Wayne County Airport Authority Division

of the Wayne County Employees' Retirement System

Annual Actuarial Valuation Report

September 30, 2023

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May 17, 2024

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

and

Wayne County Airport Authority
Detroit, Michigan

Dear Commission Members:

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

The date of the valuation was September 30, 2023. 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 Retirement System staff, concerning financial operations and active members, vested former members, retirees, and beneficiaries. We checked the data for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy of the data.

The purpose of the valuation is to measure the System's funding progress, and to determine the WCAA contribution rate for the fiscal year beginning October 1, 2024. 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 contribution 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. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. The combined effect of the assumptions is expected to have no significant bias (i.e., not significantly optimistic or pessimistic). All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice. 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.

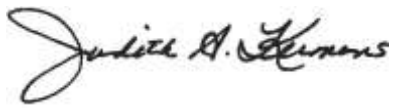
This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training, and Processes Team who developed and maintain the model.

This report was prepared by actuaries who have substantial experience valuing public employee retirement plans. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board

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:ah

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. Some members contribute percentages of their pay (by WCAA plan document or collective bargaining agreement) and the employer contributes the actuarially determined remainder needed to meet the funding objective.

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, 2025 are shown on page A-2.

Contributions to Finance the WCAA Defined Benefit Plans@ as a Percent of Payroll

Defined Benefit Plans - Contributions for	Fiscal Year Ending	
	September 30, 2025	September 30, 2024
Total Normal Cost	**9.45 %**	9.49 %
Less Portion Paid by Members*	**1.53 %**	1.56 %
Employer Defined Benefit Normal Cost	**7.92 %**	7.93 %
Unfunded Actuarial Accrued Liability#	**31.26 %**	28.53 %
Total Computed Employer Rate	**39.18 %**	36.46 %
Minimum Dollar Amounts	**$7,852,740**	$7,306,243

@ Including the DB portion of the Hybrid plans.
** Weighted average of the various contribution rates.*
 # Amortized as a level dollar amount according to the schedule below.

The DB Plans are closed to new hires, which is why a level dollar amortization method is being used. The percent of pay figure shown above is computed based on estimated Fiscal Year 2025 payroll and the computed dollar amount.

Historical contribution rates for prior fiscal years are shown on page A-3. ***The dollar amount shown above ($7,852,740) is the minimum amount that should be deposited into the Retirement System during Fiscal Year 2025.***

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	9/30/2023 Amount	Computed FY 2024 Contribution	Projected 9/30/2024 Amount	FY 2025 Contribution
Base	16	11	$ 28,485,250	$ 2,939,732	$ 27,370,136	$ 3,488,232
Assumption Changes (2016)	10	3	4,639,062	1,317,866	3,590,339	1,317,866
Local 741 Benefit Changes	10	6	58,793	10,465	51,947	10,465
2020 Retirement Incentive	5	2	679,472	249,406	467,605	249,407
Assumption Changes (2021)	10	8	8,162,671	1,199,525	7,474,083	1,199,525
Total			$ 42,025,248	$ 5,716,994	$ 38,954,110	**$ 6,265,495**
Projected Payroll						$ 20,040,969
UAAL Contribution Rate						**31.26%**

Historical Schedule of Employer Normal Cost Rates and Unfunded Actuarial Accrued Liabilities Contributions to Finance the WCAA Defined Benefit Plans

Fiscal Year Ending	Valuation Date September 30@	Employer Contribution Rates		
		Normal Cost	UAAL	Total
2016	2014	5.64 %	17.36 %	23.00 %
2017	2015	5.62 %	14.91 %	20.53 %
2018	2016 #	6.94 %	17.69 %	24.63 %
2019	2017	6.93 %	18.68 %	25.61 %
2020	2018	7.02 %	19.77 %	26.79 %
2021	2019 *	6.82 %	17.59 %	24.41 %
2022	2020 *	6.88 %	19.70 %	26.58 %
2023	2021 #	7.95 %	24.06 %	32.01 %
2024	2022	7.93 %	28.53 %	36.46 %
2025	**2023**	**7.92 %**	**31.26 %**	**39.18 %**

* *After benefit changes.*
@ *Reflects transfers from the DC plan (if any).*
\# *After assumption changes (adopted after Experience Study for 2016 and 2021).*

Note: Beginning with the September 30, 2014 valuation, the DB plans are closed to most new hires (closed to all new hires beginning with the September 30, 2019 valuation). The UAAL is amortized in accordance with the schedule shown on page A-2.

Fiscal Year Ending	Valuation Date September 30	Employer Dollar Contributions		
		Computed Minimum (1)	Actual Contributed* (2)	Ratio (2) / (1)
2016	2014	$6,156,621	$11,021,191	179.01 %
2017	2015	5,693,734	6,345,861	111.45 %
2018	2016	7,042,562	7,265,285	103.16 %
2019	2017	7,059,410	9,342,133	132.34 %
2020	2018	7,317,889	7,554,761	103.24 %
2021	2019	6,426,192	6,694,156	104.17 %
2022	2020	6,375,282	6,494,867	101.88 %
2023	2021	6,541,504	6,992,606	106.90 %
2024	2022	7,306,243	n/a	n/a
2025	2023	7,852,740	n/a	n/a

* *Excludes transfers to County (if any) for payment of Combined Pre-2002 Retiree Liability.*

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)				
2014	$ 136,799	$ 84,435	62%	$ 27,204	$ 52,364	192 %
2015	144,137	99,313	69%	28,300	44,824	158 %
2016	161,201	112,006	69%	30,106	49,195	163 %
2017#	167,299	118,566	71%	29,023	48,733	168 %
2018	173,783	125,613	72%	29,102	48,170	166 %
2019*	175,021	135,356	77%	28,178	39,665	141 %
2020*	178,467	141,664	79%	25,619	36,803	144 %
2021#	186,964	150,515	81%	21,904	36,449	166 %
2022	191,640	151,289	79%	21,364	40,351	189 %
2023	196,434	154,408	79%	21,291	42,025	197 %

* *After benefit changes.*
@ *Reflects transfers from the DC plan (if any).*
\# *After changes in assumptions (adopted after Experience Study for 2016 and 2021).*

Note: Beginning with the September 30, 2014 valuation, the DB plans are closed to most new hires (closed to all new hires beginning with the September 30, 2019 valuation).

