Charter Township of Ypsilanti Police and Firefighter's Retirement System

December 31, 2023

Actuarial Valuation Report

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nyhart part of FuturePlan by Ascensus

Actuarial Certification

At the request of the plan sponsor, this report summarizes the Charter Township of Ypsilanti Police and Firefighter's Retirement System as of December 31, 2023. The purpose of this report is to communicate the following results of the valuation:

- Funded Status;
- and Determine Recommended Contribution;

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census and asset information has been provided to us by the employer. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

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

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

Actuarial Certification

In preparing these results, Nyhart used ProVal valuation software designed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing pension valuations. We coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any weaknesses or limitations in the software and have determined it is appropriate for performing this valuation.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart

Derek Schmitt, FSA, EA, MAAA

Taylor Clary, ASA, EA

May 10, 2024
Date

Executive Summary

The actuarial report provides the plan sponsor with several ways to measure the funded status of the pension plan. The following detail is included in the report:

- Recommended Contribution
- Asset Performance
- Plan Demographics

This report is filled with actuarial terminology. However, the ultimate objective of the valuation is to provide a rational method of funding the plan. It is necessary to fund the benefit promised by the employer in a manner that is logical and employer friendly, yet safeguards the participants' interest. The actuarially derived contribution, however, is not the true cost of the pension plan. The true cost is illustrated by the following formula:

Ultimate Pension Cost = Benefits Paid - Investment Income + Plan Expenses

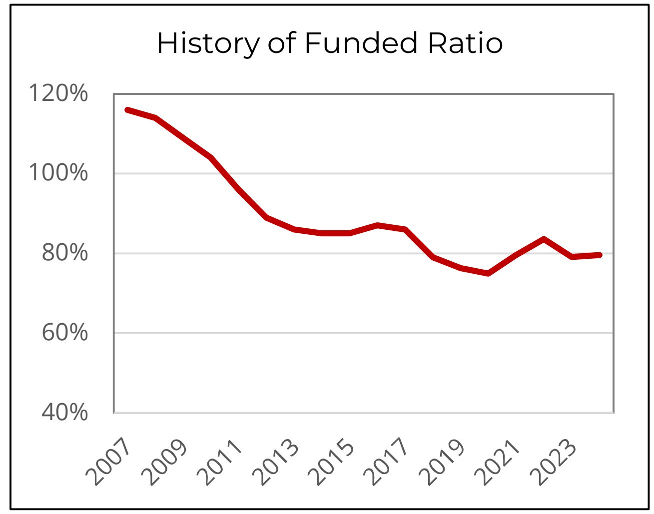
While the plan's liability and normal cost determine the current contribution recommendations, the true cost is controlled only by the "defined" benefit and investment income generated by the underlying assets. The actuarial process only controls the timing of costs.

We suggest that a plan sponsor treat the actuarial report as you would treat a scorecard. It is simply a measure of progress toward the ultimate goal of paying all pension benefits when participants retire.

Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	December 31, 2022	December 31, 2023
Funded Status Measures		
Accrued Liability	$39,131,031	$39,138,880
Actuarial Value of Assets	$30,957,733	$31,160,376
Unfunded Actuarial Accrued Liability (UAAL)	$8,173,298	$7,978,504
Funded Percentage (AVA)	79.11%	79.61%
Funded Percentage (MVA)	70.92%	74.82%
Cost Measures		
Recommended Contribution for Next Fiscal Year	$1,180,082	$1,176,795
Recommended Contribution (as a percentage of payroll)	59.76%	62.43%
Asset Performance		
Market Value of Assets (MVA)	$27,752,475	$29,284,006
Actuarial Value of Assets (AVA)	$30,957,733	$31,160,376
Actuarial Value/Market Value	111.5%	106.4%
Market Value Rate of Return	(12.60%)	11.58%
Actuarial Value Rate of Return	4.54%	5.95%
Participant Information		
Active Participants	20	20
Terminated Vested Participants	0	0
Retirees and Beneficiaries	62	60
DROP Participants	3	7
Total	85	87
Expected Payroll Current Fiscal Year	$1,917,232	$1,829,984
Expected Payroll Next Fiscal Year	$1,974,749	$1,884,884



Changes since Prior Valuation and Key Notes

The expense load applied to the Normal Cost was decreased to $25,000 from $30,000 to better reflect anticipated administrative expenses to be paid from the trust.

