

Wayne County Employees'
Retirement System
(Excluding Wayne County Airport Authority)
Annual Actuarial Valuation Report
September 30, 2022



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May 24, 2023

Retirement Commission (Board)
Wayne County Employees' Retirement System
Detroit, Michigan

Dear Commission Members:

The results of the Annual Actuarial Valuation of the assets, actuarial present values and contribution rates needed to fund benefits provided by the Wayne County Employees' Retirement System (WCERS), excluding the Wayne County Airport Authority (WCAA) (except where otherwise noted), are presented in this report. The results for the WCAA are provided in a separate report.

The date of the valuation was September 30, 2022. The report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the Retirement System only in its entirety and only with the permission of the Board. Use of this report by a third party does not create a relationship between GRS and the party. GRS is not responsible for unauthorized use of this report.

The valuation was based upon data, furnished by WCERS staff, concerning financial operations and active members, vested former members, retirees, and beneficiaries. We acknowledge the help of the WCERS staff with appreciation. We checked the data for internal and year-to-year consistency, but did not audit the data. We are not responsible for the completeness or accuracy of the data.

The purpose of the valuation is to measure the System's funding progress and to determine the County contribution rates for the fiscal year beginning October 1, 2023 in accordance with the WCERS funding policy. Information related to the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 is provided in a separate document. The results of the valuation are not applicable for other purposes.

Valuation results and comments are presented in Section A. The computed contributions shown on page A-2 may be considered a minimum contribution rate that complies with the Board's funding policy. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered.

The computed contributions shown in this report are determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes risk metrics in Section D but does not include a more robust 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.

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. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

This report was prepared by actuaries who have substantial experience valuing public employee retirement plans. To the best of our knowledge, this report is complete and accurate and the valuation was conducted in accordance with standards of practice promulgated by the Actuarial Standards Board. In our opinion, the assumptions used for the valuation are reasonable for the purpose of the measurement being taken.

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. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training, and Processes Team who developed and maintain the model.

The signing actuaries are independent of the plan sponsor.

Judith A. Kermans and Jamal J. Adora are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Judith A. Kermans, EA, FCA, MAAA



Jamal J. Adora, ASA, EA, MAAA

JAK/JJA:rmn



SECTION A

VALUATION RESULTS AND COMMENTS

Funding Objective

The funding objective for the Retirement System is to establish and receive contributions which, when invested at the assumed rate of return, will accumulate assets over each member's working years that will be sufficient to pay expected retirement benefits.

Contribution Rates

The Retirement System is supported by member contributions, employer contributions and investment income on Retirement System assets. Members contribute percentages of their pay (by Ordinance and/or collective bargaining agreement) and the employer contributes the actuarially determined remainder needed to meet the funding objective.

Members in the October 1, 2015 Plan contribute on gross wages, but all results are converted to base wages in this report because the County contributions (and benefits) are determined on base wages.

Contributions are determined by the actuarial valuation and are sufficient to:

- (1) Cover the actuarial costs allocated to the current year by the actuarial cost method (the normal cost);
and
- (2) Finance over a period of future years the actuarial costs not covered by present assets and anticipated future normal costs (unfunded actuarial accrued liability).

Contribution requirements for the fiscal year ending September 30, 2024 are shown on page A-2.

Contributions as a Percent-of-Payroll to Finance the County's Defined Benefit Plans of the Retirement System

Defined Benefit Plans - Contributions [!] for	Fiscal Year Ending	
	September 30, 2024	September 30, 2023
Total Normal Cost [^]	9.26 %	9.31 %
Less Portion Paid by Members [*]	6.76 %	6.87 %
County Defined Benefit Normal Cost	2.50 %	2.44 %
Unfunded Actuarial Accrued Liability [#]	52.90 %	53.25 %
Total Computed Employer Rate	55.40 %	55.69 %
Minimum Dollar Amounts	\$58,463,206	\$55,240,807

* Weighted average of the various contribution rates. Although members in the October 1, 2015 Plan contribute on gross wages, all results are converted to base wages because County contributions (and benefits) are determined on base wages.

Amortized as a level percent of payroll according to the schedule below.

[^] Includes Plan 4 Disability benefits for certain groups.

[!] Does not include stipend liability.

Historical contribution rates for prior fiscal years are shown on page A-4.

The total computed employer contribution rate shown above should be applied to the Defined Benefit Plan payroll to determine dollar contributions to be deposited into the Retirement System for Fiscal Year 2024; however, such amount should not be less than the dollar amount shown above assuming payment occurs by mid-year. If payment occurs later, interest would need to be added.

The contribution rate and dollar amount shown above was calculated in accordance with the Board's funding policy (Unfunded Actuarial Accrued Liability (UAAL)) amortized as a level percent-of-payroll over initial periods of 10 years for assumption changes, 10 years for Medical Examiner Office Memorandum of Agreement (MEO MOA) and POAM/Local 3317 changes, 5 years for Separation Agreements, and 16 years (starting in the September 30, 2018 valuation) for remaining UAAL.

For specific information on the Funding Policy, please refer to Section D. The chart below shows the various sources of unfunded liabilities, the remaining amortization periods and the associated unfunded liability payment.

Source	Initial Period	Remaining Period	9/30/2022 Amount	Computed FY 2023 Contribution	Projected 9/30/2023 Amount	FY 2024 Contribution
Base	16	12	\$354,910,930	\$ 33,205,415	\$344,553,520	\$ 35,834,119
2016 Assumption Changes	10	4	56,185,614	12,452,827	47,109,608	12,826,412
MEO MOA	10	3	130,820	35,618	102,843	36,686
2017 Separation Agreements	5	-	195,351	201,801	-	-
2021 Assumption Changes	10	9	56,808,007	6,856,709	53,556,944	7,062,411
POAM/Local 3317 Changes	10	9	526,660	63,568	496,519	65,475
Total			\$468,757,382	\$ 52,815,938	\$445,819,434	\$ 55,825,103
Projected Payroll						\$105,524,101
UAAL Contribution Rate						52.90%



Contributions as a Percent-of-Payroll to Finance the County's Defined Benefit Plans of the Retirement System

Defined Benefit Plans - Contributions for	Contributions for Fiscal Year Ending September 30, 2024						
	Sheriff		Sewer/Drain	Road	Circuit Court	Other County	Total County
	POAM	Local 3317					
Total Normal Cost [^]	10.14 %	9.73 %	n/a	9.08 %	9.03 %	8.86 %	9.26 %
Less Portion Paid by Members*							6.76 %
County Defined Benefit Normal Cost							2.50 %
Unfunded Actuarial Accrued Liability [#]	n/a	n/a	n/a	n/a	n/a	n/a	52.90 %
Total Computed Employer Rate	n/a	n/a	n/a	n/a	n/a	n/a	55.40 %
Minimum Dollar Amounts							\$58,463,206

* *Weighted average of the various contribution rates.*

Unfunded Actuarial Accrued Liability (UAAL) amortized as a level percent-of-payroll as described on page A-2 in accordance with the Board's funding policy.

^ *Includes Plan 4 Disability benefits for certain groups.*

The Wayne County Commission established the payment of a monthly stipend benefit to pre-Medicare eligible retirees that previously received health insurance from the County. Section 141-44(g) of the WCRO indicates that if the County does not pay the stipend payment in advance to WCERS, it will not be provided to retirees. The stipend liability is NOT included in any of the calculations shown above. Please see page A-9 for information on the stipend liability.

Historical Schedule of Normal Cost Rates and Unfunded Actuarial Accrued Liabilities Contribution Amounts as Percents of Payroll for Defined Benefit Plans

Fiscal Year Ending	Valuation Date September 30 ^{@!}	Contribution Rates		
		Employer Normal Cost	UAAL	Total
2015	2013	8.85 %	40.10 %	48.95 %
2016	2014	7.10 %	43.58 %	50.68 %
2017	2015*	0.03 %	46.69 %	46.72 %
2018	2016 #	2.31 %	50.68 %	52.99 %
2019	2017	2.07 %	50.19 %	52.26 %
2020	2018	2.32 %	45.34 %	47.66 %
2021	2019	2.16 %	43.59 %	45.75 %
2022	2020	1.90 %	49.33 %	51.23 %
2023	2021 #*	2.44 %	53.25 %	55.69 %
2024	2022	2.50 %	52.90 %	55.40 %

Amounts are percents of base wages in FY 2017 and later; pensionable wages used in prior years.

* After benefit changes.

@ Reflects transfers from DC to DB (if any).

After assumption changes (adopted after Experience Study for 2016 and 2021).

! Does not include stipend liability.

Fiscal Year Ending	Valuation Date September 30	Employer Dollar Contributions		
		Computed Minimum (1)	Actual Contributed* (2)	Ratio (2) / (1)
2016	2014	\$63,688,602	\$ 96,655,167	151.76 %
2017	2015	47,467,616	61,830,334	130.26 %
2018	2016	55,082,405	144,639,837	262.59 %
2019	2017	56,869,257	68,633,312	120.69 %
2020	2018	52,280,754	57,638,508	110.25 %
2021	2019	51,703,879	56,770,685	109.80 %
2022	2020	52,411,871	58,319,186	111.27 %
2023	2021	55,240,807	n/a	n/a
2024	2022	58,463,206	n/a	n/a

* Including transfers from Airport (if any) for payment of Combined Pre-2002 Retiree Liability. Excludes health stipend.



Funding Progress Indicators

The funding progress and status of the defined benefit plans is measured by the following indicators:

- **The ratio of the funding value of assets to accrued liabilities.** The ratio is expected to hold steady or gradually move toward 100% in the absence of benefit changes, assumption changes or valuation method changes.
- **The ratio of the unfunded actuarial accrued liability to member payroll.** In a soundly financed retirement system, the amount of the unfunded actuarial accrued liabilities will be controlled and prevented from increasing in the absence of benefit improvements. The ratio is a relative indicator of the condition in an inflationary environment.

Valuation Date September 30	Accrued Liability [!]	Funding Value of Assets [@]	Funded Ratio	Defined Benefit Member Payroll	Unfunded Actuarial Accrued Liability	
					Dollars	% of Payroll
(\$ in thousands)						
2013	\$1,526,591	\$672,284	44%	\$125,485	\$854,307	681 %
2014	1,499,542	681,573	45%	117,308	817,969	697 %
2015*	1,376,742	740,195	54%	94,850	636,547	671 %
2016#	1,436,560	782,839	54%	97,973	653,721	667 %
2017	1,416,754	780,642	55%	102,579	636,112	620 %
2018	1,390,355	863,172	62%	103,397	527,183	510 %
2019	1,367,984	879,462	64%	106,529	488,522	459 %
2020	1,343,982	873,375	65%	96,437	470,607	488 %
2021#*	1,370,543	896,348	65%	93,493	474,195	507 %
2022	1,345,409	876,652	65%	99,467	468,757	471 %

Payroll based on base wages in FY 2017 and later; pensionable wages used in prior years.

* After benefit changes.

@ Reflects transfers to DB Plan (if any).

After changes in assumptions (adopted after Experience Study for 2016 and 2021).

! Does not include stipend liability.

Short Condition Test

If the contributions to WCERS are level in concept and soundly executed, the System will **pay all promised benefits when due – the ultimate test of financial soundness**. Testing for level contribution rates is **the long-term test**. A **short condition test** is one means of checking a system’s progress under its funding program. In a short condition test, the plan’s present assets (cash and investments) are compared with:

- 1) Active member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives; and
- 3) The liabilities for service already rendered by active members.

The test is shown below. As of September 30, 2022, there were 100% of the assets needed to cover liabilities related to member contributions on deposit. Almost every system has assets at least equal to member contributions. **Beyond that, there were only 70% of the assets needed to cover retiree liabilities and none at all to cover the employer portion of active member liabilities. It is very important that rapid progress be made in funding the retiree liability to 100%.**

Valuation Date	Aggregate Actuarial Accrued Liabilities for			Valuation Assets (Funding Value)	Portion of Accrued Liabilities Covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
	Member Contributions	Retirees and Beneficiaries	Members (Employer Financed Portion)				
	(... \$1,000s ...)						
9/30/2014	\$ 100,218	\$ 1,128,348	\$ 270,976	\$ 681,573	100%	52%	0%
9/30/2015	91,806	1,142,343	142,593	740,195	100%	57%	0%
9/30/2016	92,970	1,207,108	136,482	782,839	100%	57%	0%
9/30/2017	93,312	1,187,208	136,234	780,642	100%	58%	0%
9/30/2018	92,374	1,164,651	133,330	863,172	100%	66%	0%
9/30/2019	92,806	1,150,369	124,809	879,462	100%	68%	0%
9/30/2020	87,856	1,138,840	117,286	873,375	100%	69%	0%
9/30/2021	87,293	1,157,657	125,593	896,348	100%	70%	0%
9/30/2022	83,125	1,140,796	121,488	876,652	100%	70%	0%

The chart above does NOT include the retiree pre-Medicare stipend liability. It does include any refunds due active members that have terminated employment but who have not collected a refund of member contributions.

