11.50%	176,812	15,913	20,333	2,672
2025	628,032	441,591	186,442	70.3%	7.42%	-0.08%	7.50%	7.25%	9.00%	11.50%	183,238	16,491	21,072	2,705
2026	647,050	479,706	167,345	74.1%	6.54%	-0.21%	6.75%	7.25%	9.00%	11.50%	189,818	17,084	21,829	2,739
2027	666,039	512,422	153,617	76.9%	5.89%	-0.34%	6.23%	7.25%	9.00%	11.50%	196,632	17,697	22,613	2,773
2028	684,821	547,052	137,769	79.9%	5.19%	-0.46%	5.65%	7.25%	9.00%	11.50%	203,518	18,317	23,405	2,808
2029	703,408	583,763	119,645	83.0%	4.41%	-0.56%	4.97%	7.25%	9.00%	11.50%	210,635	18,957	24,223	-
2030	721,848	619,836	102,013	85.9%	3.67%	-0.64%	4.32%	7.25%	9.00%	11.50%	218,059	19,625	25,077	-
2031	740,379	658,392	81,987	88.9%	2.83%	-0.72%	3.55%	7.25%	9.00%	11.50%	225,848	20,326	25,973	-
2032	759,065	699,718	59,347	92.2%	1.85%	-0.79%	2.64%	7.25%	9.00%	11.50%	233,934	21,054	26,902	-
2033	778,156	744,282	33,874	95.6%	0.71%	-0.85%	1.56%	7.25%	9.00%	11.50%	242,274	21,805	27,862	-
2034	797,784	792,448	5,336	99.3%	0.00%	-0.26%	0.26%	7.25%	9.00%	11.50%	250,866	22,578	28,850	-
2035	818,081	844,582	(26,501)	103.2%	0.00%	1.35%	-1.35%	7.25%	9.00%	11.50%	259,855	23,387	29,883	-
2036	839,211	901,131	(61,921)	107.4%	0.00%	3.36%	-3.36%	7.25%	9.00%	11.50%	269,161	24,224	30,954	-
2037	861,355	962,581	(101,225)	111.8%	0.00%	5.96%	-5.96%	7.25%	9.00%	11.50%	278,699	25,083	32,050	-
2038	884,660	1,029,370	(144,710)	116.4%	0.00%	9.44%	-9.44%	7.25%	9.00%	11.50%	288,587	25,973	33,188	-
2039	909,306	1,102,019	(192,714)	121.2%	0.00%	14.33%	-14.33%	7.25%	9.00%	11.50%	298,818	26,894	34,364	-
2040	935,348	1,180,965	(245,617)	126.3%	0.00%	21.67%	-21.67%	7.25%	9.00%	11.50%	309,243	27,832	35,563	-
2041	962,837	1,266,617	(303,780)	131.6%	0.00%	33.94%	-33.94%	7.25%	9.00%	11.50%	320,061	28,806	36,807	-
2042	991,850	1,359,496	(367,645)	137.1%	0.00%	58.52%	-58.52%	7.25%	9.00%	11.50%	331,068	29,796	38,073	-
2043	1,022,382	1,460,010	(437,628)	142.8%	0.00%	132.34%	-132.34%	7.25%	9.00%	11.50%	342,470	30,822	39,384	-
2044	1,054,532	1,568,752	(514,221)	148.8%	0.00%	150.32%	-150.32%	7.25%	9.00%	11.50%	354,277	31,885	40,742	-
2045	1,088,344	1,686,295	(597,952)	154.9%	0.00%	168.97%	-168.97%	7.25%	9.00%	11.50%	366,482	32,983	42,145	-
2046	1,123,763	1,813,152	(689,389)	161.3%	0.00%	188.36%	-188.36%	7.25%	9.00%	11.50%	379,026	34,112	43,588	-
2047	1,160,812	1,949,939	(789,127)	168.0%	0.00%	208.49%	-208.49%	7.25%	9.00%	11.50%	391,984	35,279	45,078	-
2048	1,199,506	2,097,320	(897,813)	174.8%	0.00%	229.35%	-229.35%	7.25%	9.00%	11.50%	405,408	36,487	46,622	-
2049	1,239,961	2,256,109	(1,016,148)	182.0%	0.00%	250.93%	-250.93%	7.25%	9.00%	11.50%	419,373	37,744	48,228	-
2050	1,282,251	2,427,159	(1,144,908)	189.3%	0.00%	273.31%	-273.31%	7.25%	9.00%	11.50%	433,820	39,044	49,889	-
2051	1,326,348	2,611,248	(1,284,900)	196.9%	0.00%	296.47%	-296.47%	7.25%	9.00%	11.50%	448,833	40,395	51,616	-
2052	1,372,206	2,809,226	(1,437,020)	204.7%	0.00%	320.50%	-320.50%	7.25%	9.00%	11.50%	464,333	41,790	53,398	-

Deterministic Projections
Set Two – Assumes County Contribution Remain at Current Level

Adams County Retirement Plan
Projection Results Based on January 1, 2022 Actuarial Valuation
Discount Rate: 7.25%