Historical Valuation Summary

	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023
Funding					
Accrued Liability	$37,705,326	$37,396,930	$37,495,148	$39,131,031	$39,138,880
Actuarial Value of Assets	$28,271,231	$29,763,124	$31,333,022	$30,957,733	$31,160,376
Unfunded Actuarial Accrued Liability	$9,434,095	$7,633,806	$6,162,126	$8,173,298	$7,978,504
Funded Percentage	74.98%	79.59%	83.57%	79.11%	79.61%
Normal Cost (NC)	$410,952	$432,245	$425,000	$510,277	$514,052
Actual Contribution	$1,191,035	$984,011	$876,661	June 2024	June 2025
Recommended Contribution	$1,074,669	$975,040	$876,661	$1,180,082	$1,176,795
Interest Rate	6.50%	6.50%	6.50%	6.50%	6.50%
Rate of Return					
Actuarial Value of Assets	5.20%	7.51%	8.90%	4,54%	5.95%
Market Value of Assets	16.64%	10.57%	10.95%	(12.60%)	11.58%
Demographic Information					
Active Participants	21	21	21	20	20
Terminated Vested Participants	0	0	0	0	0
Retired Participants	45	42	38	42	39
Beneficiaries	15	17	20	20	21
Disabled Participants	0	0	0	0	0
DROP Participants	6	5	6	3	7
Total Participants	87	85	85	85	87
Covered Payroll (prior year)	$1,594,043	$1,676,175	$1,671,273	$1,861,390	$1,776,684
Average Covered Pay	$75,907	$79,818	$79,584	$93,070	$88,834

Identification of Risks

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the Charter Township of Ypsilanti Police and Firefighter's Retirement System. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Method to Assess Risk
Investment Return	Scenario Testing; Asset Liability Study
Participant Longevity	Projections and Contribution Strategy
Early Retirement	Scenario Testing; Review population and retirement rates
Salary Growth	Review salary history and future budgets; scenario testing

Plan Maturity Measures - December 31, 2023

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the Charter Township of Ypsilanti Police and Firefighter's Retirement System falls in its life-cycle.

Duration of Liabilities: 9.7

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 23.0%

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 6.2%

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 8.7%

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

Assets and Liabilities

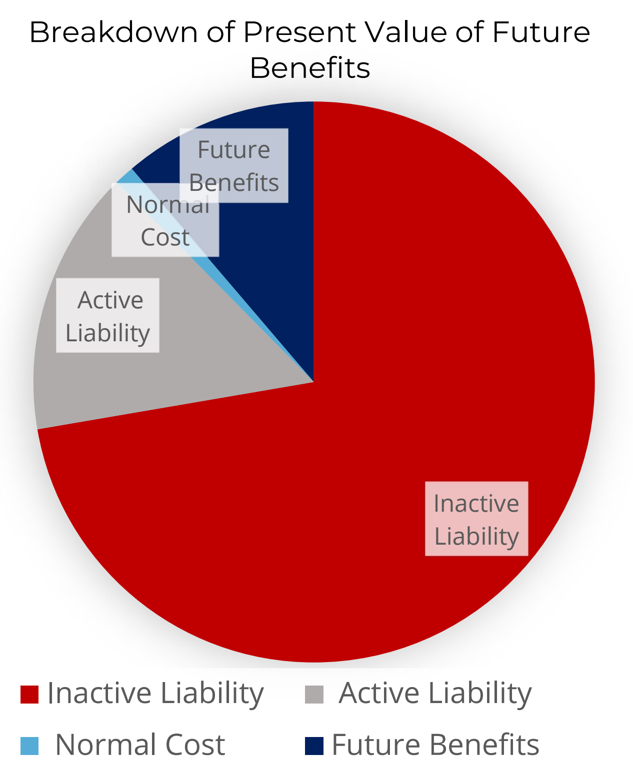
The basic building blocks of the actuarial report are contained in this section. These include:

- Actuarial Accrued Liabilities
- Asset Information
- Summary of Contributions

Present Value of Future Benefits

The Present Value of Future Benefits represents the future benefits payable to the existing participants.