Derivation of Experience Gain (Loss) Year Ended September 30, 2022

Actual experience will never (except by coincidence) coincide exactly with assumed experience. Gains and losses often cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below.

	Actuarial Accrued Liability (AAL) (A)	Actuarial Value of Assets (AVA) (B)	Unfunded Actuarial Accrued Liability (UAAL) (C) = (A) - (B)
(1) Beginning of Year (BOY)	\$1,370,542,713	\$ 896,348,199	\$ 474,194,514
(2) Total Normal Cost (including service and annuity purchases)	11,934,049	-	11,934,049
(3) Total Contributions (including transfers and net of pre-Medicare stipend)	-	70,374,552	(70,374,552)
(4) Benefit Payments and Refunds (net of pre-Medicare stipend)	(121,719,738)	(121,719,738)	-
(5) Administrative Expenses and audit adjustments	-	(2,598,920)	2,598,920
(6) Interest: $\{(1) + 1/2 [(2) + (3) + (4) + (5)]\} \times 6.75\%$	88,806,366	58,682,890	30,123,476
(7) Expected Before Changes: (1) + (2) + (3) + (4) + (5) + (6)	\$1,349,563,390	\$ 901,086,983	\$ 448,476,408
(8) Change from revised assumptions	-	-	-
(9) Change from benefit modifications	-	-	-
(10) Expected After Changes: (7) + (8) + (9)	\$1,349,563,390	\$ 901,086,983	\$ 448,476,408
(11) Actual End of Year (EOY)	1,345,409,396	876,652,014	468,757,382
(12) Gain or Loss: (10)-(11)	\$ 4,153,994	\$ 24,434,969	\$ (20,280,974)
(13) Direction	Gain	Loss	Loss
(14) Percent of BOY AAL (12)/(1A)	0.3%	1.8%	(1.5)%

Reconciliation of Member Data

	Active	Vested Deferred	Retirees	Totals
2021	1,688	192	4,369	6,249
New	267			267
Retired	(60)	(7)	67	-
Non-Duty Disabled	(5)		5	-
Duty Disabled	(4)		4	-
Death/Off Rolls			(236)	(236)
New Beneficiary			59	59
Vested Deferred	(6)	6		-
Terminated [^]	(203)			(203)
Rehired	-		-	-
Data Adjustment*	-	23	17	40
2022	1,677	214	4,285	6,176

[^]May include members that were vested and/or may eventually return to work.

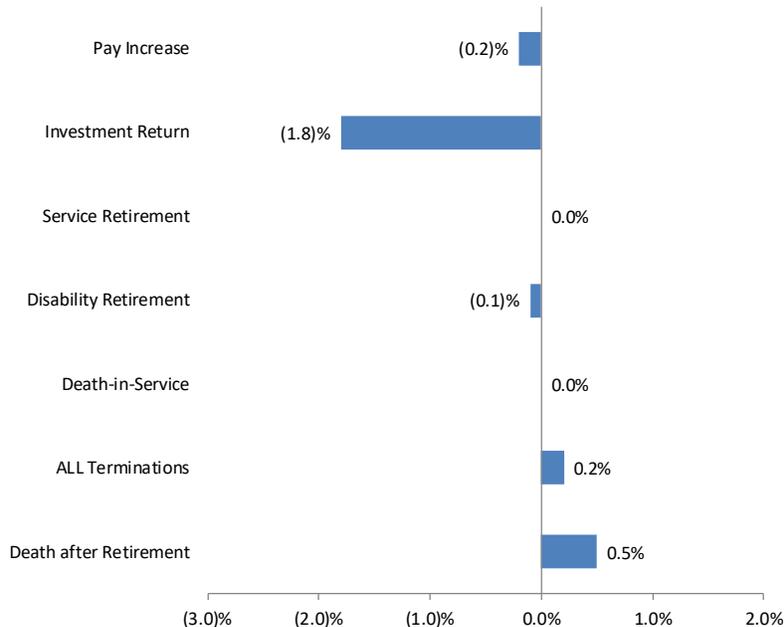
*Includes (E)DROs, annuity purchases, death before retirement, and delayed reporting.

We observed 236 actual retiree deaths compared to 190 expected.



Gain (Loss) by Source

Type of Risk Area	Gain (Loss) in Period	
	Totals \$ in millions	Percent of Liabilities
Risks Related to Assumptions		
Economic Risk Areas:		
Pay Increases If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	\$(2.8)	(0.2)%
Investment Return If there is greater investment return recognition than assumed, there is a gain. If less return recognition, a loss.	(24.4)	(1.8)%
Demographic Risk Areas:		
Full and Reduced Service Retirements If members retire at older ages, there is a gain. If younger ages, a loss.	0.2	0.0%
Terminated Vested Deferred Retirements If more liabilities are released than assumed, there is a gain. If fewer releases, a loss.	(0.7)	(0.1)%
Ordinary Death Benefits If there are fewer than assumed, there is a gain. If more, a loss.	0.1	0.0%
Service-Connected Death Benefits If there are fewer than assumed, there is a gain. If more, a loss.	0.0	0.0%
Ordinary Disability Benefits If there are fewer disabilities than assumed, there is a gain. If more, a loss.	(0.4)	0.0%
Service-Connected Disability Benefits If there are fewer disabilities than assumed, there is a gain. If more, a loss.	(0.3)	0.0%
Terminated with Refund If more liabilities are released by other separations than assumed, there is a gain. If fewer releases, a loss.	3.2	0.2%
Post-Retirement Mortality If there are more deaths than assumed, there is a gain. If fewer, a loss.	7.1	0.5%
Total Gain (or Loss) Related to Assumptions:	(18.0)	(1.3) %



Numbers may not add due to rounding.

Comments on the Actuarial Valuation

- 1. Experience (Total Plan):** The Market Value rate of return during fiscal year 2022 was (12.8)%, and the total WCERS fund had a \$142.7 million loss in investment income. The fund was assumed to earn 6.75% or \$68.7 million in investment income. Under the asset valuation method, investment gains and losses are spread over a 4-year period. The net result of this year's (actuarial) investment loss, and carryover (actuarial) gains and losses from prior years, is a net recognized (actuarial) investment loss of \$28.6 million (see page B-8). As of September 30, 2022, the Funding Value of assets exceeds the Market Value by \$81.3 million and the Funding Value rate of return was 3.9%. The County groups receive a proportionate share of each year's Funding Value of Assets (see page B-13). An aggregate gain/(loss) analysis (for County alone) is shown on page A-7. Additional detail on gains and losses is shown on page A-8.
- 2. Status:** Computed actuarial accrued liabilities exceed the Funding Value of assets by \$468.8 million for the County. The County group of the Wayne County Employees' Retirement System (WCERS) is 65% funded, based upon the Funding Value of Assets. Based on the Market Value of Assets, the County group is 60% funded.

Although the funded status is comparable to last year, we remain concerned about potential cash flow problems for the WCERS. The assets in the plan are not sufficient to cover current retiree liabilities and the ratio of assets (Market Value) to retiree benefit payroll is 6.7. This means that approximately seven years of retiree benefit payments can be paid from current assets; the ability to make such payments beyond that period is heavily dependent upon future contributions and future investment return. The WCERS Funding Policy promotes funding by defining the amount of time in which certain types of unfunded liabilities should be paid off; adhering to the Funding Policy should ultimately lead to the plan becoming 100% funded. The Unfunded Actuarial Accrued Liability (UAAL) is amortized over several layers as shown on page A-2. The remaining amortization years for each layer will decrease by 1 year each annual valuation cycle in accordance with the Funding Policy; for example, in next year's valuation, there will be 11 years remaining in the schedule for the "Base" layer. Volatility may increase due to the operation of gains and losses as the amortization period for the base layer decreases. See Section D for a copy of the Funding Policy.

- 3. Pre-Medicare Stipend:** Effective December 2015, certain current and future retirees are eligible to receive a pre-Medicare stipend. The provisions of the stipend are outlined in the Settlement Agreement dated June 18, 2015, the WCRO, and our supplemental report dated November 18, 2015. WCERS is not obligated to pay the monthly stipend if it is not paid to WCERS in advance by the County, Section 141-44(g) of the WCRO states in part, "The retirement system's actuary shall separately track within the system's annual valuation the funding status of the stipend subaccount." While the unfunded liability of the *pension* portion of WCERS is *not* affected by the existence of the Stipend, the unfunded liability of WCERS as a whole is affected by the pay-as-you-go pre-Medicare stipend. The liability for the stipend as of September 30, 2022 is \$22.1 million. The funded status of the pension portion of WCERS is 65%, while the funded status of WCERS as a whole (with the stipend) is 64%.

Comments on the Actuarial Valuation

- 4. Assumption Changes:** There were no assumption changes reflected in the September 30, 2022 valuation. The WCERS Board approved demographic assumption changes pursuant to GRS' 2015-2020 Experience Study dated August 24, 2021, and adopted an interest rate of 6.75%; these assumption changes were first implemented in the September 30, 2021 valuation.
- 5. Benefit Changes:** There were no benefit changes reflected in the September 30, 2022 valuation.
- 6. Combined Pre-2002 Retiree Liability:** Effective with the September 30, 2007 actuarial valuation of the Wayne County Employees' Retirement System (WCERS), a separate employer contribution rate was computed each year for the Wayne County Airport Authority (WCAA). The original calculations (in 2008) were based on certain concepts that were agreed to by staff of the interested parties (County, WCAA and WCERS) at that time. One of the concepts was that the Combined Pre-2002 Retiree liability would be funded with benefits being paid by the County. The liability and assets would be tracked by the actuary each year so that adjustments could be made if, at some point in the future, the Combined Pre-2002 Retiree obligation became unfunded. The Combined Pre-2002 liability became unfunded a few years after the 2008 agreement. In 2015, the WCAA committed to a payment schedule for the WCAA's theoretical share (10.25%) of the Combined Pre-2002 Retiree unfunded liability based on assumptions and methods in accordance with the Executed Memorandum of Understanding (MOU) between the WCERS, WCAA and the County (granted by the Wayne County Commission on July 27, 2017). The initial schedule provided for payments of \$4.4 million per year for 5 years from the WCAA (FY 2016 through FY 2020). **Furthermore, in accordance with Section 3.04 of the MOU, the WCAA was to pay their remaining share, if any, of the Combined Pre-2002 Retiree UAAL determined as of the September 30, 2020 valuation. A reconciliation of the WCAA's Theoretical Portion of the Combined Pre-2002 Retiree Liability through September 30, 2020 is shown below:**

	Fiscal Year (September 30)					
	2015	2016	2017	2018	2019	2020
(1) Assets BOY	\$15,278,397	\$15,302,135	\$16,222,390	\$17,870,902	\$21,292,934	\$24,493,195
(2) One-time IEF Award Credit [#]	5,326,760	-	-	-	-	-
(3) WCAA Payments*	-	4,400,000	4,400,000	6,600,000	6,600,000	Prepaid
(4) Benefits Paid to Retirees	5,363,501	4,895,385	4,681,749	4,440,804	4,186,858	3,953,455
(5) Investment Return Rate (MV)	0.48%	9.40%	12.00%	6.67%	3.50%	2.83%
(6) Investment Return Amount	60,479	1,415,640	1,930,261	1,262,836	787,119	637,606
(7) Assets EOY: 1+2+3-4+6	\$15,302,135	\$16,222,390	\$17,870,902	\$21,292,934	\$24,493,195	\$21,177,346
(8) Accrued Liability EOY	35,974,521	36,089,136	34,157,962	31,820,260	29,656,623	27,504,826
(9) UAAL EOY: (8)-(7)	\$20,672,386	\$19,866,746	\$16,287,060	\$10,527,326	\$ 5,163,428	\$ 6,327,480

* Actual payments received during Fiscal Years 2016-2019; increased payments in 2018-2019 acted to prepay for the scheduled 2020 payment.

In 2015, the WCAA received credit for a portion (\$5,326,760) of the Inflation Equity Fund (IEF) award to be used to offset the payments towards the Combined Pre-2002 Retiree liability.

Comments on the Actuarial Valuation

To date, an official agreement regarding the settlement of the Combined Pre-2002 Retiree Unfunded Liability has not been reached. No amounts were paid by the WCAA in Fiscal Years 2021 or 2022, which means that the County made all of the benefit payments for the combined retiree group in FYs 2021 and 2022.