Short Condition Test

Testing for level contribution rates is ***a 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, 2023, 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 100% of the assets needed to cover retiree liabilities. While many systems have assets sufficient to cover 100% of retiree liabilities, particularly in the current economy, many also do not. Lack of assets allocated to funding active member liabilities does indicate a need for increased funding. It is very important that sufficient progress be made in funding all liabilities at 100%.

Valuation Date	Aggregate Actuarial Accrued Liabilities For			Valuation Assets (Funding Value)	Portion of Accrued Liabilities Covered by Assets		
	(1) Member Contributions	(2) Retirees and Beneficiaries	(3) Members (Employer Financed Portion)		(1)	(2)	(3)
	($ in thousands)						
9/30/2014	$ 22,088	$ 78,147	$ 36,564	$ 84,435	100%	80%	0%
9/30/2015	23,224	79,726	41,187	99,313	100%	95%	0%
9/30/2016	21,101	86,722	53,378	112,006	100%	100%	8%
9/30/2017	20,109	91,564	55,626	118,566	100%	100%	12%
9/30/2018	17,584	95,984	60,215	125,613	100%	100%	20%
9/30/2019	15,945	100,199	58,877	135,356	100%	100%	33%
9/30/2020	13,453	108,255	56,759	141,664	100%	100%	35%
9/30/2021	10,272	125,634	51,058	150,515	100%	100%	29%
9/30/2022	8,404	130,901	52,335	151,289	100%	100%	23%
9/30/2023	7,637	134,313	54,484	154,408	100%	100%	23%

Derivation of Experience Gain (Loss)
Year Ended September 30, 2023

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)	Funding Value of Assets (FVA) (B)	Unfunded Actuarial Accrued Liability (UAAL) (C) = (A) - (B)
(1)	Beginning of Year (BOY)	$ 191,640,249	$ 151,289,193	**$ 40,351,056**
(2)	Total Normal Cost (including service and annuity purchases)	1,649,906	-	**1,649,906**
(3)	Total Contributions (including transfers)	-	7,381,654	**(7,381,654)**
(4)	Benefit Payments and Refunds	(12,073,969)	(12,073,969)	**-**
(5)	Administrative Expenses and audit adjustments	-	(493,033)	**493,033**
(6)	Interest: {(1) + 1/2 [(2) + (3) + (4) + (5)]} x 6.75%	12,583,905	10,037,015	**2,546,890**
(7)	Expected Before Changes: (1) + (2) + (3) + (4) + (5) + (6)	$ 193,800,091	$ 156,140,860	**$ 37,659,230**
(8)	Change from revised assumptions	-	-	-
(9)	Change from benefit modifications	-	-	-
(10)	Expected After Changes: (7) + (8) + (9)	$ 193,800,091	$ 156,140,860	**$ 37,659,230**
(11)	Actual End of Year (EOY)	196,433,591	154,408,343	42,025,248
(12)	Gain or Loss: (10)-(11)	(2,633,500)	1,732,517	(4,366,018)
(13)	Direction	Loss	Loss	Loss
(14)	Percent of BOY AAL (12)/(1A)	(1.4)%	0.9%	**(2.3)%**

Comments on the Actuarial Valuation

1. ***Experience (Total Plan):*** The Market Value rate of return during fiscal year 2023 was 10.3%, and the total WCERS fund had $95.1 million of investment income. The fund was assumed to earn 6.75% or $67.6 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 $12.8 million (see page B-8). As of September 30, 2023, the Funding Value of assets exceeds the Market Value by $40.9 million and the Funding Value rate of return was 5.5%. The WCAA receives a proportionate share of each year's Funding Value of Assets (see page B-9).

   An aggregate gain/(loss) analysis for the WCAA is shown on page A-6. In general, liability losses during the year were mainly a result of higher than expected pay increases; additional detail on gains and losses would require an additional study.

2. ***Status:*** Computed actuarial accrued liabilities exceed the Funding Value of assets by $42.0 million (for the WCAA). The WCAA is 79% funded based upon the Funding Value of Assets. Based on the Market Value of Assets, the WCAA is 75% 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 10 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.

3. ***Contribution Rates:*** This year (FY 2023) the WCAA made employer contributions of $7.0 million, which exceeded the actuary's minimum recommendation by $0.5 million. Extra contributions help increase the funded percentage of the plan.

4. ***Assumption Changes:*** There were no assumption changes reflected in the September 30, 2023 valuation. It is expected that the next scheduled Experience Study will follow the September 30, 2025 valuation, which will include a review of economic assumptions and various demographic assumptions, as well as the interest rate credited to member contributions (currently 0.75%; 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).

Comments on the Actuarial Valuation

5. ***Combined Pre-2002 Retiree Liability:*** 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 to 2023, which means that the County made all of the benefit payments for the combined retiree group in FYs 2021 to 2023.

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) Age	Average (In Years) Service	Annual Benefit	Calculated Liabilities
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
2023	1,759	$ 30,407,452	82.6	24.2	$17,287	$212,822,929

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

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).

Comments on the Actuarial Valuation

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.*

As mentioned on the prior page, to date, an official agreement regarding the settlement of the Combined Pre-2002 Retiree Unfunded Liability has not yet been reached, so all benefit payments related to such retirees after FY 2020 have been paid by the County.