	December 31, 2023
Present Value of Future Benefits	
Active participants	
Retirement	$11,435,224
Disability	509,136
Death	188,662
Termination	209,365
Refund of contributions	29,952
Total active	$12,372,339
Inactive participants	
Retired participants	$29,249,129
Beneficiaries	3,054,242
Disabled participants	0
Terminated vested participants	0
Total inactive	$32,303,371
Total	$44,675,710
Present value of future payrolls	$21,234,547



Actuarial Accrued Liability

The Actuarial Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions.

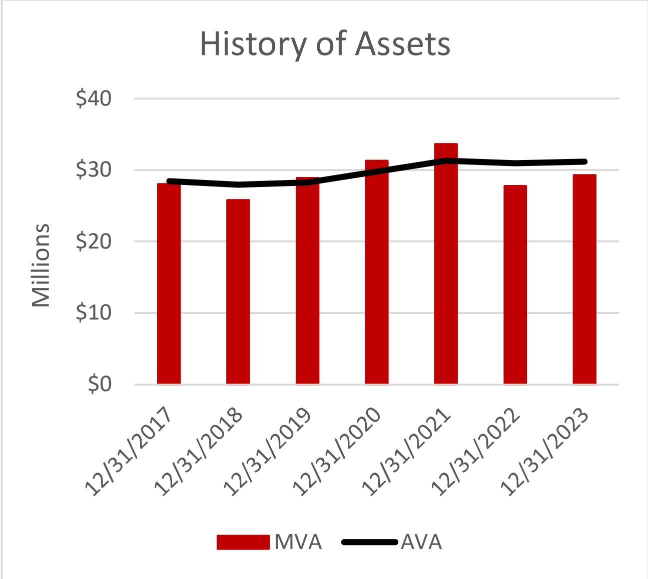
	December 31, 2023
Funding Liabilities – Entry Age Normal as Percent of Pay	
Active participants	
Retirement	$6,543,887
Disability	198,673
Death	45,990
Termination	76,997
Refund of contributions	(30,038)
Total Active	$6,835,509
Inactive participants	
Retired participants	$29,249,129
Beneficiaries	3,054,242
Disabled participants	0
Terminated vested participants	0
Total Inactive	$32,303,371
Total	$39,138,880
Normal Cost	$514,052
Interest Rate	6.50%

Assets and Liabilities

Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	December 31, 2023
Market Value Reconciliation	
Market value of assets, beginning of prior year	$27,752,475
Contributions	
Employer contributions	876,661
Employee contributions	111,966
Total	$988,627
Investment income	$3,122,689
Administrative Expenses	$(25,813)
Benefit payments	$(2,553,972)
Market value of assets, beginning of current year	$29,284,006
Return on Market Value	11.58%
Market value of assets available for pension benefits	$29,284,006
Actuarial Value of Assets	
Value at beginning of current year	$31,160,376
Assets Reserves	
Reserves for	
Employees' contributions	$835,567
Employer contributions	(3,854,932)
Retired benefit payments	32,303,371
Total reserves at market	$29,284,006
Funding value adjustment	$1,876,370
Actuarial value of assets	$31,160,376



Monitoring the pension plan's investment performance is crucial to eliminating surprises.

Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements.

	December 31, 2023
1. Expected Investment Income	
(a) Market value of assets, beginning of prior year	$27,752,475
(b) Employee Contributions	111,966
(c) Employer Contributions	876,661
(d) Refund of Member Contributions	0
(e) Benefit payments	2,553,972
(f) Administrative Expenses	25,813
(g) Expected Investment Income – end of year [6.5% x (a) + 6.5% x (1/2) x {(b)+(c)-(d)-(e)-(f)}]	$1,752,198
2. Market value of Investment Income, beginning of current year	$3,122,689
3. Gain/(Loss) on market value (2)-(1g)	1,370,491
4. Phased-In Recognition of Investment Income	
(a) Current Year Phase in of gain/(loss) (1,370,491 x .8)	1,096,393
(b) First Prior Year ((6,256,173) x .6)	(3,753,704)
(c) Second Prior Year (1,370,983 x .4)	548,393
(d) Third Prior Year (1,162,740 x .2)	232,548
(e) Total	(1,876,370)
5. Expected market value of assets, beginning of current year [(1a)+(1b)+(1c)-(1d)-(1e)-(1f)+(1g))]	$27,913,515
6. Final market value of assets [(1a)+(1b)+(1c)-(1d)-(1e)-(1f)+(2))]	$29,284,006
7. Final actuarial value of assets 6-(4e)	$31,160,376