A schedule of the Combined Pre-2002 Retirees is shown below:

Combined Pre-2002 Retirees as of September 30						
Valuation Year	Number	Annual Benefits	Average (In Years)		Annual Benefit	Calculated Liabilities
			Age	Service		
2015	3,139	\$ 48,827,409	79.5	23.8	\$15,555	\$350,970,937
2016 #	3,003	\$ 46,676,193	80.1	23.7	\$15,543	\$352,089,129
2017	2,816	\$ 44,392,574	80.4	23.8	\$15,764	\$333,248,413
2018	2,637	\$ 41,721,885	80.9	23.9	\$15,822	\$310,441,562
2019	2,457	\$ 39,424,389	81.2	24.0	\$16,046	\$289,332,909
2020	2,267	\$ 36,815,676	81.5	24.0	\$16,240	\$268,339,768
2021 #	2,076	\$ 34,603,752	81.8	24.1	\$16,668	\$252,420,327
2022	1,937	\$ 32,708,775	82.3	24.1	\$16,886	\$232,556,709

After changes in assumptions (adopted after Experience Study for 2016 and 2021).

7. **Recognition of Accelerated Contributions:** Any accelerated contributions made by various divisions (Airport, Roads) are recognized in the valuation after they are actually made and act to reduce the required contribution in the future. In the 2022 fiscal year, \$5 million in accelerated/additional contributions were made by the Roads.

8. **Interest Crediting on Member Accounts:** The interest rate credited to member contributions, as adopted by the Board, was 0.75% for fiscal years ending September 30, 2020 through 2023. The WCERS Board passed a resolution at its February 27, 2023 meeting to have this rate reviewed in connection with 5-Year Experience Studies going forward, instead of continuing to review this rate annually. In the valuation, the member contribution balances are projected to accrue interest at 0.75% per year for all future years.

Comments on the Actuarial Valuation

9. Employee Contributions: The weighted average employee contribution rate as a percentage of base pay was 6.87% in the last valuation, but decreased to 6.76% in this valuation. This weighted average amount will fluctuate from year to year based on the ratio of gross pay to base pay, as well as the proportion of people above the \$52,155 threshold requiring a 1.0% increase in the member rate. Employees actually contribute based on gross pay (pensionable wages) rather than base wages (upon which pensions are based). Employee contribution rates based on gross pay must be converted into rates as a percentage of base pay. A comparison of gross pay to base wages is shown below:

Date	Base Pay - Basis On Which County Contributes / Pensions Based	Gross Pay - Basis On Which Member Contributes	Ratio of Gross Pay to Base Pay
September 30			
2016	\$ 97,972,865	\$ 117,798,535	1.20
2017	102,579,319	115,968,729	1.13
2018	103,397,388	120,534,050	1.17
2019	106,529,163	120,771,275	1.13
2020	96,437,165	113,698,558	1.18
2021	93,493,430	105,778,875	1.13
2022	99,466,586	110,093,756	1.11

As indicated on page C-13, we will work with WCERS Staff to update member contribution rates.

Conclusion

As shown on page A-5, the Plan has gone from being 44% funded in 2013 to 65% funded in 2022. The accelerated funding policy adopted by the Board and the additional contributions made by the County in prior years were important factors in this remarkable increase. We would like to commend the Board, WCERS staff and the County on these actions. It is in the best interest of WCERS that the County continue to contribute more than the calculated rate, given that WCERS retiree liability (see page A-6) is less than 100% funded.

Other Observations

General Implications of Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's Funding Policy, if all actuarial assumptions are met (including the assumption of the plan earning 6.75% on the actuarial value of assets), it is expected that:

- 1) The employer normal cost as a percentage of pay should remain relatively level as time passes since nearly all of the active population is covered by the new provisions;
- 2) The contribution rate will increase from present levels by the end of the amortization period;
- 3) The unfunded actuarial accrued liabilities will be fully amortized after the amortization periods end; and
- 4) The funded status of the plan will increase gradually toward a 100% funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial (Funding) value of assets. Unless otherwise indicated, with regard to any funded status measurements in this report:

- 1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; in other words, of transferring obligations to an unrelated third party in an arm's length market value type transaction.
- 2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
- 3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

Actuarial Balance Sheet - September 30, 2022

Present Resources and Expected Future Resources

A. Valuation assets	
1. Net assets at market value	\$ 807,336,480
2. Valuation adjustment	69,315,534
3. Valuation assets	876,652,014
B. Actuarial present value of expected future employer contributions	
1. For normal costs*	15,677,660
2. For unfunded actuarial accrued liabilities	468,757,382
3. Total	484,435,042
C. Actuarial present value of expected future member contributions	51,159,065
D. Total Actuarial Present Value of Present and Expected Future Resources	\$1,412,246,121

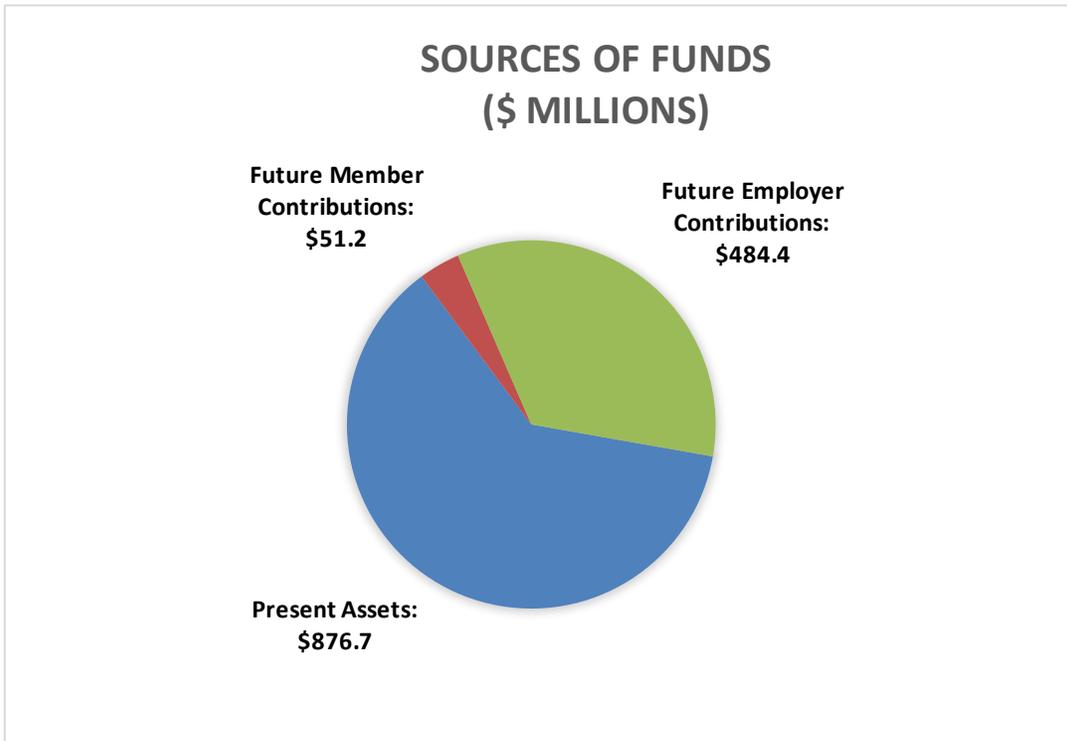
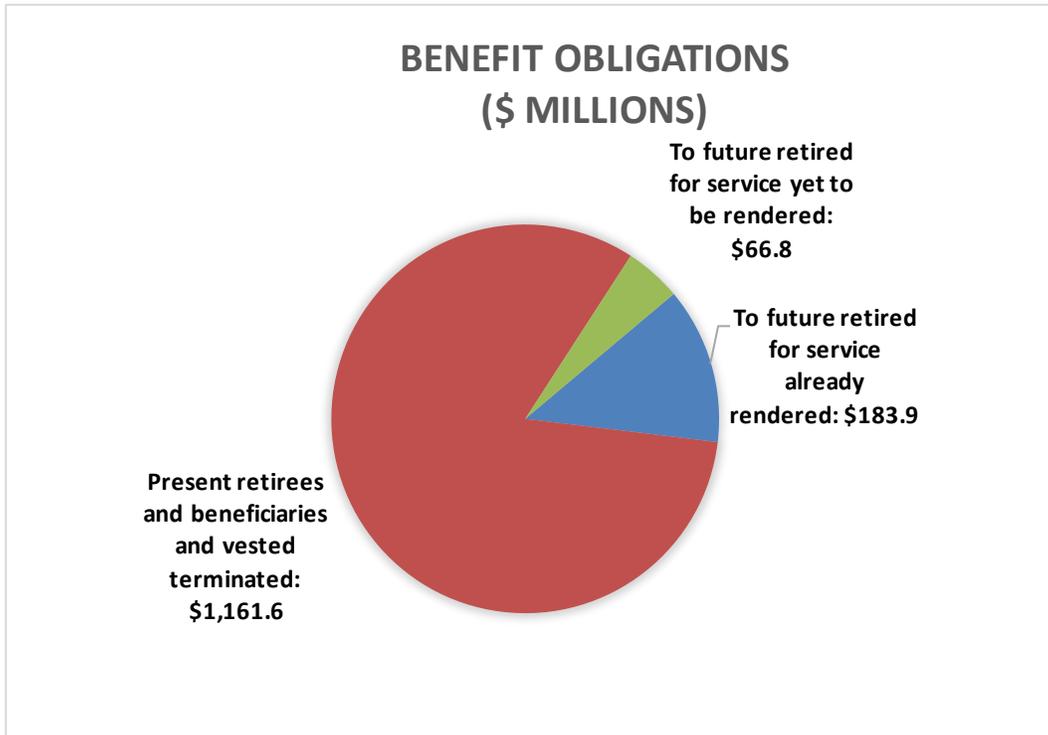
* Includes Administrative Expenses.

Actuarial Present Value of Expected Future Benefit Payments and Reserves

A. To retired members and beneficiaries	\$1,140,796,053
B. To vested terminated members	20,759,779
C. To present active members	
1. Allocated to service rendered prior to valuation date	183,853,564
2. Allocated to service likely to be rendered after valuation date*	66,836,725
3. Total	250,690,289
D. Total Actuarial Present Value of Expected Future Benefit Payments and Reserves	\$1,412,246,121

* Includes Administrative Expenses.

Financing \$1,412.3 Million of Benefit Promises September 30, 2022



SECTION B

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Defined Benefit Plan 1

Availability:

Defined Benefit Plan 1 was closed to new hires on August 15, 1983 (or on the date in a negotiated agreement). With the exception of certain bargaining groups, service accrued on/after October 1, 2015 counts toward eligibility only.

Normal Retirement (no reduction factor for age):

Eligibility - Sheriff: 25 years of service.

Others: Age 50 with 25 years of service, age 60 with 5 years of service or any age with 30 years of service.

Pension Amount - Total service times 2.65% of average final compensation.

Maximum pension is 75% of AFC (less worker's compensation payments). Minimum monthly pension is \$5 times years of service.

Average Final Compensation (AFC) - Monthly average of covered compensations for best 4 years of credited service. Some lump sums, overtime & premium pay are included.

Vested Termination (deferred retirement):

Eligibility - 8 years of service. Pension begins at age 60.

Pension Amount - Computed as normal retirement but based upon service and AFC at time of termination.

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as normal retirement with additional service credit granted from date of retirement to age 60. Minimum pension is \$4,800 annually. Maximum pension is the lesser of 75% of AFC, and 100% of AFC less outside earnings and social security disability benefits. Worker's compensation payments offset the maximum.

Non-Duty Disability Retirement:

Eligibility - 10 years of service.

Pension Amount - Computed as normal retirement but based on service and AFC at time of retirement.



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Defined Benefit Plan 1

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. Additional service credit is granted from date of death to date the deceased member would have attained 60 years of age. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension. Spouse's pension shall not be less than \$4,800. Worker's compensation payments and social security offset the maximum.

Non-Duty Death Before Retirement:

Eligibility - 10 years of service.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

Sheriff Command Officers and Deputies: 5.00% of annual compensation. Effective May 2014, the rate for POAM members increases by 5.10% (to 10.10%). Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).

Others:

Credited Service	Contribution Rate*
0 yrs. thru 8 yrs.	6.00% or 6.58% of compensation
9 yrs. thru 12 yrs.	4.00% or 4.58% of compensation
13 yrs. thru 16 yrs.	3.00% or 3.58% of compensation
17 yrs. or more	2.00% or 2.58% of compensation

* Contribution rate is determined by coverage group from Collective Bargaining Agreement (CBA).

Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Defined Benefit Plan 2

Availability - Defined Benefit Plan 2 was available to persons hired after August 15, 1983 and to DBP 1 and DBP 3 members who elected to be covered by DBP 2. **Eligibility to enter this Plan ceased as of October 1, 2001.** With the exception of certain bargaining groups, service accrued on/after October 1, 2015 counts toward eligibility only.

Normal Retirement (no reduction factor for age):

Eligibility - Age 55 with 25 years of service; or age 60 with 15 or 20 years of service; or age 65 with 8 years of service. POAM and Sheriff Command may retire at 30 years of service regardless of age.