Conclusion

As shown on page A-4, the Plan has gone from being 62% funded in 2014 to 79% funded in 2023. Contributions made in excess of the minimum required by the Airport in each and every year since 2016 (2016 and 2019 in particular) were an important factor in this increase.

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 funding value of assets), it is expected that:

1) The employer normal cost as a percentage of pay should remain relatively level in the short term since nearly all of the active population is comprised of Plan 5, 5A, and 5B members. The dollar amount of the normal cost will eventually drop since the plan is closed to new hires;
2) The dollar amount of contributions will eventually decrease from present levels since the plan is closed to new hires;
3) The unfunded actuarial accrued liabilities will be fully amortized when the amortization periods end; and
4) The funded status of the plan will increase gradually toward a 100% funded ratio.

We have assessed that the Actuarially Determined Employer Contribution (ADEC) calculated under the funding policy in this report is reasonable. This assessment will be made each year with the determination based on the circumstances at that time and may or may not yield the same result.

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 remaining 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 funding 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, 2023

Present Resources and Expected Future Resources

A. Valuation assets	
1. Net assets at market value	$148,274,451
2. Valuation adjustment	6,133,892
3. Valuation assets	154,408,343
B. Actuarial present value of expected future employer contributions	
1. For normal costs*	11,617,896
2. For unfunded actuarial accrued liabilities	42,025,248
3. Total	53,643,144
C. Actuarial present value of expected future member contributions	2,431,593
D. Total Actuarial Present Value of Present and Expected Future Resources	$210,483,080

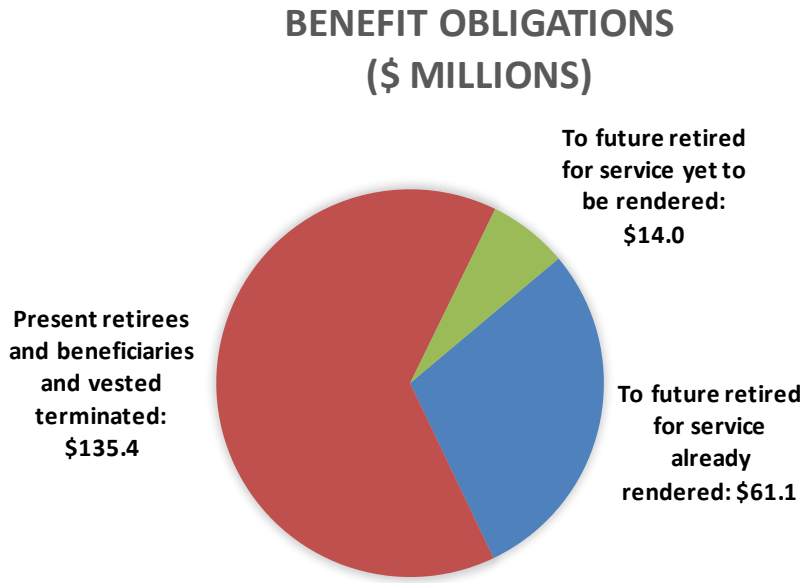
* *Includes Administrative Expenses.*

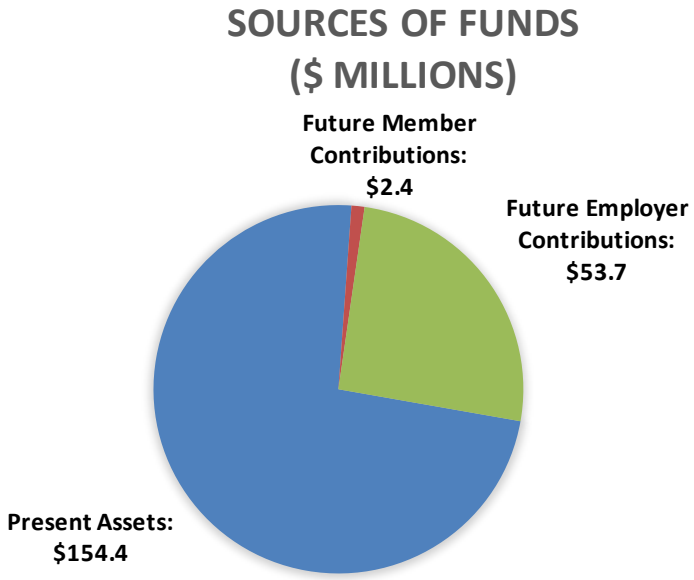
Actuarial Present Value of Expected Future Benefit Payments and Reserves

A. To retired members and beneficiaries	$134,312,738
B. To vested terminated members	1,069,530
C. To present active members	
1. Allocated to service rendered prior to valuation date	61,051,323
2. Allocated to service likely to be rendered after valuation date*	14,049,489
3. Total	75,100,812
D. Total Actuarial Present Value of Expected Future Benefit Payments and Reserves	$210,483,080

* *Includes Administrative Expenses.*

Financing $210.5 Million of Benefit Promises
September 30, 2023





SECTION B

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Brief Summary of Benefit Provisions as of September 30, 2023
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).

Normal Retirement (no reduction factor for age):

Eligibility - Police Command and Officers: 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, social security benefit payments, and outside earnings 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, 2023
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:

Police Command and Officers: 5.00% of annual compensation. 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, 2023
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.**

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. Airport Police Command may retire with 25 years of service regardless of age, POAM may retire with 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 employer 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.

Brief Summary of Benefit Provisions as of September 30, 2023
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. **Eligibility to enter this Plan ceased as of March 31, 1986.**

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; age 65 with 5 years of service; or 30 years of service regardless of age. Airport Police Command may retire with 25 years of service regardless of age.