Reserve Allocation

In financing the Actuarial Accrued Liabilities, the Valuation Assets were distributed as follows:

Reserves for	Active and Deferred Vested Members	Retired Members	Contingency Reserve	Total
Employees' Contributions	$835,567			$835,567
Employer Contributions	(1,978,562)			(1,978,562)
Retired Benefit Payments		$32,303,371		32,303,371
Total	$(1,142,995)	$32,303,371	None	$31,160,376

The Unfunded Actuarial Accrued Liabilities were distributed as follows:

Reserves for	Active and Deferred Vested Members	Retired Members	Total
Computed Actuarial Accrued Liabilities	$6,835,509	$32,303,371	$39,138,880
Applied Assets	(1,142,995)	32,303,371	31,160,376
Unfunded Actuarial Accrued Liabilities	$7,978,504	$0	$7,978,504

Funding Results

The basic building blocks of the actuarial report are contained in this section. These include:

- Reconciliation of Gain/Loss
- Recommended Contribution

Reconciliation of Gain/Loss

	December 31, 2023
Liability (Gain)/Loss	
1. Actuarial liability, beginning of prior year	$39,131,031
2. Normal cost for prior year	510,277
3. Benefit payments	(2,553,972)
4. Expected Interest	2,493,681
5. Change in Assumptions	0
6. Change in Plan Provisions	0
7. Expected actuarial liability, beginning of current year	39,581,017
8. Actual actuarial liability	39,138,880
9. Liability (Gain)/Loss, (8) – (7)	$(442,137)
Asset Gain/(Loss)	
10. Actuarial value of assets, beginning of prior year	$30,957,733
11. Contributions	988,627
12. Benefit payments	(2,553,972)
13. Administrative Expenses	(25,813)
14. Expected Investment return	1,960,540
15. Expected actuarial value of assets, beginning of current year	$31,327,115
16. Actual actuarial value of assets, beginning of current year	31,160,376
17. Asset (Gain)/Loss, (15) – (16)	$166,739
Total (Gain)/ Loss, (9) + (17)	$(275,398)

Funding Results

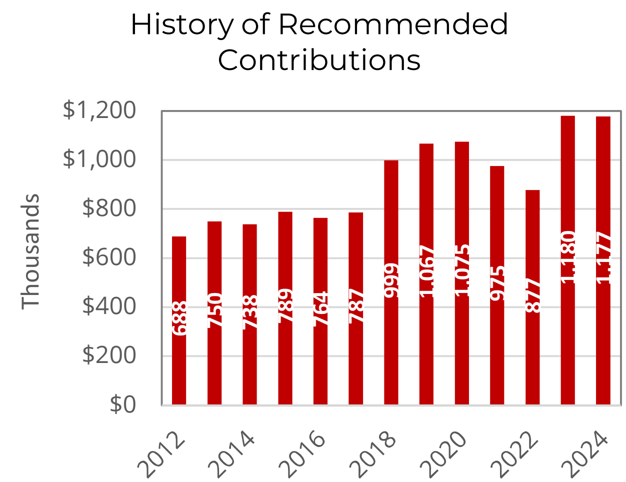
Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)

		December 31, 2023
1.	UAAL beginning of prior year	$8,173,298
2.	Normal Cost for prior year	510,277
3.	Administrative Expenses	25,813
4.	Employer Contributions	(876,661)
5.	Non-Employer Contributions	(111,966)
6.	Interest	533,141
7.	Expected UAAL, beginning of current year	$8,253,902
8.	Changes due to:	
	(a) Amendments	0
	(b) Assumptions	0
	(c) Funding Methods	0
	(d) (Gain)/Loss	(275,398)
	(e) Total	$(275,398)
9.	UAAL beginning of current year	$7,978,504

Development of Recommended Contribution

The recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws.