Pension Amount - Average final compensation multiplied by the sum of a) 1% of credited service up to 20 years; and, b) 1.25% of credited service over 20 years. Maximum County financed portion is 75% of AFC.

Average Final Compensation (AFC) - Monthly average of covered compensation for the best 5 years of credited service. Covered compensation includes overtime, premium and holiday pay, but not lump sums.

Vested Termination (deferred retirement):

Eligibility - 8 years of service. Pension begins at age 65.

Pension Amount - Computed as normal retirement based on service and AFC at time of termination.

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as normal retirement with additional service credit granted from date of retirement to age 60. Maximum pension is the lesser of 75% of AFC, and 100% of AFC less outside earnings and social security disability benefits. Worker's compensation payments, social security benefit payments, and outside earnings offset the maximum. Minimum pension for select unions is 75% of AFC.

Non-Duty Disability Retirement:

Eligibility - 10 years of service.

Pension Amount - Computed as normal retirement but based on service and AFC at time of termination. Social security benefit payments and outside earnings offset the maximum.

Death Before Retirement:

Eligibility - 10 years of service; or age 65 and 8 years of service (any amount of service if Duty related).

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

None. Effective May 2014, the rate for POAM members increases to 5.10%. Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Defined Benefit Plan 3

Availability - Plan 3 was available to persons last hired after August 15, 1983; and, to other persons if offered by Collective Bargaining Agreement (CBA). **Eligibility to enter this Plan ceased as of March 31, 1986.** With the exception of certain bargaining groups, service accrued on/after October 1, 2015 counts toward eligibility only.

Normal Retirement (no reduction factor for age):

Eligibility - Age 55 with 25 years of service; or age 60 with 15 or 20 years of service; or age 65 with 5 years of service. Sheriff Command Officers may retire with 25 years of service regardless of age. Select negotiated CBAs may retire with 30 years of service regardless of age.

Pension Amount - Average final compensation multiplied by the sum of:

For select negotiated CBAs: a) 2.0% of credited service up to 20 years; and b) 2.5% of credited service between 20 and 25 years; and c) 3.0% of credited service over 25 years. Certain CBA's also had the option to upgrade (via purchase) to a 2.5% multiplier for the first 20 years of service.

Others: a) 1.5% of credited service up to 20 years; and b) 2.0% of credited service between 20 and 25 years; and, c) 2.5% of credited service over 25 years.

Maximum County financed portion is 75% of AFC (less worker's compensation payments).

Average Final Compensation (AFC) - Monthly average of covered compensation for the best 5 years of credited service.

For select negotiated CBAs: Covered compensation includes overtime, premium and holiday pay, 75% of accumulated sick leave and 100% of accumulated vacation time.

Others: Covered compensation includes overtime, premium and holiday pay, up to 320 hours of lump sum payments for unused sick leave and up to 120 hours of lump sum payments for unused vacation time.

Vested Termination (deferred retirement):

Eligibility - 8 years of service. Pension begins at age 65.

Pension Amount - Computed as normal retirement but based upon service and AFC at time of termination.

Duty Disability Retirement:

Select Unions (Sheriff Command Officers) receive 75% of AFC. Worker's compensation, social security benefit payments, and outside earnings may offset pension.

Others: covered outside of Retirement System.

Non-Duty Disability Retirement:

Covered outside of Retirement System.

Death Before Retirement:

Eligibility - 10 years of service; or, age 65 with 5 years of service (any amount of service if Duty related).

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

3% of covered compensation. Effective May 2014, the rate for POAM members increases by 5.10% (to 8.10%). Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Defined Contribution Plan 4

Defined Contribution Plan 4 is not included in this valuation with the exception of the following provision covered under the Defined Benefit Plans:

Duty Disability Retirement:

Eligibility - No age or service requirements.

The Duty Disability benefit is partially funded by the member's account balance. For select negotiated CBAs, benefit is equal to 75% of the employee's average final compensation as otherwise provided in Defined Benefit Plan 1. The employee is required to surrender all funds in Defined Contribution Plan 4 and pay any outstanding loans.

In the past members in Plan 4 were eligible to roll account balances into Defined Benefit Plan 5 to receive a defined benefit during periods as specified in CBAs. This benefit was based on the amount of service that could have been purchased by the member's account balance.

Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Hybrid Plan 5

Availability - Hybrid Plan 5 is obligatory for new employees hired after October 1, 2001, except Exempt County employees may choose between Plan 5 and Plan 4. Members may transfer into Plan 5 when allowed by CBA. With the exception of certain bargaining groups, service accrued on/after October 1, 2015 counts toward eligibility only.

Defined Benefit Provisions

Normal Retirement (no reduction for age):

Eligibility - Age 55 with 25 years of service; or age 60 with 20 years of service; or age 65 with 8 years of service; or 30 years of service regardless of age. Members that transfer into Plan 5 under select negotiated CBAs may retire with 25 years of service regardless of age (if attained certain requirements upon date of transfer).

Pension Amount -

For select negotiated CBAs - Average final compensation multiplied by 2.0% of credited service (1.5% for select Circuit Court coverage groups). Maximum pension is 75% of AFC (less worker's compensation payments).

Others - Average final compensation multiplied by the sum of a) 1.25% of credited service up to 20 years; and b) 1.5% of credited service over 20 years. Maximum pension is 75% of AFC (less worker's compensation payments).

Average Final Compensation (AFC) - Monthly average of covered compensation for the last 5 years of credited service, with the exception of Sheriff Command Officers and Executives where AFC is for the best 5 years of credited service. Covered compensation includes overtime and premium pay, and also includes payout of sick and annual leave banks for select negotiated CBAs.

Vested Termination (deferred retirement):

Eligibility - 8 years of service. Pension begins at age 65.

Pension Amount - Computed as normal retirement but based upon service and AFC at time of termination.

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as normal retirement with additional service credit granted from date of retirement to age 60. Worker's compensation payments, Social Security benefit payments and outside earnings offset the defined benefit portion of the pension. For select negotiated CBAs, the benefit is equal to 75% of AFC as otherwise provided in Defined Benefit Plan 1. The employee is required to surrender all Defined Contribution funds in Hybrid Plan 5 and pay any outstanding loans.

Non-Duty Disability Retirement:

Eligibility - 10 years of service.

Pension Amount - Computed as normal retirement but based on service and AFC at time of termination. Social security benefit payments and outside earnings offset the maximum.



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Hybrid Plan 5

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. Additional service credit is granted from date of death to date the deceased member would have attained 60 years of age. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension. Worker's compensation payments offset the maximum.

Non-Duty Death Before Retirement:

Eligibility - 10 years of service, or age 65 with 8 years of service.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

Individuals with 1.25%/1.5% multiplier contribute 0% of covered compensation, depending on CBA. Individuals with 2% multiplier contribute 1% or 5% of covered compensation, depending on CBA. Effective May 2014, the rate for POAM members increases by 5.10%. Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).

Defined Contribution Provisions

Contributions:

Either 4% of base compensation (2% member (contribution rate is determined by coverage group from collective bargaining agreement (CBA)) plus 2% employer) or voluntary amount for members (subject to IRS regulations) plus 0% employer for County. 6% of base compensation (3% member plus 3% employer) for Circuit Court. Contributions are invested by the members based on investment options established by the Retirement Commission. Contribution balances are credited with actual net market rates of return of the selected investments.

Vesting:

Member portion - 100% immediately.

Employer portion - 50% after 1 year of total service; 75% after 2 years; 100% after 3 years.

Distribution Options:

Terminating members may choose between:

- Lump sum distribution of vested account balance, or
- Rollover of vested account balance to a qualified plan, or
- Annuitized vested account balance if the member is also eligible for a defined benefit pension.



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Hybrid Plan 6

Availability - Hybrid Plan 6 is available effective October 1, 2008 for County members of Hybrid Plan 5 who are allowed to transfer and pay the required contribution for each year of service, when allowed by CBA. With the exception of certain bargaining groups, service accrued on/after October 1, 2015 counts toward eligibility only.

Defined Benefit Provisions

Normal Retirement (no reduction for age):

Eligibility - Age 55 with 25 years of service; or age 60 with 20 years of service; or age 65 with 8 years of service; or 30 years of service regardless of age. Members that transfer into Plan 5 under select negotiated CBAs may retire with 25 years of service regardless of age (if attained certain requirements upon date of transfer).

Pension Amount - Average final compensation multiplied by 2.5% for all years of credited service. Maximum pension is 75% of AFC (less worker's compensation payments).

Average Final Compensation (AFC) - Monthly average of covered compensation for the best 5 years of the last 7 years of credited service. Covered compensation includes overtime and premium pay, and also includes payout of sick and annual leave banks for select negotiated CBAs.

Vested Termination (deferred retirement):

Eligibility - 8 years of service. Pension begins at age 65.

Pension Amount - Computed as normal retirement but based upon service and AFC at time of termination.

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as normal retirement with additional service credit granted from date of retirement to age 60. Worker's compensation payments, Social Security benefit payments and outside earnings offset the defined benefit portion of the pension. For select negotiated CBAs, the benefit is equal to 75% of AFC as otherwise provided in Defined Benefit Plan 1. The employee is required to surrender all Defined Contribution funds in Hybrid Plan 6 and pay any outstanding loans.

Non-Duty Disability Retirement:

Eligibility - 10 years of service.

Pension Amount - Computed as normal retirement but based on service and AFC at time of termination. Social security benefit payments and outside earnings offset the maximum.



Brief Summary of Benefit Provisions as of September 30, 2022

FROZEN BENEFITS (accrued through September 30, 2015)

Hybrid Plan 6

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. Additional service credit is granted from date of death to date the deceased member would have attained 60 years of age. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension. Worker's compensation payments offset the maximum.

Non-Duty Death Before Retirement:

Eligibility - 10 years of service, or age 65 with 8 years of service.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

4.0% of covered compensation. Effective May 2014, the rate for POAM members increases by 5.10% (to 9.10%). Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).

Defined Contribution Provisions

Contributions:

Voluntary for member (subject to IRS regulations), 0% employer. Contributions are invested by the members based on investment options established by the Retirement Commission. Contribution balances are credited with actual net market rates of return of the selected investments.

Vesting:

Member portion - 100% immediately.

Distribution Options:

Terminating members may choose between:

- Lump sum distribution of vested account balance, or
- Rollover of vested account balance to a qualified plan, or
- Annuitized vested account balance if the member is also eligible for a defined benefit pension.



Brief Summary of Benefit Provisions as of September 30, 2022

Benefit Accruals on/after October 1, 2015

Availability - With the exception of certain bargaining groups, all current Defined Benefit members (regardless of prior Plan) and future hires participate.

Plan Coordination - Members who were active prior to October 1, 2015* may begin receipt of frozen accrued benefits from their prior plan when they would have been eligible to do so based on prior plan eligibility conditions (using combined service with all WCERS plans to meet those conditions). Any members who retire and begin receiving their frozen plan benefits must terminate employment from the October 1, 2015* Plan. They may begin receiving any benefits accrued in the October 1, 2015* Plan once they reach eligibility to receive such benefits based on the October 1, 2015* Plan conditions.

* Effective date is later than October 1, 2015 for certain bargaining groups.

Normal Retirement (no reduction for age):

Eligibility - Age 62 with 10 years of service. A graduated eligibility scale (between ages 60-62) applies to members age 52 or older as of October 1, 2015. Sheriffs (Local 3317 and POAM) may also retire at age 55 with 30 years of service.

<u>Graduated Eligibility Scale (Ages in Years)</u>			
Age as of October 1, 2015	Normal Retirement Age	Age as of October 1, 2015	Normal Retirement Age
61	60	56	61
60	60	55	61.3
59	60.3	54	61.6
58	60.6	53	61.9
57	60.9	52	62

Pension Amount - Future hires and members classified in the prior Plans 1, 3, 5 and 6 - Average final compensation multiplied by 1.25% for all years of credited service. Maximum pension is 75% of AFC.

Members classified in the prior Plan 2 - Average final compensation multiplied by the sum of a) 1% of credited service up to 20 years; and, b) 1.25% of credited service over 20 years. Maximum pension is 75% of AFC.

Average Final Compensation (AFC) - Monthly average of base wages for the last 10 years of credited service.

Early Retirement:

Eligibility - Age 55 with 30 years of service for non-Sheriff members.

Pension Amount - Computed as normal retirement but reduced by 0.8% for each month that the early retirement precedes age 62.

Vested Termination (deferred retirement):

Eligibility - 10 years of service. Pension begins at age 65.

Pension Amount - Computed as normal retirement but based upon service and AFC at time of termination.