Valuation as of January 1,	Actuarial Accrued Liability (AAL, in thousands)	Actuarial Value of Assets (AVA, in thousands)	Unfunded Actuarial Accrued Liability (UAAL, in thousands)	Funded Ratio	Employer ADC	Employer Normal Cost and Admin	Amortization Payment	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll - (in thousands)	Employee Contributions (in thousands)	Employer Contributions (in thousands)	Mill Levy Revenue (in thousands)
									Employee	Employer				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2022	$569,414	$328,078	$241,336	57.6%	10.65%	0.87%	9.78%	7.25%	9.00%	10.50%	$164,503	$14,805	$17,273	$2,606
2023	589,613	361,426	228,187	61.3%	9.44%	0.24%	9.20%	7.25%	9.00%	10.50%	170,603	15,354	17,913	2,639
2024	608,838	401,448	207,390	65.9%	8.42%	0.08%	8.34%	7.25%	9.00%	10.50%	176,812	15,913	18,565	2,672
2025	628,032	438,812	189,220	69.9%	7.53%	-0.08%	7.61%	7.25%	9.00%	10.50%	183,238	16,491	19,240	2,705
2026	647,050	474,828	172,222	73.4%	6.73%	-0.21%	6.95%	7.25%	9.00%	10.50%	189,818	17,084	19,931	2,739
2027	666,039	505,225	160,814	75.9%	6.18%	-0.34%	6.52%	7.25%	9.00%	10.50%	196,632	17,697	20,646	2,773
2028	684,821	537,297	147,524	78.5%	5.59%	-0.46%	6.05%	7.25%	9.00%	10.50%	203,518	18,317	21,369	2,808
2029	703,408	571,193	132,215	81.2%	4.94%	-0.56%	5.49%	7.25%	9.00%	10.50%	210,635	18,957	22,117	-
2030	721,848	604,173	117,676	83.7%	4.34%	-0.64%	4.98%	7.25%	9.00%	10.50%	218,059	19,625	22,896	-
2031	740,379	639,335	101,044	86.4%	3.65%	-0.72%	4.37%	7.25%	9.00%	10.50%	225,848	20,326	23,714	-
2032	759,065	676,940	82,125	89.2%	2.87%	-0.79%	3.66%	7.25%	9.00%	10.50%	233,934	21,054	24,563	-
2033	778,156	717,431	60,725	92.2%	1.95%	-0.85%	2.80%	7.25%	9.00%	10.50%	242,274	21,805	25,439	-
2034	797,784	761,141	36,642	95.4%	0.86%	-0.90%	1.77%	7.25%	9.00%	10.50%	250,866	22,578	26,341	-
2035	818,081	808,407	9,673	98.8%	0.00%	-0.49%	0.49%	7.25%	9.00%	10.50%	259,855	23,387	27,285	-
2036	839,211	859,643	(20,432)	102.4%	0.00%	1.11%	-1.11%	7.25%	9.00%	10.50%	269,161	24,224	28,262	-
2037	861,355	915,297	(53,942)	106.3%	0.00%	3.18%	-3.18%	7.25%	9.00%	10.50%	278,699	25,083	29,263	-
2038	884,660	975,772	(91,112)	110.3%	0.00%	5.95%	-5.95%	7.25%	9.00%	10.50%	288,587	25,973	30,302	-
2039	909,306	1,041,547	(132,241)	114.5%	0.00%	9.83%	-9.83%	7.25%	9.00%	10.50%	298,818	26,894	31,376	-
2040	935,348	1,113,013	(177,665)	119.0%	0.00%	15.68%	-15.68%	7.25%	9.00%	10.50%	309,243	27,832	32,470	-
2041	962,837	1,190,536	(227,699)	123.6%	0.00%	25.44%	-25.44%	7.25%	9.00%	10.50%	320,061	28,806	33,606	-
2042	991,850	1,274,585	(282,734)	128.5%	0.00%	45.01%	-45.01%	7.25%	9.00%	10.50%	331,068	29,796	34,762	-
2043	1,022,382	1,365,514	(343,133)	133.6%	0.00%	103.76%	-103.76%	7.25%	9.00%	10.50%	342,470	30,822	35,959	-
2044	1,054,532	1,463,859	(409,327)	138.8%	0.00%	119.65%	-119.65%	7.25%	9.00%	10.50%	354,277	31,885	37,199	-
2045	1,088,344	1,570,129	(481,785)	144.3%	0.00%	136.14%	-136.14%	7.25%	9.00%	10.50%	366,482	32,983	38,481	-
2046	1,123,763	1,684,767	(561,005)	149.9%	0.00%	153.28%	-153.28%	7.25%	9.00%	10.50%	379,026	34,112	39,798	-
2047	1,160,812	1,808,321	(647,509)	155.8%	0.00%	171.07%	-171.07%	7.25%	9.00%	10.50%	391,984	35,279	41,158	-
2048	1,199,506	1,941,376	(741,869)	161.8%	0.00%	189.51%	-189.51%	7.25%	9.00%	10.50%	405,408	36,487	42,568	-
2049	1,239,961	2,084,660	(844,700)	168.1%	0.00%	208.59%	-208.59%	7.25%	9.00%	10.50%	419,373	37,744	44,034	-
2050	1,282,251	2,238,937	(956,686)	174.6%	0.00%	228.38%	-228.38%	7.25%	9.00%	10.50%	433,820	39,044	45,551	-
2051	1,326,348	2,404,887	(1,078,539)	181.3%	0.00%	248.86%	-248.86%	7.25%	9.00%	10.50%	448,833	40,395	47,127	-
2052	1,372,206	2,583,256	(1,211,051)	188.3%	0.00%	270.10%	-270.10%	7.25%	9.00%	10.50%	464,333	41,790	48,755	-