Normal Cost	
1. Normal Cost	
(a) Total Normal Cost	$514,052
(b) Expected participant contributions discounted to December 31	(109,191)
(c) Expected Administrative Expenses discounted to December 31	24,225
(d) Net normal cost as of December 31, 2023	$429,086
As a percentage of expected 2024 payroll (w/o DROP)	23.45%
(e) Net normal cost as of July 1, 2025	$471,595
Amortization of Unrecognized Actuarial Accrued Liability (UAAL)	
1. Calculation of UAAL	
(a) Entry Age Normal Accrued Liability	$39,138,880
(b) Actuarial Value of Assets	31,160,376
(c) UAAL as of December 31, 2023	$7,978,504
2. Anticipated 7/1/2024 UAAL Contribution discounted to December 31	683,622
3. Remaining UAAL to Amortize	7,294,882
4. Amortization Period	14
5. UAAL Amortization as of December 31, 2023	$641,635
6. UAAL Amortization as of July 1, 2025	$705,200
2025 Contribution	
1. Net Normal Cost	$471,595
2. UAAL Amortization	705,200
3. Total Contribution Payable on July 1, 2025	$1,176,795
As a percentage of expected 2025 payroll (w/o DROP)	62.43%
As a percentage of expected 2025 payroll (with DROP)	47.05%



Michigan PA 202 Reporting Requirements

	December 31, 2023	
Funding Assumptions	**Plan Assumptions**	**State Treasury Uniform Assumptions**
Funded Ratio		
Interest Rate	6.50%	6.50%
Mortality	PubS-2010 Mortality with SOA Scale MP-21	No change
Accrued Liability	$39,138,880	$39,138,880
Market Value of Assets	$29,284,006	$29,284,006
Unfunded Accrued Liability, MVA Basis	$9,854,874	$9,854,874
Funded Percentage (MVA)	**74.82%**	**74.82%**
Underfunded Status	Not Underfunded	Not Underfunded
Actuarially Determined Contribution	$1,176,675	$1,176,795

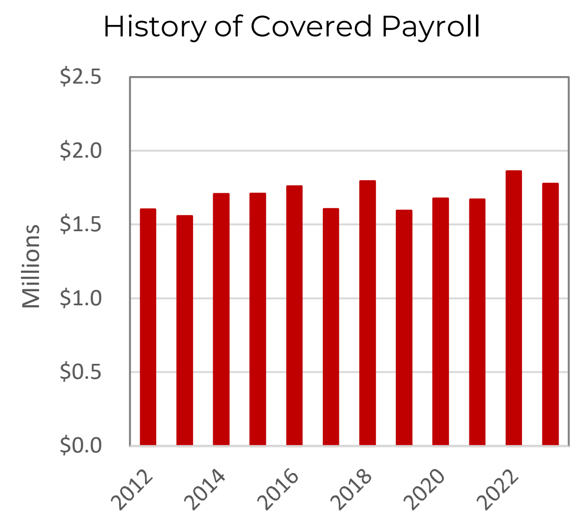
Data, Assumptions, and Plan Provisions

- Demographic Information
- Plan Provisions
- Assumptions and Methods

Demographic Information

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	December 31, 2022	December 31, 2023
Participant Counts		
Active Participants	20	20
Retired Participants	42	39
Beneficiaries	20	21
Disabled Participants	0	0
Terminated Vested Participants	0	0
DROP Participants	3	7
Total Participants	85	87
Active Participant Demographics (Ongoing)		
Average Age	41.8	39.2
Average Service	11.7	9.4
Average Compensation	$93,070	$88,834
Total Covered Payroll (prior year)	$1,861,390	$1,776,684
Total Payroll (prior year)	$1,861,390	$1,776,684



Demographic Information (continued)

	December 31, 2022	December 31, 2023
Retiree Statistics		
Average Age	68.6	69.7
Average Monthly Benefit	$4,071	$4,069
Beneficiary Statistics		
Average Age	76.1	74.9
Average Monthly Benefit	$1,282	$1,333
Disabled Participant Statistics		
Average Age	N/A	N/A
Average Monthly Benefit	N/A	N/A
Terminated Vested Participant Statistics		
Average Age	N/A	N/A
Average Monthly Benefit	N/A	N/A
DROP Participant Statistics		
Average Age	56.0	56.5
Average Monthly Benefit	$6,145	$6,252

Monitoring the average age of the population is important due to the relationship of actuarial cost to age. Generally speaking, an older population generates a higher actuarial cost.