Brief Summary of Benefit Provisions as of September 30, 2022

Benefit Accruals on/after October 1, 2015

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as normal retirement with additional service credit granted from date of retirement to age 60. Worker's compensation payments, Social Security benefit payments and outside earnings offset the defined benefit portion of the pension. Maximum benefit is 60% of AFC.

For Plan 4 members in select negotiated CBAs, benefit is equal to 60% of the employee's average final compensation as otherwise provided in Defined Benefit Plan 1. The employee is required to surrender all funds in Defined Contribution Plan 4 and pay any outstanding loans.

Non-Duty Disability Retirement:

Eligibility - 10 years of service.

Pension Amount - Computed as normal retirement but based on service and AFC at time of termination. Social security benefit payments and outside earnings offset the maximum.

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. Additional service credit is granted from date of death to date the deceased member would have attained 60 years of age. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension. Worker's compensation payments offset the maximum.

Non-Duty Death Before Retirement:

Eligibility - 10 years of service.

Pension Amount - Pension to the spouse is computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no eligible spouse, unmarried children under age 18 receive equal shares of 50% of normal retirement pension.

Member Contributions:

With the exception of members classified in the prior Plan 2 and unless indicated otherwise under select negotiated CBAs, 6% of gross wages up to \$52,155, plus 7% of gross wages over \$52,155. For Sheriffs (Local 3317 and POAM), prior to October 1, 2021 the amount was 7% of gross wages up to \$52,155, plus 8% of gross wages over \$52,155. Any groups contributing more than these rates under their prior Plan will instead contribute at the new rates. Plan 2 will continue to contribute 0%. Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).



Development of Funding Value of Retirement System Assets (All WCERS)

Year Ended September 30:	2020	2021	2022	2023	2024	2025
<i>Assumed Investment Return</i>	7.25%	7.25%	6.75%	6.75%	6.75%	6.75%
A. Funding Value Beginning of Year	\$1,014,817,567	\$1,015,039,183	\$1,046,863,559			
B. Market Value End of Year	963,265,679	1,148,397,922	946,663,468			
C. Market Value Beginning of Year	996,091,564	963,265,679	1,148,397,922			
D. Non-Investment Net Cash Flow	(60,165,863)	(62,782,047)	(58,987,815)			
E. Investment Income						
E1. Market Total: B - C - D	27,339,978	247,914,290	(142,746,639)			
E2. Amount for Immediate Recognition	71,393,261	71,314,492	68,672,451			
E3. Amount for Phased-In Recognition: E1-E2	(44,053,283)	176,599,798	(211,419,090)			
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.25 x E3	(11,013,321)	44,149,950	(52,854,773)			
F2. First Prior Year	(8,888,845)	(11,013,321)	44,149,950	\$ (52,854,773)		
F3. Second Prior Year	(955,852)	(8,888,845)	(11,013,321)	44,149,950	\$ (52,854,773)	
F4. Third Prior Year	9,852,236	(955,853)	(8,888,844)	(11,013,320)	44,149,948	\$(52,854,771)
F5. Total Recognized Investment Gain	(11,005,782)	23,291,931	(28,606,988)	(19,718,143)	(8,704,825)	(52,854,771)
G. Funding Value End of Year:						
G1. Preliminary: A + D + E2 + F5	1,015,039,183	1,046,863,559	1,027,941,207			
G2. Upper Corridor Limit: 120% x B	1,155,918,815	1,378,077,506	1,135,996,162			
G3. Lower Corridor Limit: 80% x B	770,612,543	918,718,338	757,330,774			
G4. Funding Value End of Year	\$1,015,039,183	\$1,046,863,559	\$1,027,941,207			
H. Difference between Market & Funding Value	(51,773,504)	101,534,363	(81,277,739)	(61,559,596)	(52,854,771)	0
I. Recognized Rate of Return	6.1%	9.6%	3.9%			
J. Market Value Rate of Return	2.8%	26.6%	(12.8)%			
K. Ratio of Funding Value to Market Value	105.4%	91.2%	108.6%			

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is *unbiased* with respect to Market Value. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for 3 consecutive years, it will become equal to Market Value.



Income Statement and Allocation of Funding Value by Employer

	County	Airport Authority	Total
(1) Market Value Beginning of Year	\$ 983,284,212	\$ 165,113,710	\$ 1,148,397,922
(2) Audit Adjustment	-	-	-
(3) Employee Contributions	12,055,366	434,529	12,489,895
(4) Employer Contributions*	59,966,804	6,494,867	66,461,671
(5) Benefit Payments & Refunds*	123,367,356	11,531,238	134,898,594
(6) Pre-2002 Combined Retirees Transfer	-	-	-
(7) Administrative Expenses	2,598,920	441,867	3,040,787
(8) Average Balance: (1) + 0.5 x ((2)+(3)+(4)-(5)+(6)-(7))	956,312,159	162,591,856	1,118,904,015
(9) Net Investment Income Allocation	(122,003,626)	(20,743,013)	(142,746,639)
(10) Market Value End of Year: (1)+(2)+(3)+(4)-(5)+(6)-(7)+(9)	\$ 807,336,480	\$ 139,326,988	\$ 946,663,468
(11) Market Value Rate of Return: (9)/(8)	(12.8)%	(12.8)%	(12.8)%
(12) Percentage of WCERS Market Value	85.28%	14.72%	100.00%
(13) Funding Value Allocation: Total x (12)	\$ 876,652,014	\$ 151,289,193	\$ 1,027,941,207

* Includes pre-Medicare Stipend amount of \$1,647,618 (for County).



Asset Allocation

	2022	
	Value	% of Total
Cash & Short-Term		
Cash (incl. checking/savings accounts)	\$ 426,190	0.05%
Accrued interest and dividends	797,010	0.10%
Accounts receivable	19,485	0.00%
Prepaid expenses	22,043	0.00%
Short-term investment funds	31,610,786	3.92%
Due from broker	4,756,761	0.59%
	37,632,275	4.66%
Fixed Income		
Corporate bonds	16,589,640	2.05%
U.S Government / Agency bonds	38,643,603	4.79%
Asset backed securities	9,593,019	1.19%
Mortgage backed securities	15,925,901	1.97%
Municipal bonds	3,519,140	0.44%
International fixed income	2,687,902	0.33%
Commingled fixed income funds	5,804,194	0.72%
	92,763,399	11.49%
Equities		
Common stocks	336,650,268	41.70%
Commingled funds	95,540,739	11.83%
Stock mutual funds	19,495,498	2.41%
International equities	4,642,122	0.57%
	456,328,627	56.52%
Real Estate		
Hedge funds	41,524,921	5.14%
Real estate investment trusts	143,101,804	17.73%
Private equities	37,810,179	4.68%
	222,436,904	27.55%
Total Assets	\$ 809,161,205	100.23%
Liabilities		
Accounts payable	1,824,725	0.23%
Net Assets Held in Trust for Pension Benefits	\$ 807,336,480	100.00%

Numbers may not add due to rounding.



Retired Members and Beneficiaries Added and Removed

Year Ended Sept. 30	Added		Removed		Net Increase		End of Year	
	No.	Annual Pensions	No.	Annual* Pensions	No.	Annual Pensions	No.	Annual Pensions [^]
2014	151	\$5,743,411	206	\$3,417,098	(55)	\$ 2,326,313	5,253	\$125,993,903
2015	137	5,816,687	272	4,061,561	(135)	1,755,126	5,118	127,749,029
2016	124	3,941,083	175	3,818,815	(51)	122,268	5,067	127,871,297
2017	74	2,097,370	218	4,000,585	(144)	(1,903,215)	4,923	125,968,082
2018	69	2,161,193	215	4,693,527	(146)	(2,532,334)	4,777	123,435,748
2019	82	2,687,461	193	3,559,238	(111)	(871,777)	4,666	122,563,971
2020	84	2,861,760	223	3,921,320	(139)	(1,059,560)	4,527	121,504,411
2021	78	2,187,159	236	4,015,221	(158)	(1,828,062)	4,369	119,676,349
2022	100	3,003,866	184	3,760,177	(84)	(756,311)	4,285	118,920,038

* Includes benefit adjustments, if any.

[^] 10/1/2015 Plan benefits not yet in pay status for certain of these members are tabulated on page B-19.

Retired Members and Beneficiaries Comparative Schedule

Valuation Date Sept. 30	Pensions Being Paid						Active Member Ratio*
	No.	Amount^ (\$ Thousands)	% of Member Payroll#	Annual % Increase		Average Pension	
				No.	Amount		
2014	5,253	\$125,994	107.4 %	(1.0)%	1.9 %	\$23,985	0.7
2015	5,118	127,749	134.7 %	(2.6)%	1.4 %	24,961	0.6
2016	5,067	127,871	130.5 %	(1.0)%	0.1 %	25,236	0.6
2017	4,923	125,968	122.8 %	(2.8)%	(1.5)%	25,588	0.7
2018	4,777	123,436	119.4 %	(3.0)%	(2.0)%	25,840	0.7
2019	4,666	122,564	115.1 %	(2.3)%	(0.7)%	26,267	0.7
2020	4,527	121,504	126.0 %	(3.0)%	(0.9)%	26,840	0.6
2021	4,369	119,676	128.0 %	(3.5)%	(1.5)%	27,392	0.6
2022	4,285	118,920	119.6 %	(1.9)%	(0.6)%	27,753	0.6

* Number of active members (including defined contribution plan members) divided by number of retired members and beneficiaries.

Excludes Defined Contribution Plan payroll. Rate based on pensionable wages in 2014 and base wages thereafter.

^ 10/1/2015 Plan benefits not yet in pay status for certain of these members are tabulated on page B-19.

Retired Members and Beneficiaries September 30, 2022 by Attained Age Groups

Attained Age Grouping	Number	Annual Pensions [^]
Under 35	4	\$ 111,340
35-39	3	54,867
40-44	7	102,663
45-49	23	640,789
50-54	115	4,829,307
55-59	315	13,270,888
60-64	435	18,591,061
65-69	522	18,028,547
70-74	803	22,480,066
75-79	755	19,297,910
80-84	529	9,949,586
85-89	386	6,666,513
90-94	261	3,673,239
95-99	107	1,064,786
100 & Over	20	158,476
Totals	4,285	\$118,920,038

Average age now: 74.4 yrs.
Average age at retirement: 54.8 yrs.
Average service at retirement 24.0 yrs.

[^] 10/1/2015 Plan benefits not yet in pay status for certain of these members are tabulated on page B-19.

Retired Members and Beneficiaries September 30, 2022 by Type of Retirement

Type of Pension Being Paid	Benefits Paid [^]	Number
Age & Service Pensions		
S.S. Equated/Accelerated		
Straight Life	\$ 9,050,941	550
Option 1 - Period Certain & Life	1,799,558	69
Option 2 - Joint & 100% to Survivor	4,272,259	170
Option 3 - Joint & 50% to Survivor	4,387,318	177
Total	19,510,076	966
Not S.S. Equated/Accelerated		
Straight Life	\$ 40,984,463	1,301
Option 1 - Period Certain & Life	3,472,470	115
Option 2 - Joint & 100% to Survivor	21,195,062	558
Option 3 - Joint & 50% to Survivor	17,690,330	413
Total	83,342,325	2,387
Survivor Beneficiary of Deceased Retired Member	9,437,812	574
Total Age and Service Pensions	\$ 112,290,213	3,927
Casualty Pensions		
Duty Disability	\$ 3,619,309	143
Non-Duty Disability	1,426,947	89
Survivor Beneficiary of		
Deceased Retired Member	826,988	67
Duty Death	161,619	6
Non-Duty Death	594,962	53
Total Casualty Pensions	6,629,825	358
Total Pensions Being Paid	\$ 118,920,038	4,285

[^] 10/1/2015 Plan benefits not yet in pay status for certain of these members are tabulated on page B-19.

Vested Former Members September 30, 2022 Tabulated by Attained Age Groups

Attained Ages	No.	Estimated Annual Allowances
35-39	3	\$ 41,355
40-44	32	435,947
45-49	32	560,489
50-54	32	483,277
55-59	47	686,185
60-64	38	415,374
65-69	16	106,852
70 & Up	14	123,693
Totals	214	\$2,853,172

A vested former member is a person who has left the employ of the County after acquiring credited service sufficient for a vested pension and has not withdrawn their accumulated member contributions from the Reserve for Accumulated Member Contributions. A vested former member may retire upon satisfying the conditions for normal retirement.

Members Receiving Benefits from the Frozen Plan and Terminated Vested from the October 1, 2015 Benefit Plan

Attained Ages	No.	Estimated Annual Allowances
45-49	3	\$ 16,351
50-54	40	191,593
55-59	58	223,553
60-64	32	82,640
65-69	1	1,368
Totals	134	\$515,505

The members in this schedule are in payment status for the frozen plan benefit but are not yet eligible to receive the new plan benefit.