Pension Amount - Average final compensation multiplied by the sum of: 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 employer 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. 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 (Police Command) 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. 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, 2023
Defined Contribution Plan 4

Defined Contribution Plan 4 is not included in this valuation.

From time-to-time, members in Plan 4 have been deemed eligible to roll account balances into Defined Benefit Plan 5 to receive a defined benefit during periods as specified in CBAs. This benefit would be based on the amount of service that can be purchased by the member's account balance.

Brief Summary of Benefit Provisions as of September 30, 2023
Hybrid Plans 5, 5A, and 5B

Availability - Hybrid Plan 5 was available for new employees hired after October 1, 2001; however, a defined contribution plan is obligatory for new employees (with the exception of Fire members, who are eligible for Plan 5A). Members may transfer into Plan 5 or 5A when allowed by CBA.

Defined Benefit Hybrid 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 (except at-will employees).

Pension Amount -
Plan 5 - 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).
Plan 5A - Average final compensation multiplied by the sum of a) 1.50% of credited service up to 20 years; and b) 1.75% of credited service over 20 years. Maximum pension is 75% of AFC (less worker's compensation payments).
Plan 5B - Average final compensation multiplied by the sum of a) 1.25% or 1.50% (depending on prior Plan) of credited service up to 20 years; and b) 1.50% or 1.75% (depending on prior Plan) of credited service over 20 years for service accrued through July 28, 2019. 2.00% of credited service is used for credited service accrued after July 29, 2019. 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 Police Command 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. For Plans 5A and 5B, compensation does not include payout of sick and annual leave banks.

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.

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, 2023
Hybrid Plans 5, 5A, and 5B

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:

Plan 5: 0% of covered compensation.
Plan 5A: 3% of covered compensation until the Airport funding ratio is 100%. If funding is 100%, contributions reduce to 2% of covered compensation until Airport funding ratio is less than 100%, at which point contributions increase to 3% of covered compensation. Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).
Plan 5B - 6% of covered compensation effective July 29, 2019. Contribution balances are credited with interest annually in an amount determined by the retirement commission (0.75% as of October 1, 2019).

Defined Contribution Hybrid Provisions

Contributions:

6% of base compensation (3% member plus 3% 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.
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.

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

Year Ended September 30:	2021	2022	2023	2024	2025	2026
Assumed Investment Return	7.25%	6.75%	6.75%	6.75%	6.75%	6.75%
A. Funding Value Beginning of Year	$1,015,039,183	$1,046,863,559	$1,027,941,207			
B. Market Value End of Year	1,148,397,922	946,663,468	989,191,197			
C. Market Value Beginning of Year	963,265,679	1,148,397,922	946,663,468			
D. Non-Investment Net Cash Flow	(62,782,047)	(58,987,815)	(52,600,679)			
E. Investment Income						
E1. Market Total: B - C - D	247,914,290	(142,746,639)	95,128,408			
E2. Amount for Immediate Recognition	71,314,492	68,672,451	67,610,759			
E3. Amount for Phased-In Recognition: E1-E2	176,599,798	(211,419,090)	27,517,649			
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.25 x E3	44,149,950	(52,854,773)	6,879,412			
F2. First Prior Year	(11,013,321)	44,149,950	(52,854,773)	$ 6,879,412		
F3. Second Prior Year	(8,888,845)	(11,013,321)	44,149,950	(52,854,773)	$ 6,879,412	
F4. Third Prior Year	(955,853)	(8,888,844)	(11,013,320)	44,149,948	(52,854,771)	$6,879,413
F5. Total Recognized Investment Gain	23,291,931	(28,606,988)	(12,838,731)	(1,825,413)	(45,975,359)	6,879,413
G. Funding Value End of Year:						
G1. Preliminary: A + D + E2 + F5	1,046,863,559	1,027,941,207	1,030,112,556			
G2. Upper Corridor Limit: 120% x B	1,378,077,506	1,135,996,162	1,187,029,436			
G3. Lower Corridor Limit: 80% x B	918,718,338	757,330,774	791,352,958			
G4. Funding Value End of Year	**$1,046,863,559**	**$1,027,941,207**	**$1,030,112,556**			
H. Difference between Market & Funding Value	101,534,363	(81,277,739)	(40,921,359)	(39,095,946)	6,879,413	0
I. Recognized Rate of Return	**9.6%**	**3.9%**	**5.5%**			
J. Market Value Rate of Return	26.6%	(12.8)%	10.3%			
K. Ratio of Funding Value to Market Value	91.2%	108.6%	104.1%			

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 three 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	$ 807,336,480	$ 139,326,988	$ 946,663,468
(2) Audit Adjustment	-	-	-
(3) Employee Contributions	12,298,107	389,048	12,687,155
(4) Employer Contributions*	64,646,334	6,992,606	71,638,940
(5) Benefit Payments & Refunds*	121,534,186	12,073,969	133,608,155
(6) Pre-2002 Combined Retirees Transfer	-	-	-
(7) Administrative Expenses	2,825,586	493,033	3,318,619
(8) Average Balance: (1) + 0.5 x ((2)+(3)+(4)-(5)+(6)-(7))	783,628,815	136,734,314	920,363,129
(9) Net Investment Income Allocation	80,995,597	14,132,811	95,128,408
(10) Market Value End of Year: (1)+(2)+(3)+(4)-(5)+(6)-(7)+(9)	$ 840,916,746	$ 148,274,451	$ 989,191,197
(11) Market Value Rate of Return: (9)/(8)	10.3%	10.3%	10.3%
(12) Percentage of WCERS Market Value	85.01%	14.99%	100.00%
(13) Funding Value Allocation: Total x (12)	**$ 875,704,213**	**$ 154,408,343**	**$1,030,112,556**