Changes in the ratio of active to retired participants can be a significant driver of costs in a volatile asset market.

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	20	0	0	45	20	85
Active						
To Retired	(3)			3		
To Terminated Non-Vested (return of employee contributions)						
Terminated Vested						
To Retired						
Retired						
To Survivor (Data Correction)				(1)	1	
To Death				(1)		(1)
Survivor						
To Death					(1)	(1)
Additions	3				1	4
Departures						
Current Year	20	0	0	46	21	87

Active Participant Schedule

Active participant information grouped based on age and service.

	Years of Service									
Age Group	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	2									2
25 to 29	1									1
30 to 34	1	2								3
35 to 39		6								6
40 to 44			1		1					2
45 to 49		1			2					3
50 to 54	1				1					2
55 to 59			1							1
60 to 64										
65 to 69										
70 & up										
Total	5	9	2		4					20

Plan Status

Act 345 of the Public Acts of 1937 and most recently amended for Township of Ypsilanti 8/8/2018.

Eligibility for Participation

Any full time permanent firefighters and police officers employed by the Township. The Plan is open to new hires for Police and Fire.

Accrual of Benefits

A participant shall accumulate a benefit payable at normal retirement date based on credited service as of the date of determination and the accrual rate associated with their classification.

Benefits

Normal Retirement

Eligibility	25 or more years of service or age 60 regardless of service
Benefit	

Employees hired before 1/1/2014:

3.00% of Final Average Compensation times credited service (up to 25 years) plus 1% times Final Average Compensation times credited service in excess of 25 years.

Employees hired on or after 1/1/2014:

2.35% of Final Average Compensation times credited service (up to 25 years) plus 1% times Final Average Compensation times credited service in excess of 25 years.

Death after Retirement Survivor's Pension

Eligibility	Payable to surviving spouse of retired member receiving a single life annuity effective July 1, 1975 or later
Benefit	60% of the single life annuity the late retiree was receiving

Death before Retirement In Line of Duty

Eligibility	Expiration of workers' compensation to the survivors of a member who died in the line of duty
Benefit	Same amount paid by workers' compensation

Death before Retirement Not In Line of Duty

Eligibility	20 years of service
Benefit	Married participant: spouse will receive single life annuity actuarially reduced in accordance with Option I elected.

Termination Benefit

Eligibility	10 years of service
Benefit	Accrued retirement benefit payable at participant's normal retirement date. If the participant terminates prior to the service requirement, a refund of the accumulated contributions with interest will be issued.

Disability Benefit In Line of Duty

Eligibility	Immediately upon total and permanent disability
Benefit	50% of Final Average Compensation up to age 55, then Normal Retirement Benefit with service credited from date of disability to age 55

Disability Benefit Not In Line of Duty

Eligibility	5 years of service and deemed to be totally and permanently disabled
Benefit	1.5% times Final Average Compensation times credited service
	As of January 1, 2016 – At what would have been 25 years of service for the retiree, the pension will be recalculated based on the multiplier rate that was in effect at the time of medical retirement.

Deferred Retirement Option Plan (DROP)

Eligibility

Employees hired before 1/1/2014 may participate in the DROP once eligible for retirement.

Benefit

The participant's accrued benefit at the date of entering the DROP, accumulated with interest each year based on the Funded Ratio received within the most recent Annual Pension Valuation.

Funded Ratio	Interest Earned
95% and above	5.0%
85% - 94%	4.0%
75% - 84%	3.0%
74% and below	2.0%

The maximum period for participation in the DROP is 5 years.

Compensation

Compensation includes base rate of pay, overtime pay, longevity pay, holiday pay, sick leave payments, and unused vacation.

Final Average Compensation (FAC)

Final Average Compensation shall be calculated on the three (3) years of highest annual Compensation received by an employee during the ten (10) years of service immediately preceding retirement.