Active Members September 30, 2022

Plan	No.	Valuation Payroll (Base)	Average		
			Pay	Age	Service
Pre-September 30, 2015 Plans				(in years)	
Defined Benefit Plan 1					
General	7	\$ 357,604	\$51,086	71.4	43.1
Sheriff	0	n/a	n/a	n/a	n/a
Total	7	357,604	51,086	71.4	43.1
Defined Benefit Plan 5 & 6					
General	9	926,511	102,946	60.0	26.7
Sheriff	0	n/a	n/a	n/a	n/a
Total	9	926,511	102,946	60.0	26.7
October 1, 2015 Plan					
General	1,172	68,586,096	58,521	49.0	11.3
Sheriff	489	29,596,375	60,524	43.3	14.7
Total	1,661	98,182,471	59,110	47.3	12.3
Defined Benefit Sub-total	1,677	99,466,586	59,312	47.5	12.5
Defined Contribution Plan 4*	911	67,978,023	74,619	53.6	20.5
Total	2,588	\$167,444,609	\$64,700	49.7	15.3

* Plan 4 members are not included in the valuation except for Disability benefits for certain CBAs.

Active and Inactive Members in Valuation Historical Schedule

Valuation Date September 30	Inactive		Active Members (Including Plan 4)^				
	No.	Estimated Pensions	No.	Valuation Payroll [#]	Average		
					Pay	Age	Service
Retirement System Totals							
1970	283	\$ 461,045	8,170	\$ 81,396,280	\$ 9,963	41.7 yrs.	10.2 yrs.
1975	254	579,747	7,906	115,811,211	14,649	42.0	10.5
1980	323	1,107,547	6,832	178,221,092	26,086	42.8	12.1
1985	245	1,229,467	4,758	129,534,998	27,225	41.1	11.0
1990	251	1,286,311	4,999	157,406,461	31,488	41.0	10.9
1995	198	1,114,099	5,407	192,903,829	35,677	41.1	10.3
2000	152	885,974	5,995	275,626,572	45,976	42.1	10.3
2005	83	622,669	5,867	298,580,651	50,892	44.1	11.8
2006	139	962,718	5,775	319,610,910	55,344	44.8	12.4
2007	139	965,814	5,667	325,383,059	57,417	45.3	12.8
2008	130	1,045,421	5,508	330,069,425	59,926	45.6	13.3
2009	120	833,979	4,938	297,467,539	60,241	46.2	14.1
2010	114	778,285	4,618	277,390,018	60,067	46.4	14.0
2011	118	827,749	4,455	272,096,139	61,077	47.0	14.8
2012	128	1,168,554	4,340	268,976,237	61,976	47.3	15.3
2013	138	1,262,394	4,293	269,844,562	62,857	47.7	15.3
2014	139	1,434,371	4,023	254,591,941	63,284	47.8	15.5
2015	185	2,066,876	3,227	180,995,012	56,088	47.6	15.4
2016	189	2,262,310	3,174	183,241,874	57,732	47.8	15.2
2017	200	2,507,062	3,204	180,549,254	56,351	47.6	14.7
2018	197	2,558,891	3,149	182,883,123	58,077	48.0	14.8
2019	186	2,277,609	3,123	181,209,363	58,024	48.4	14.7
2020	194	2,383,746	2,807	169,424,025	60,358	49.3	15.6
2021	192	2,383,005	2,654	161,222,321	60,747	49.9	15.9
2022	214	2,853,172	2,588	167,444,609	64,700	49.7	15.3

Note: Includes Airport employees before 2015.

[#] Based on base wages starting in 2015 and pensionable wages in prior years.

[^] Plan 4 members are not included in the valuation except for Disability benefits for certain CBAs.



Defined Benefit Active Members September 30, 2022 by Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date*							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
20-24	33							33	\$ 1,333,137
25-29	97	16						113	5,335,974
30-34	102	44	5					151	7,952,978
35-39	59	36	24	7	4			130	7,980,733
40-44	52	36	36	39	33	5		201	12,526,191
45-49	64	42	19	42	47	37	7	258	16,381,466
50-54	56	49	13	18	42	64	37	279	17,098,902
55-59	55	57	10	21	33	31	39	246	15,139,447
60	8	12	4	1	4	5	8	42	2,593,615
61	10	9	3	4	6	4	3	39	2,034,636
62	3	5	2	6	4	4	5	29	1,879,569
63	12	3	2	3		2	2	24	1,462,536
64	4	5	4	2	1		6	22	1,506,768
65	2	9	3	2	2	1	3	22	1,120,346
66	6	4	5	3	1	3	2	24	1,494,954
67	4	1	2	1	2	1	3	14	769,102
68	3	2	2			1	2	10	523,142
69	1		1	1	1		3	7	551,651
70	2	2			1	3		8	436,522
71	3	1			1		2	7	353,603
72		2					1	3	153,159
73	1	1	2			1		5	315,530
74	1		1	1			3	6	297,215
77						1	1	2	119,172
79 & Over		1			1			2	106,238
Totals	578	337	138	151	183	163	127	1,677	\$ 99,466,586

Number Currently Eligible to Retire: 247

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 47.5 years
Service: 12.5 years
Annual Pay: \$59,312

* Includes purchased service, if any.



SECTION C

METHODS AND ASSUMPTIONS

Basic Financial Principles and Operation of the Retirement System

Benefit Promises Made Which Must Be Paid For. A retirement program is an orderly means of handing out, keeping track of, and financing pension promises to a group of employees. As each member of the retirement program acquires a unit of service credit the member is, in effect, handed an “IOU” which reads: “The Retirement System promises to pay you one unit of retirement benefits, payments in cash commencing when you retire.”

The principal related financial question is: When shall the money required to cover the “IOU” be contributed? This year, when the benefit of the member’s service is received? Or, some future year when the “IOU” becomes a cash demand?

The Constitution of the State of Michigan is directed to the question:

“Financial benefits arising on account of service rendered in each fiscal year shall be funded during that year and such funding shall not be used for financing unfunded accrued liabilities.”

This Retirement System meets this requirement by having as its financial objective the establishment and receipt of contributions, expressed as percents of active member payroll, which will remain approximately level from year to year, and will not have to be increased for future generations of taxpayers.

Translated into actuarial terminology, a level percent-of-payroll contribution objective means that the contribution rate must be at least:

Normal Cost (the present value of future benefits assigned to members’ service being rendered in the current year)

. . . plus . . .

Interest on the Unfunded Actuarial Accrued Liability (the difference between the actuarial accrued liability and current system assets).

The accumulation of invested assets is a byproduct of level percent-of-payroll contributions, not the objective. Investment income becomes the third major contributor to the retirement program, and the amount is directly reacted to the amount of contributions and investment performance.

If contributions to the retirement program are less than the preceding amount, the difference, plus investment earnings not realized thereon, will have to be contributed at some later time, or, benefits will have to be reduced, to satisfy the fundamental fiscal equation under which all retirement programs must operate:

$$B = C + I - E$$

The aggregate amount of **B**enefit payments to any group of members and their beneficiaries cannot exceed the sum of:

The aggregate amount of **C**ontributions received on behalf of the group

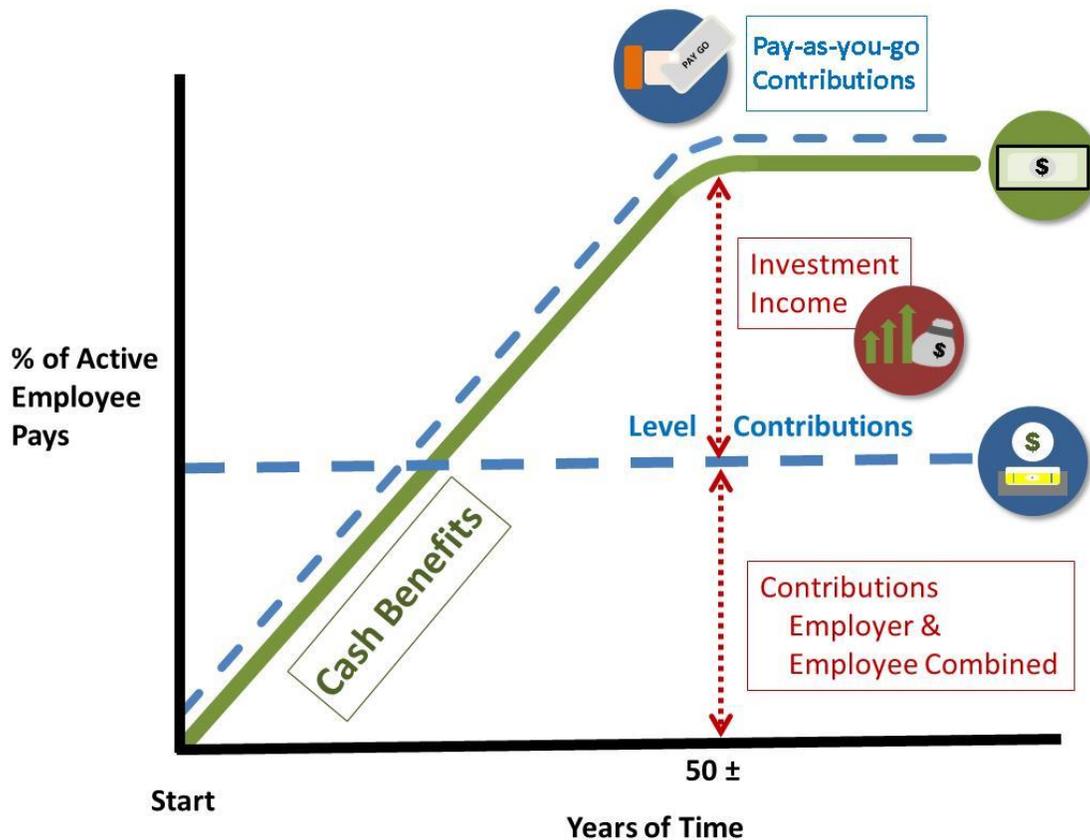
. . . plus . . .

Investment earnings on contributions received and not required for immediate cash payments of benefits

. . . minus . . .

The **E**xpenses of operating the program.

Computed Contribution Rate Needed to Finance Benefits. From a given schedule of benefits and from the data furnished, the actuary calculates the contribution rate **by means of an actuarial valuation** - the technique of assigning monetary values to the risks assumed in operating a retirement program.



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

- **Economic Risk Areas**
 - Rates of investment return
 - Rates of pay increase
 - Changes in active member group size
- **Non-Economic Risk Areas**
 - Ages at actual retirement
 - Rates of mortality
 - Rates of withdrawal of active members (turnover)
 - Rates of disability

Actuarial Valuation Process

The financing diagram on page C-3 shows the relationship between the two fundamentally different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is an **increasing contribution method**; and the **level contribution method** which equalizes contributions between the generations.

The actuarial valuation is the mathematical process by which the level contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

- A. **Census Data**, furnished by plan administrator.
 - Retired lives now receiving benefits
 - Former employees with vested benefits not yet payable
 - Active employees

- B. + **Asset data** (cash & investments), furnished by plan administrator

- C. + **Assumptions concerning future experience in various risk areas**, which assumptions are established by the Retirement System after consulting with the actuary

- D. + **The funding method** (the long-term, planned pattern for employer contributions)

- E. + **Mathematically combining the assumptions, the funding method, and the data**

- F. = Determination of:
 - Plan financial position; and/or
 - New Employer Contribution Rate

Actuarial Cost Methods

Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using the *individual entry-age actuarial cost method* having the following characteristics:

- The annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement; and
- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Asset Valuation Method. Last year's valuation assets are increased by contributions and reduced by refunds, benefit payments and expenses. An amount equal to the assumed investment return for the year is then added. Differences between actual return on a market value basis and an assumed return are phased-in over a four-year period. An 80%-120% market value corridor was incorporated in the September 30, 2014 valuation in accordance with WCERS Actuarial Funding Policy.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting accrued assets from the actuarial accrued liability determines the unfunded actuarial accrued liability.

The base rate of increase in salaries used to calculate the actuarial liability was assumed to be 3.0%.

Actuarial Assumptions Used for the Valuation

Contribution requirements and actuarial present values are calculated by applying estimates of future experience (actuarial assumptions) to the benefit provisions and participant data of the System, using the actuarial cost methods described on page C-5.

The principal areas of activity which require experience estimates are:

- Long-term rates of investment return to be generated by the assets of the System
- Patterns of pay increases to members
- Rates of mortality among members, retired members and beneficiaries
- Rates of withdrawal of active members
- Rates of disability among active members
- The age patterns of actual retirements

In an actuarial valuation, the monetary effect of each activity is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with the experience estimates. Each valuation provides a complete recalculation of estimated future experience and takes into account all past differences between estimated and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time one or more of the estimates are modified to reflect experience trends but not random or temporary year-to-year fluctuations.