** Includes pre-Medicare Stipend amount of $1,662,541 (for County).*

Asset Allocation

	2023	
	Value	% of Total
Cash & Short-Term		
Cash (incl. checking/savings accounts)	$ 135,301	0.09%
Accrued interest and dividends	185,067	0.12%
Accounts receivable	5,250	0.00%
Prepaid expenses	3,880	0.00%
Short-term investment funds	5,503,448	3.71%
Other Rec Due from broker	127,802	0.09%
	5,960,748	4.02%
Fixed Income		
Corporate bonds	2,618,182	1.77%
U.S Government / Agency bonds	5,190,768	3.50%
Asset backed securities	1,914,398	1.29%
Mortgage backed securities	5,670,276	3.82%
Municipal bonds	355,683	0.24%
International fixed income	459,009	0.31%
Commingled fixed income funds	1,015,682	0.69%
	17,223,998	11.62%
Equities		
Common stocks	59,666,288	40.24%
Commingled funds	18,606,746	12.55%
Stock mutual funds	3,931,906	2.65%
International equities	824,059	0.56%
	83,028,999	56.00%
Real Estate		
Hedge funds	7,974,216	5.38%
Real estate investment trusts	26,175,562	17.65%
Private equities	8,366,127	5.64%
	42,515,905	28.67%
Total Assets	$ 148,729,650	100.31%
Liabilities		
Accounts payable	455,199	0.31%
Net assets held in trust for pension benefits	$ 148,274,451	100.00%

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	3	$ 137,462	2	$ 139,300	1	$ (1,838)	187	$ 7,712,477
2015	9	277,419	0	54,889	9	222,530	196	7,935,007
2016	11	380,659	2	110,855	9	269,804	205	8,204,811
2017	11	588,190	1	146,749	10	441,441	215	8,646,252
2018	15	563,974	1	112,297	14	451,677	229	9,097,929
2019	14	570,257	0	162,598	14	407,659	243	9,505,588
2020	24	848,585	1	98,803	23	749,782	266	10,255,370
2021	34	1,183,846	2	71,682	32	1,112,164	298	11,367,534
2022	17	686,835	4	152,785	13	534,050	311	11,901,584
2023	**17**	**538,487**	**2**	**127,198**	**15**	**411,289**	**326**	**12,312,873**

* *Includes benefit adjustments, if any.*

Includes only members that retired from WCAA after September 2002.

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	187	$ 7,712	28.3%	0.5%	(0.0)%	$ 41,243	3.1
2015	196	7,935	28.0%	4.8%	2.9%	40,485	3.0
2016	205	8,205	27.3%	4.6%	3.4%	40,023	3.2
2017	215	8,646	29.8%	4.9%	5.4%	40,215	3.1
2018	229	9,098	31.3%	6.5%	5.2%	39,729	3.0
2019	243	9,506	33.7%	6.1%	4.5%	39,118	2.9
2020	266	10,255	40.0%	9.5%	7.9%	38,554	2.4
2021	298	11,368	51.9%	12.0%	10.9%	38,146	2.0
2022	311	11,902	55.7%	4.4%	4.7%	38,269	1.9
2023	**326**	**12,313**	**57.8%**	**4.8%**	**3.5%**	**37,770**	**1.9**

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

\# *Excludes Defined Contribution Plan payroll.*

Includes only members that retired from WCAA after September 2002.

Retired Members and Beneficiaries September 30, 2023 by Attained Age Groups

Attained Age Grouping	Number	Annual Pensions
40-44	1	$ 7,121
45-49	1	29,542
50-54	12	386,385
55-59	48	1,856,669
60-64	53	2,115,875
65-69	79	2,830,241
70-74	77	3,077,063
75-79	37	1,341,225
80-84	14	411,773
85-89	3	151,496
95-99	1	105,483
Totals	**326**	**$12,312,873**

Average age now:	67.8 yrs.
Average age at retirement:	57.8 yrs.
Average service at retirement:	26.0 yrs.

Includes only members that retired from WCAA after September 2002.

Retired Members and Beneficiaries September 30, 2023 by Type of Retirement

Type of Pension Being Paid	Benefits Paid	Number
Age & Service Pensions		
S.S. Equated/Accelerated		
Straight Life	$ 119,029	5
Option 1 (Certain and Life)	56,782	4
Option 2 (100% To Survivor)	223,214	7
Option 3 (50% To Survivor)	236,697	11
Total	635,722	27
Not S.S. Equated/Accelerated		
Straight Life	$ 3,598,247	85
Option 1 (Certain and Life)	152,494	4
Option 2 (100% To Survivor)	4,219,762	106
Option 3 (50% To Survivor)	2,477,635	58
Total	10,448,138	253
Survivor Beneficiary of Deceased Retired Member	853,348	28
Total Age and Service Pensions	**$11,937,208**	**308**
Casualty Pensions		
Duty Disability	$ 222,331	8
Non-Duty Disability	105,160	7
Survivor Beneficiary of Deceased Retired Member	37,063	2
Duty Death	11,111	1
Non-Duty Death	-	0
Total Casualty Pensions	**375,665**	**18**
Total Pensions Being Paid	**$12,312,873**	**326**

Includes only members that retired from WCAA after September 2002.