Actuarial Assumptions Used for the Valuation

The rationale for the assumptions is an experience study covering the period October 1, 2015 through September 30, 2020 and dated August 24, 2021.

Investment Return (net of investment expenses).

6.75% per year, compounded annually. This rate consists of a real rate of return over wage inflation of **3.75%** per year plus a long-term rate of wage inflation of **3.00%** per year.

No specific price inflation assumption is necessary for this valuation. However, the above assumptions would be consistent with a price inflation assumption in the 2.50% area.

This assumption is used to equate the value of payments due at different points in time and was first used in the September 30, 2021 valuation. Approximate rates of investment return, for the purpose of comparisons with assumed rates, are shown below:

	Year Ended September 30					5-Year Average
	2022	2021	2020	2019	2018	
Recognized Rate of Return (Funding Value)	3.9%	9.6%	6.1%	7.6%	7.0%	6.8%

The nominal rate of return was computed using the approximate formula $i = I$ divided by $1/2 (A + B - I)$, where I is recognized investment income net of expenses, A is the beginning of year asset value, and B is the end of year asset value.

It is important to keep in mind that the investment return assumption used in the valuation is forward looking. Historical schedules are interesting statistics, but cannot be used to predict future results.

Rates of salary increase (merit and longevity plus wage inflation) ranges from 3.00% to 11.35%. Select merit and longevity rates follow:

Merit and Longevity Pay Increases			
Non-Public Safety		Public Safety	
Age	Increase	Service	Increase
20	4.18%	5	5.71%
25	3.88%	10	1.45%
30	2.90%	15	1.07%
35	2.00%	20	0.95%
40	1.56%	25	0.68%
45	1.05%	30	0.67%
50	0.88%	35	0.44%
55	0.45%	40 & Over	0.10%
60	0.23%		
65 & Over	0.00%		
Ref:	569	Ref:	927

These rates are used to project current salaries to those upon which pension amounts are likely to be based. The current rates were first used for the September 30, 2021 actuarial valuation.

Rates of separation from active membership were as follows:

Rates for all divisions were first used for the September 30, 2021 valuation.

% of Active Members Separating within the Next Year							
Non-Public Safety				Public Safety			
Age		Service		Age		Service	
20	9.50%	0 - 1	25%	20	4.95%	0 - 1	12%
21	9.50%	1 - 2	19%	21	4.95%	1 - 2	17%
22	9.50%	2 - 3	16%	22	4.95%	2 - 3	12%
23	9.45%	3 - 4	15%	23	4.91%	3 - 4	12%
24	9.40%	4 - 5	13%	24	4.86%	4 - 5	12%
25	9.35%			25	4.82%		
30	10.75%			30	3.54%		
35	6.70%			35	2.68%		
40	5.65%			40	2.57%		
45	5.65%			45	2.33%		
50	5.17%			50	1.87%		
55	4.04%			55	1.32%		
60 & Over	0.00%			60 & Over	0.00%		
Ref:	1567		1052	Ref:	1230 x 110%		1452

The probabilities of retirement for members satisfying the age and service conditions for retirement are as follows:

Percent of Active Participants Retiring within Next Year				
Normal Retirement			Early Retirement	
Age	Public Safety	Non-Public Safety	Service	Non-Public Safety
55	30%	25%	55	5%
56	30%	20%	56	6%
57	30%	20%	57	7%
58	30%	20%	58	8%
59	30%	25%	59	9%
60	30%	30%	60	10%
61	30%	30%	61	10%
62	41%	25%	62	
63	16%	25%	63	
64	16%	30%	64	
65	26%	20%	65	
66	16%	25%	66	
67	16%	35%	67	
68	29%	15%	68	
69	29%	80%	69	
70	100%	100%	70	
Ref:	3231	3229		2658
anchor	55	55		55

Service	Normal Retirement	
	Non-Public Safety	Public Safety
30	25%	50%
31	20%	30%
32	10%	40%
33	25%	40%
34	20%	20%
35	20%	30%
36	30%	25%
37	15%	25%
38	15%	25%
39	10%	25%
40	50%	100%
Ref:	3230	3232
anchor	30	30

The rates were first used for the September 30, 2021 valuation.

Probabilities of retirement were increased to 35% for non-public safety and 40% for public safety once the member accrues the maximum benefit of 75% of Average Final Compensation.

For members that are at least age 42 as of September 30, 2015, have at least 10 years of service as of September 30, 2015 and entered the plan before age 42, the retirement pattern is applied when the member is eligible for the frozen benefit. For all other members, the retirement pattern is applied when the member is eligible for the new, non-frozen, benefit.



Rates of disability are represented by the following table:

Sample Ages	Percent Becoming Disabled within Next Year	
	Non-Public Safety	Public Safety
20	0.08%	0.10%
25	0.08%	0.10%
30	0.05%	0.07%
35	0.09%	0.12%
40	0.21%	0.28%
45	0.38%	0.51%
50	0.61%	0.81%
55	0.85%	1.13%
60	1.08%	1.44%
Ref	8 x 75%	8 x 100%

For members not in public safety, two-thirds of disabilities are assumed to be non-duty related and the remaining one-third are assumed to be duty related. For public safety members, 60% are assumed to be non-duty related and the remaining 40% are assumed to be duty related.

Number of active members: The number of County active members was assumed to remain constant.

The mortality table used to measure post-retirement mortality was 105% of the PubG-2010 Retiree Mortality tables for males and females. Mortality rates for a particular calendar year are determined by applying the MP-2020 Mortality Improvement scale to the above described tables. The corresponding Disabled and Employee tables were used for disability and pre-retirement mortality, respectively. This assumption was first used for the September 30, 2021 actuarial valuation.

Mortality rates are used to measure the probabilities of members dying before retirement and the probabilities of each pension payment being made after retirement. Sample post-retirement values are shown below:

Sample Attained Ages in 2022	Single Life Retirement Values					
	Present Value of \$1 Monthly for Life		Percent Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women	Men	Women
45	\$164.28	\$168.00	0.1226%	0.0672%	40.03	43.00
50	157.71	162.38	0.2944%	0.2182%	34.93	37.83
55	149.81	155.67	0.4364%	0.3062%	30.06	32.88
60	139.96	147.00	0.6687%	0.4252%	25.36	28.04
65	127.93	135.90	0.9709%	0.6185%	20.90	23.34
70	113.31	121.98	1.4949%	0.9919%	16.68	18.84
75	96.26	105.25	2.5219%	1.7675%	12.80	14.64
80	77.68	86.49	4.5409%	3.2716%	9.39	10.88
85	59.58	67.28	8.3479%	6.2029%	6.62	7.72
90	44.25	50.12	14.5073%	11.5954%	4.58	5.33
95	32.75	37.05	22.6406%	18.9344%	3.21	3.70
100	24.40	27.15	32.5890%	28.5265%	2.29	2.59
Ref:	2705 x 1.05	2706 x 1.05				
Projection	964	965				

Miscellaneous and Technical Assumptions

September 30, 2022

Marriage Assumption:	100% of males and 100% of females are assumed to be married. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements are assumed to occur mid-year. This means that pay paid during the fiscal year before the valuation date is used.
Eligibility Testing:	Eligibility for benefits is determined using the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and withdrawal (separation) do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is straight life.
Adjustments:	<p>Age and service benefits were increased by the following percentages to account for lump sum redemptions of unused sick leave, vacation time, and other items at retirement: County Plan One: 6%. County Plans Five, and Six: 8%.</p> <p>Straight Life amounts are provided for some retired members who elect the pop-up provision. Retiree liabilities were increased by 1% to account for the remaining missing data for the plan's pop-up provision.</p>
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, subject to recommended dollar amounts shown on page A-2.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Option Factors:	Option factors are based upon 6.75% interest and 105% of the PubG-2010 Retiree Mortality table projected to 2034 using MP-2020 with an 80% Unisex Blend.
Administrative Expenses:	A contribution of 2.20% of payroll was included for administrative expenses. This assumption was first used for the September 30, 2021 valuation.

Miscellaneous and Technical Assumptions

September 30, 2022

AFC Floor:	Active member 10-year average final compensation was assumed to be at least equal to 95% of base wages.
Interest on Member Contributions:	Contribution balances are credited with interest annually in an amount determined by the retirement commission. For the September 30, 2022 valuation, the assumed crediting rate is 0.75% (the amount credited to member balances starting October 1, 2019).
Maximum Benefit:	<p>It was assumed that frozen benefits as provided by the retirement system were limited by any applicable maximum.</p> <p>The maximum for benefit accruals on/after October 1, 2015 was calculated by limiting the AFC multiplier to: 75% less the multiplier used in calculating the frozen benefit.</p> <p>Based on the plan provisions, if the calculation of the maximum resulted in no future benefit accruals, it was assumed that the member would have to continue contributing as long as they were working and would only be eligible for a refund of contributions in the new plan if they elected to refund old plan contributions and forfeit the frozen benefit.</p>

Limitations and Adjustments to Data

The following adjustments were made to the data used in this valuation:

- There is one individual in the retiree data that is limited by the IRC 415(b) limit. The total benefit amounts payable is being valued in lieu of a much more complicated procedure that would involve estimating future increases in the amount payable based on estimated future increases in the 415(b) limit.
- We do not have complete benefit data for many members that retired prior to September 30, 2022 and elected an equated option with a pop-up. Pop-up benefits for these members were valued by dividing the pre- and post- equated/accelerated age benefits by the non-equated/accelerated pop-up factor.

While we were able to complete this (and prior) valuations without the following data elements, other data that we would appreciate receiving if it can be obtained for future valuations are as follows:

- a. Historical base wages for each active person for our estimate of the 10-year Final Average Compensation;
- b. Total eligibility service and benefit service in the new plan; and
- c. Employee contribution rates or dollar amounts using base wages.



SECTION D

RISK MEASURES AND FUNDING POLICY

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 Risk** – 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; and
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.

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:

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>
Ratio of the market value of assets to total payroll	8.12	10.52	8.59	8.10
Ratio of actuarial accrued liability to payroll	13.53	14.66	13.94	12.84
Ratio of actives to retirees and beneficiaries	0.39	0.39	0.40	0.44
Ratio of net cash flow to market value of assets	-5.5%	-7.0%	-6.7%	-5.4%
Duration of present value of future benefits	9.39	9.40	9.26	9.39
Ratio of market value of assets to retiree payout	6.67	8.04	6.67	6.90

% of PVB Paid by Year		
Years	PVB	% Paid
1-10	\$ 863,919,974	61.17%
11-15	221,449,192	15.68%
16-30	270,357,677	19.14%
31-100	56,519,278	4.00%
	\$ 1,412,246,121	100.00%

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 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% 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 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% 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.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of actives 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 Present Value of Future Benefits

The duration of the present value of future benefits (PVFB) may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, a duration of 10 indicates that the PVFB 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, except as provided below. 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.

Risk Measures Required by Funding Policy

Risk Measures outlined in Section 2:303(D)(3)(a) of the WCERS Actuarial Funding Policy are shown below:

Actuarial Valuation Date September 30	Funded Ratio (Market Value)	Retiree Liabilities / Total Liabilities	UAAL / DB Plan Payroll [#]	Market Value of Assets / DB Plan Payroll [#]	Total AAL / DB Plan Payroll [#]
2014	48 %	0.75	6.97	6.16	12.78
2015	52 %	0.83	6.71	7.61	14.51
2016	54 %	0.84	6.67	7.87	14.66
2017	56 %	0.84	6.20	7.79	13.81
2018	63 %	0.84	5.10	8.52	13.45
2019	63 %	0.84	4.59	8.10	12.84
2020	62 %	0.85	4.88	8.59	13.94
2021	72 %	0.84	5.07	10.52	14.66
2022	60 %	0.85	4.71	8.12	13.53

Ratio is based on base wages starting in 2015 and pensionable wages in prior years.

CHAPTER 3 – ACTUARIAL FUNDING POLICY

SECTION 2:301- INTRODUCTION.

(A) Purpose

(1) This document and the attached glossary of terms comprise the Actuarial Funding Policy for the Wayne County Employees' Retirement System (WCERS). The purpose of this Actuarial Funding Policy (Funding Policy) for the Defined Benefit Plan is to establish the funding objectives and policy set by the Retirement Commission for WCERS. The Retirement Commission establishes this Funding Policy to help ensure the systematic funding of future benefit payments for members of WCERS.

(B) Act 314

(1) Section 20m of the Public Employee Retirement System Investment Act, Public Act 314 of 1965, as amended ("Act 314") [MCL § 38.1140m], provides for the Retirement Commission's duties and responsibilities with respect to determining and certifying the annual required employer contribution to the Retirement System in relevant part as follows:

(a) The governing board vested with the general administration, management, and operation of a system or other decision-making body that is responsible for implementation and supervision of any system shall confirm in the annual actuarial valuation required under section 20h and the summary annual report required under section 13 that each system under this act provides for the payment of the required employer contribution as provided in this section and shall confirm in the summary annual report that the system has received the required employer contribution for the year covered in the summary annual report. The required employer contribution is the actuarially determined contribution amount. **An annual required employer contribution in a system under this act shall consist of a current service cost payment and a payment of at least the annual accrued amortized interest on any unfunded actuarial liability and the payment of the annual accrued amortized portion of the unfunded principal liability.** For fiscal years that begin before January 1, 2006, the required employer contribution shall not be determined using an amortization period greater than 40 years. **Except as otherwise provided in this section, for fiscal years that begin after December 31, 2005, the required employer contribution shall not be determined using an amortization period greater than 30 years. . . .** In a plan year, any current service cost payment may be offset by a credit for amortization of accrued assets, if any, in excess of actuarial accrued liability. A required employer contribution for a system administered under this act shall allocate the actuarial present value of future plan benefits between the current service costs to be paid in the future and the actuarial accrued liability. The governing board vested with the general administration, management, and operation of a system or other decision-making body that is responsible for implementation and supervision of a system shall act upon the recommendation of an actuary and the

CHAPTER 3 – ACTUARIAL FUNDING POLICY

board and the actuary shall take into account the standards of practice of the actuarial standards board of the American academy of actuaries in making the determination of the required employer contribution. [Emphasis added].

(C) GASB

(1) In 2012, the Governmental Accounting Standards Board (GASB) approved two new financial reporting standards. GASB Statement No. 67, “Financial Reporting for Pension Plans” replaces the requirements of Statement No. 25. GASB Statement No. 68, “Accounting and Financial Reporting for Pensions” replaces the requirements of Statements No. 27 and No. 50. Prior to the changes, the Annual Required Contribution (ARC) rate was used as a basis for funding decisions. The new GASB statements separate accounting cost (expense) from funding cost (contributions), necessitating the creation of this Funding Policy.

(D) PA 202

(1) On December 20, 2017, Public Act 202 of 2017, the Protecting Local Government Retirement and Benefits Act (“PA 202”) [MCL § 38.2801 et seq.], went into effect. PA 202 imposed new mandates, new reporting requirements, and established evaluation criteria by which the State Treasurer may determine that a “local unit” is “underfunded” and thus subject to the oversight of the Municipal Stability Board. The State Treasurer will determine that a local unit is underfunded if the local unit’s pension fund is “less than 60% funded, according to the most recent annual report, and ... the annual required contribution for all of the retirement pension system of the local unit of government is greater than 10% of the local unit of government’s annual general fund operating revenues.” MCL § 38.2805(4)(b).

SECTION 2:302 - FUNDING OBJECTIVES.

(1) General

- Maintain a targeted funded ratio of 100%.
- Reach and maintain a funded ratio that exceeds the underfunded threshold established by PA 202 as soon as reasonably possible.
- Maintain adequate assets so that current plan assets plus future contributions (Employer and Member) and investment earnings should be sufficient to fund all benefits expected to be paid to members and their beneficiaries.
- Maintain stability of employer contribution rates, consistent with these funding objectives.
- Maintain public policy goals of accountability and transparency. Each policy element is clear in intent and effect, and each should allow an assessment of whether, how and when the funding requirements of the plan will be met.
- Monitor material risks to assist in any risk management strategies the Retirement Commission deems appropriate.
- Promote intergenerational equity. Each generation of members and employers should incur the cost of benefits for the employees who provide services to them, rather than deferring those costs to future members and employers.

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- Provide a reasonable margin for adverse experience to help offset risks.
- Review investment return assumption, potentially in conjunction with a periodic asset/liability study and in consideration of the Retirement Commission’s risk profile.
- Continue progress of systematic reduction of the Unfunded Actuarial Accrued Liabilities (UAAL).

SECTION 2:303 - ELEMENTS OF ACTUARIAL FUNDING POLICY.

(A) Actuarial Cost Method

(1) The Individual Entry Age Normal actuarial cost method of valuation shall be used in determining Actuarial Accrued Liability (AAL) and Normal Cost in accordance with Section 141-36 of the Retirement Ordinance. Differences in the past between assumed experience and actual experience (“actuarial gains and losses”) shall become part of the AAL. The Normal Cost shall be determined on an individual basis for each active member.

(B) Asset Smoothing Method

(1) The investment gains or losses of each valuation period, resulting from the difference between actual investment return and assumed investment return, shall be recognized annually in level amounts over a period not to exceed 4 years in calculating the Funding Value of Assets. Regardless of the results obtained from the smoothing method described above, the Funding Value of Assets shall not diverge from the Market Value of Assets by more than 20% (corridor). Based upon consultation with the Actuary, the Retirement Commission may combine bases (scheduled recognition of prior gains and losses) in order to reset the Funding Value of Assets to be equal to the Market Value of Assets when the difference between Market Value of Assets and Funding Value of Assets is 5% or less of Market Value of Assets.

(C) Amortization Method

- (1) A level percent of payroll amortization method shall be used to systematically pay off the UAAL over a closed amortization period not to exceed 30 years as required under Section 20m of Act 314 (MCL § 38.1140m).
- (2) The amortization period for unfunded accrued liabilities shall be set in a manner to ensure that the plan will be 100% funded as soon as reasonably possible. Starting in conjunction with the actuarial valuation dated September 30, 2018 (determines contribution for Fiscal Year 2020), the amortization period for the base unfunded accrued liabilities shall be set at 16 years and shall decrease by one (1) year annually.
- (3) Amortization Periods related to annual activities.
 - (a) If the effect of a benefit change or an assumption change is an increase in liabilities, such effect shall be amortized over a period not exceeding 10 years.

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- (b) If the effect of a benefit change or an assumption change is a decrease in liabilities, such effect shall be amortized over the greater of 10 years and the remaining period for base liabilities.
 - (c) Liabilities arising from benefit increases provided to retirees and those resulting from early retirement incentive programs shall be separately funded over a period not exceeding 5 future years.
- (4) If level percent of pay financing is used to calculate contributions in the actuarial valuation, the contribution dollar amount for unfunded accrued liabilities shall not be less than the payroll on the valuation date multiplied by the percent of payroll amortization determined in the actuarial valuation and adjusted for assumed payroll growth.
- (5) In order to stabilize contributions, the Retirement Commission may from time to time elect to combine separate amortization schedules arising under subparagraph (3) into a single schedule over the average remaining amortization period being used.
- (6) In the event that the Plan's assets exceed the Plan's liabilities, all amortization schedules other than those related to benefit changes for retirees or early retirement incentive programs offered by the employer shall be considered completed and employer contributions will be set based upon the Normal Cost plus the completion of any remaining amortizations due to benefit changes for retirees or early retirement incentive programs offered by the employer, without regard to such overfunding.

(D) Risk Management

(1) Actuarial Assumption Changes

- (a) The actuarial assumptions used for funding shall be those last adopted by the Retirement Commission based on the most recent experience study and upon the advice and recommendation of the Actuary. The Retirement Commission shall direct the actuary to conduct an experience study at least every five years. The results of the study shall be the basis for the actuarial assumptions recommended to the Retirement Commission.
- (b) The actuarial assumptions can be updated during the five-year period between experience studies, as advised by the Actuary, if significant plan design changes or other significant events occur.

(2) Risk Control

- (a) The Retirement Commission shall carefully monitor the risk measures outlined below and shall consider steps to mitigate risk, with particular regard to funded ratio increases. Risk mitigation may lead to a reduction in the assumed rate of investment return. Examples of risk mitigating techniques include, but are not limited to:

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- i. Review asset allocation with investment advisors and actuary with a goal of reducing the standard deviation of the portfolio return once WCERS becomes fully (100%) funded.
- ii. Reduce asset-liability mismatching.

Should such de-risking or future unfavorable experiences cause unfunded liabilities to arise again, such liabilities shall be funded over an initial closed period of 20 future years and subsection (C) shall apply.

(3) Risk Measures

(a) The following risk measures will be annually determined by the Retirement System's Actuary to provide quantifiable measurements of risk and its movement over time:

- i. Funded ratio (assets / accrued liabilities)
- ii. Average UAAL amortization period (years required to pay down the UAAL based on current funding schedule)
- iii. Total UAAL / Total Defined Benefit Plan Active Member Payroll - Measures the risk associated with contribution decreases relative impact on the ability to fund the UAAL. A decrease in this measure indicates a decrease in contribution risk.
- iv. Total Assets / Total Defined Benefit Plan Active Payroll - Measures the risk associated with the ability to respond to asset experience through adjustments in contributions. A decrease in this measure indicates a decrease in asset risk.
- v. Total AAL / Total Defined Benefit Plan Active Payroll - Measures the risk associated with the ability to respond to liability experience through adjustments in contributions. A decrease in this measure indicates a decrease in experience risk. This also provides a long-term measure of the asset risk in situations where the WCERS has a funded ratio below 100%.

(4) Closed Group Funding

(a) Closed groups arise when new hires of a group participating in one of the Defined Benefit Plans of the WCERS are no longer allowed to participate in said defined benefit plan, or when active members of a group are transferred out of the WCERS, leaving only retirees and vested former members in the WCERS.

(b) The liabilities of employers sponsoring closed groups will only be considered discharged if the pension obligations (actuarial accrued liabilities) for the sub- group(s) (retirees, beneficiaries, active vested and non-vested and deferred vested members) leaving the WCERS are transferred to the employer/successor plan or, if such obligations remain with the WCERS, assets sufficient to fund the pension obligation (actuarial accrued liabilities) of any such sub-group(s) either remain and/or are deposited into the WCERS through a lump sum payment made by the employer associated with the closed group.

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Such transfers and payments will be based on amounts required by the Retirement Commission, based on consultation with the WCERS Actuary. Any such transfers and payments shall include a margin for adverse experience that may occur for the WCERS in the future, as follows:

- i. **Closed Groups leaving liability with WCERS.** All calculations related to liabilities remaining with the WCERS shall be based on the Market Value of assets on deposit with the WCERS at the time of the transfer, and the Actuarial Accrued Liability calculated based on a risk-free rate of investment return and such other actuarial assumptions and methods as the Actuary and Retirement Commission deem appropriate for such purpose. Any sub-groups remaining in the WCERS will need to be 100% funded based on current assets and a risk-free rate of investment return but not less than 150% funded based on current assets and actuarial assumptions used in the regular valuation of WCERS. Current assets shall include any required transfers and payments from the employer/successor plan.
- ii. **Closed Groups transferring liability from WCERS.** All calculations with respect to liabilities being transferred to the employer or to a successor system or to any assets transferred from the WCERS in conjunction with a release of liability (transferred to the employer/successor plan) will be in an amount equal to 80% of the Funded Ratio of the Actuarial Accrued Liability to be transferred based on the actuarial assumptions used in the regular valuation of WCERS. Such 80%, however, shall not be permitted to result in a transfer of assets that exceeds the actuarial accrued liabilities being transferred.

(5) Stress Testing

In order to gain an enhanced understanding of the major stressors affecting the Retirement System, the Trustees shall from time to time consider the need for stress testing of Retirement System benefits and liabilities.

W.C.E.R.S. Policy – Actuarial Funding Policy	
Category: Board Governance	
Date Adopted: 12/19/2014	Date Last Amended: 5/24/2021

CHAPTER 3 – ACTUARIAL FUNDING POLICY

APPENDIX A GLOSSARY

1. **Actuarial Accrued Liability (AAL):** The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future Normal Cost. Sometimes referred to as “accrued liability” or “past service liability.”
2. **Actuarial Assumptions:** Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement actuarial assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic actuarial assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
3. **Actuarial Cost Method:** A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future Normal Cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”
4. **Actuarial Gain (Loss):** A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. For example, if during a given year the assets earn more than the investment return assumption, the amount of earnings above the assumption will cause an unexpected reduction in UAAL, or “actuarial gain” as of the next valuation. These include contribution gains and losses that result from actual contributions made being greater or less than the level determined under the policy.
5. **Actuary:** A person who is trained in the application of probability and compound interest to solve problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries (MAAA). For the purpose of this Funding Policy, Actuary shall only refer to the WCERS actuary.
6. **Amortization:** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.
7. **Entry Age Normal Actuarial Cost Method:** A funding method that calculates the Normal Cost as a level percentage of pay over the working lifetime of the plan’s members.
8. **Experience Study:** An actuarial investigation of demographic and economic experiences of the WCERS during the period studied. The investigation is made for the purpose of updating the actuarial assumptions used in valuing the actuarial liabilities.
9. **Funding Value of Assets:** The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets.
10. **Market Value of Assets:** The fair value of plan assets as reported in the plan’s audited financial statements.

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11. **Normal Cost (NC):** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the Normal Cost.
12. **Unfunded Actuarial Accrued Liability (UAAL):** The positive difference, if any, between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”