Vested Former Members September 30, 2023
Tabulated by Attained Age Groups

Attained Ages	No.	Estimated Annual Allowances
40-44	1	$ 6,047
45-49	1	12,547
50-54	3	29,746
55-59	1	12,368
60-64	4	88,965
Totals	**10**	**$ 149,673**

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

Active Members September 30, 2023

Plan	No.	Valuation Payroll	Average Pay	Average Age	Average Service
				(in years)	
Defined Benefit Plan 2					
Non-Public Safety	2	$ 131,462	**$ 65,731**	48.6	25.2
Public Safety	2	185,007	92,504	50.8	22.3
Total	4	316,469	79,117	49.7	23.8
Hybrid Plan 5*					
Non-Public Safety	116	12,666,057	109,190	52.7	20.5
Public Safety	74	8,308,445	112,276	47.1	19.3
Total	190	20,974,502	110,392	50.5	20.0
Defined Benefit Sub-total	194	21,290,971	109,747	50.5	20.1
Defined Contribution Plan 4	416	39,555,261	95,085	44.3	9.1
Total	**610**	**$60,846,232**	**$ 99,748**	**46.3**	**12.6**

* *Includes Plan 5A and Plan 5B members.*

Defined Benefit Plan 2
Active Members September 30, 2023
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
40-44					1			1	$ 71,865
45-49					1			1	90,252
50-54					1	1		2	154,352
Totals					**3**	**1**		**4**	**$ 316,469**

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

Age:	49.7	years
Service:	23.8	years
Annual Pay:	$79,117	

* *Includes purchased service, if any.*

Defined Contribution Plan 4
Active Members September 30, 2023
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	12							12	$ 792,476
25-29	32	15						47	3,570,580
30-34	35	28						63	5,232,188
35-39	19	20	1	1				41	3,433,966
40-44	19	24	2	2	1	1		49	5,393,870
45-49	16	11	2	2	9	9		49	5,301,074
50-54	18	12	1	1	4	10	4	50	4,576,645
55-59	17	11		2	9	6	5	50	4,991,319
60	1	1			1		2	5	610,546
61	1	1		2	3	2	2	11	1,092,812
62	2		2	1	1	1	1	8	981,197
63	3	2	1		1	1		8	866,839
64	1	4			1	1	1	8	755,240
65	1	2						3	263,035
66	1	1					2	4	363,760
67									
68	1				1		1	3	614,705
69	1							1	130,186
70	1					1		2	338,664
71									
72				1				1	111,206
73	1							1	134,953
Totals	**182**	**132**	**9**	**12**	**31**	**32**	**18**	**416**	**$39,555,261**

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

Age:	44.3	years
Service:	9.1	years
Annual Pay:	$95,085	

Hybrid Plan 5, Plan 5A, and Plan 5B
Active Members September 30, 2023
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
25-29	2	2						4	$ 455,507
30-34		6	1					7	701,407
35-39		3	1	5				9	937,810
40-44	1	2	4	17	5			29	2,941,426
45-49		2	5	17	11	3		38	3,963,293
50-54			2	8	6	16	7	39	5,051,307
55-59				9	8	6	6	29	3,200,571
60				1	1	2	1	5	505,477
61				3	2	1		6	695,750
62			1	2	4		1	8	753,614
63				3		1	1	5	493,250
64				1				1	70,912
65				2			1	3	429,370
66				2			1	3	334,711
67				1				1	67,872
68									
69				2				2	298,159
70							1	1	74,066
Totals	**3**	**15**	**14**	**73**	**37**	**29**	**19**	**190**	**$20,974,502**

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

Age:	50.5	years
Service:	20.0	years
Annual Pay:	$110,392	

* *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 by-product 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:

$$\mathbf{B = C + I - E}$$

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 . . .

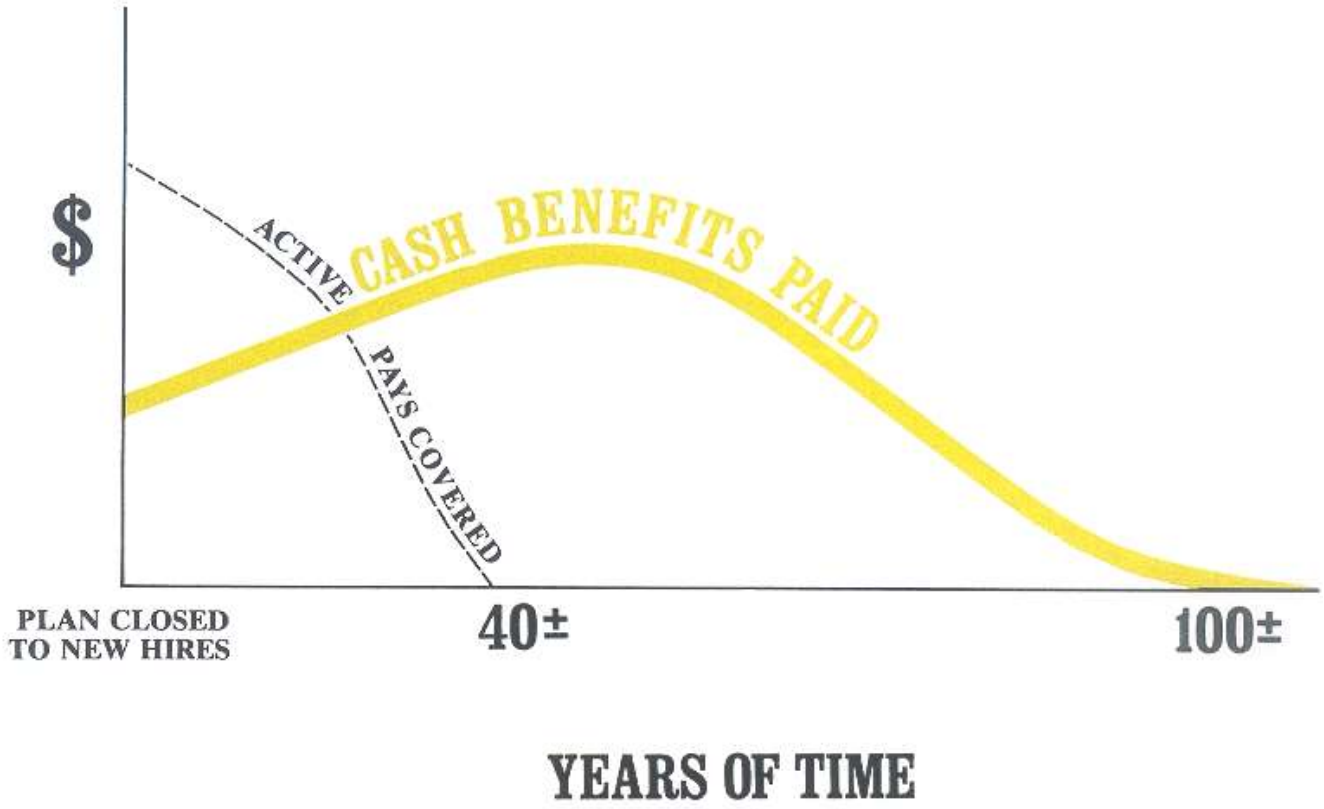
Investment earnings on contributions received and not required for immediate cash payments of benefits

. . . 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.

A CLOSED PENSION PLAN



A plan becomes closed when no new hires are admitted to active membership. The persons covered by the plan at the time of closing continue their normal activities and continue to be covered by the plan, until the last survivor dies.

CASH BENEFITS LINE. After a pension plan becomes closed, the usual pattern is for cash benefits to continue to increase for decades of time. Eventually the cash benefits will peak, and then gradually decrease over more decades of time, ultimately to zero. The last cash benefit is likely to occur a century after the time the plan is closed.

The precise amounts of cash benefits cannot be known now, and must be estimated by assumptions of future experiences in a variety of financial risk areas.

Actuarial Valuation Process

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. All assumptions are based on future expectations, not market measures.

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. The real rate of return over price inflation would be different.

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
	2023	2022	2021	2020	2019	Average
Recognized Rate of Return (Funding Value)	5.5%	3.9%	9.6%	6.1%	7.6%	6.5%

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 13.15%. Select merit and longevity rates follow:

Merit and Longevity Pay Increases			
Non-Public Safety		**Public Safety**	
Age	**Increase**	**Service**	**Increase**
20	4.35%	5	7.51%
25	2.85%	10	1.80%
30	2.40%	15	1.12%
35	1.75%	20	3.55%
40	1.50%	25	0.33%
45	1.35%	30	0.00%
50	1.00%	35	0.00%
55	0.63%	40 & Over	0.00%
60	0.23%		
65 & Over	0.00%		
Ref:	**568**	**Ref:**	**926**

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, and were first used in 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	18%
21	9.50%	1 - 2	19%	21	4.95%	1 - 2	18%
22	9.50%	2 - 3	16%	22	4.95%	2 - 3	9%
23	9.45%	3 - 4	15%	23	4.91%	3 - 4	7%
24	9.40%	4 - 5	13%	24	4.86%	4 - 5	6%
25	9.35%			25	4.82%		
30	6.65%			30	3.54%		
35	5.20%			35	2.68%		
40	5.10%			40	2.57%		
45	3.69%			45	2.33%		
50	3.07%			50	1.87%		
55	2.59%			55	1.32%		
60 & Over	0.00%			60 & Over	0.00%		
Ref:	**1566**		**1052**	**Ref:**	**1230 x 110%**		**760**

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		
Age	Non-Public Safety	Public Safety
55	15%	18%
56	10%	13%
57	20%	13%
58	20%	13%
59	25%	13%
60	25%	13%
61	35%	24%
62	35%	39%
63	35%	21%
64	50%	27%
65	35%	27%
66	20%	27%
67	30%	27%
68	30%	30%
69	90%	30%
70	100%	100%
Ref:	3226	3227
anchor	55	55

	Normal Retirement	
Service	Non-Public Safety	Public Safety
30	25%	30%
31	20%	30%
32	10%	10%
33	25%	20%
34	20%	40%
35	20%	50%
36	30%	25%
37	15%	25%
38	15%	25%
39	10%	25%
40	50%	100%
Ref:	3230	3228
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.

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.

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 2023	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	$164.38	$168.09	0.1241%	0.0674%	40.12	43.08
50	157.85	162.50	0.2946%	0.2170%	35.02	37.91
55	149.99	155.82	0.4333%	0.3035%	30.14	32.96
60	140.17	147.17	0.6636%	0.4224%	25.44	28.11
65	128.15	136.08	0.9663%	0.6164%	20.97	23.41
70	113.52	122.17	1.4892%	0.9865%	16.74	18.90
75	96.48	105.48	2.5058%	1.7513%	12.85	14.69
80	77.90	86.71	4.5046%	3.2435%	9.43	10.92
85	59.76	67.45	8.2937%	6.1663%	6.64	7.75
90	44.37	50.23	14.4392%	11.5525%	4.60	5.34
95	32.83	37.11	22.5637%	18.8890%	3.22	3.71
Ref: Projection	2705 x 1.05 964	2706 x 1.05 965				

90% of pre-retirement deaths are assumed to be non-duty related and the remaining 10% are assumed to be duty related.

Miscellaneous and Technical Assumptions
September 30, 2023

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 ending on the valuation date.
Decrement Timing:	Decrements are assumed to occur mid-year.
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:	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: Airport Plans One, 5%; Airport Plans Two and Five, 2%. 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 plan's pop-up provision.
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 1.70% of payroll was included in the normal cost for administrative expenses. This assumption was first used for the September 30, 2021 valuation.
Interest on Member Contributions:	Contribution balances are credited with interest annually in an amount determined by the retirement commission. For the September 30, 2023 valuation, the assumed crediting rate is 0.75% (the amount credited to member balances starting October 1, 2019).

Miscellaneous and Technical Assumptions
September 30, 2023

Limitations and Adjustments to Data

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

- We do not have complete benefit data for many members that retired prior to September 30, 2023 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.
- For the September 30, 2023 valuation, one member on the deferred data listing over age 65 was not valued due to already being on the retired member data listing.

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. Benefit service

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:

	2023	2022	2021	2020	2019
Ratio of the market value of assets to total payroll	6.96	6.52	7.54	5.25	4.71
Ratio of actuarial accrued liability to payroll	9.23	8.97	8.54	6.97	6.21
Ratio of actives to retirees and beneficiaries	0.60	0.68	0.81	1.02	1.26
Ratio of net cash flow to market value of assets	-3.7%	-3.1%	-3.3%	-1.6%	0.2%
Duration of present value of future benefits	11.56	11.64	11.77	11.71	11.99

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	66 %	0.57	1.92	3.29	5.03
2015	67 %	0.55	1.58	3.42	5.09
2016	68 %	0.54	1.63	3.66	5.35
2017	73 %	0.55	1.68	4.18	5.76
2018	74 %	0.55	1.66	4.40	5.97
2019	76 %	0.57	1.41	4.71	6.21
2020	75 %	0.61	1.44	5.25	6.97
2021	88 %	0.67	1.66	7.54	8.54
2022	73 %	0.68	1.89	6.52	8.97
2023	75 %	0.68	1.97	6.96	9.23

Low-Default-Risk Obligation Measure

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> "The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan**. The calculation and disclosure of this additional measure **is not intended to suggest that this is the "right" liability** measure for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.**

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the System is to finance each member's retirement benefits. To fulfill this objective, the discount rate that is used to value the accrued liabilities is set equal to the **expected return** on the System's diversified portfolio of assets (referred to sometimes as the investment return assumption). For the System, the investment return assumption is 6.75%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. Examples of discount rates that may meet these requirements include, but are not limited to, the following:

- U.S. Treasury yields (e.g., Treasury Yield Curve Spot Rates (end of month));
- Rates implicit in settlement of pension obligations including payment of lump sums and purchases of annuities from insurance companies (e.g., FTSE Pension Liability Index – Short (FTSE) discount rate); and
- Yields on corporate or tax-exempt general obligation municipal bonds that receive one of the two highest ratings given by a recognized ratings agency.

The LDROM results presented in this report are based on the entry age normal cost method and the September 30, 2023 FTSE discount rate of 5.61%. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

Presented below are the actuarial accrued liability under the Valuation AAL (6.75%) discount rate and the Low-Default-Risk discount rate as of September 30, 2023:

Type of member	Valuation AAL	LDROM
Retirees	$ 134,312,738	$ 148,424,155
Deferreds	1,069,530	1,244,106
Actives	61,051,323	71,759,339
Totals	**$ 196,433,591**	**$ 221,427,600**

The difference between the two measures (Valuation AAL and Low-Default-Risk) is one illustration of the savings the sponsor anticipates by taking on the risk in a diversified portfolio.

Low-Default-Risk Obligation Measure

Commentary Regarding the LDROM

Some ways in which the LDROM can assist the Board of Trustees in a decision-making process include:

(1) It provides information to potentially allow for better risk management for the System;
(2) It places the appropriateness of potential employer contribution rate reductions or benefit enhancements in a better context; and
(3) It provides more complete information regarding the benefit security of the membership's benefits earned as of the measurement date.

Potentially Allows for Better Risk Management: A very useful risk metric to exhibit potential contribution rate volatility (or amortization period volatility for fixed rate plans) is the ratio of assets to payroll or AAL to payroll. How could we reduce that potential contribution rate volatility (or amortization period volatility for fixed rate plans)? The LDROM and liability driven investing (LDI) are closely related concepts.

Other than reducing benefits, all other things being equal, the only way to reduce that volatility is to immunize (i.e., LDI) a portion of the System's liability. This does not mean that the System needs to immunize all of the liability. For example, if they could immunize half of it, they could reduce the contribution rate volatility in half. This would require the actuary to use a cash flow matching method to value that portion of the liabilities. This means that the actuary would not use the System's investment return assumption for this portion of the liability, but the yield curve resulting from the fixed income portfolio that is being used to immunize the liability. The value of the assets (i.e., fixed income portfolio) and the value of the immunized liability would move in tandem with any changes (up or down) in future interest rates. The result being that the immunized portion of the System's liability would reduce the potential of producing new unfunded actuarial accrued liabilities. However, the fixed income portfolio would still have the minor potential for credit default risk.

Places the Appropriateness of Potential Employer Contribution Rate Reductions or Benefit Enhancements in a Better Context: Many PERS have adopted a funding policy. Many funding policies already take into account the System's funded ratio (based upon the AAL) when considering whether to allow for benefit enhancements or contribution rate reductions. For example, a System may not allow for a benefit enhancement if the funded ratio does not exceed a certain threshold. Similarly, a System may not allow for an employer contribution rate reduction in some circumstances. For example, a reduction to the employer normal cost contribution may not be allowed until the System reaches a funded ratio of 120%. The WCERS' Actuarial Funding Policy (as shown in the remainder of this section) already accounts for several such risk management and funding requirement criteria. Given the fact that most criteria are based upon the expectation of earning the investment return assumption, a System may want to consider extending these criteria to a funded ratio based upon the LDROM in addition to the AAL.

Provides more Complete Information Regarding the Benefit Security of the Membership's Benefits Earned as of the Measurement Date: Too often a high funded ratio (i.e., 100% funded) on an AAL basis is interpreted as benefit security for the participants. The fact that this funded ratio is based upon an expected measure is many times overlooked. If the AAL and LDROM measures are relatively close, then the System at least has the opportunity to make benefits payable in the future more secure.

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 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.
- 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.

(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 calculated 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:

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. 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.

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."