Members shall have the option of having up to fourteen (14) unused vacation days paid out to them and applied and used toward the FAC.

Credited Service

For Vesting and Benefit Accrual
All years and completed months of continuous service with the Township of Ypsilanti.

Employee Contributions

6% of Compensation

Payment Forms

Normal Form
Single Participants: Single Life Annuity
Married Participants: Joint and 60% Survivor Annuity

Actuarial Equivalence

6.50% and Pub-2010 mortality projected generationally using scale used in the prior year actuarial valuation, blended 90% male and 10% female

Plan Provisions Not Included

We are not aware of any plan provisions not included in the valuation

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report.

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the actuary. Prescribed assumptions are based on the requirements of the relevant law, the Internal Revenue Code, and applicable regulation.

Valuation Date

December 31, 2023

Participant and Asset Information Collected as of

December 31, 2023

Cost Method

Individual Entry Age Cost Method – Level percent of pay

Amortization Method

14 year closed level percent of payroll (3.00%) amortization of Unfunded Actuarial Accrued Liability

Asset Valuation Method

Smoothed Value of Assets. Gains or losses on the Market Value of Assets are recognized over five years.

Interest Rates *(CO)*

6.50% net of investment expenses
The interest rate is the long-term rate of return on assets. This assumption is supported by the investment mix of the plan assets and long-term capital market return assumptions.

Annual Pay Increases *(FE)*

Pay increases follow the schedule below:
The annual pay increase reflects a general salary inflation assumption of 3.00% and a merit increase up to 7.00%. These assumptions are based on the 2023 experience study.

Service	Base Rate	Merit Rate
1	3.00%	7.00%
2	3.00%	7.00%
3	3.00%	6.00%
4	3.00%	6.00%
5	3.00%	6.00%
6+	3.00%	1.50%

The salary assumption also includes a 10% load on benefits to account for accrued vacation time and compensatory time late in one's career.

Expense Loading

$25,000 was added to contribution to cover anticipated administrative expenses.

Mortality Rates *(FE)*

Healthy

PubS-2010 Mortality with generational improvements projected beginning in 2010 based on the SOA Scale MP-21

Disabled

PubS-2010 Mortality with generational improvements projected beginning in 2010 based on the SOA Scale MP-21

As the plan is not large enough to have credible experience, mortality assumptions are set to reflect general population trends.

Marital Status and Ages *(FE)*

90% of Participants assumed to be married to spouse of the same age and elect 60% Joint and Survivor Annuity. 10% assumed to be single and elect Single Life Annuity.

Retirement Rates *(FE)*

Rates are based on years of service and date of hire.
100% of participants are assumed to retire at age 60 regardless of service.

Rates for participants hired before 1/1/2014.

Service	Rate
25-28 years	50%
29 years	60%
30+ years	100%

Rates for participants hired on or after 1/1/2014.

Service	Rate
25 years	60%
26-27 years	50%
28 years	70%
29 years	80%
30+ years	100%

Disability Rates *(FE)*

Rates are based on age and are assumed to be 0% during a participant's first 5 years of service. Sample rates after the first 5 years of service are below.

Age	Males	Females
20	0.07%	0.03%
25	0.09%	0.05%
30	0.10%	0.07%
35	0.14%	0.13%
40	0.21%	0.19%
45	0.32%	0.28%
50	0.52%	0.45%
55	0.92%	0.76%
60	1.53%	1.10%

Withdrawal Rates *(FE)*

Rates are based on age and service. Sample rates are below.

Age	Service	Rate
ALL	0	10.0%
ALL	1	7.0%
ALL	2	5.0%
ALL	3	4.0%
ALL	4	3.5%
25	5+	3.5%
30	5+	2.9%
35	5+	1.5%
40	5+	0.6%
45+	5+	0.5%

Retirement rates, Disability rates, and Withdrawal rates are based on the most recent experience study from 2017.

Duty-Related Deaths and Disabilities *(FE)*

70% of pre-retirement deaths and disabilities are assumed to be duty-related

FE indicates an assumption representing an estimate of future experience
MD indicates an assumption representing observations of estimates inherent in market data
CO indicates an assumption representing a combination of an estimate of future experience and observations of market data

Other Measurements

The actuarial report also shows the necessary items required for plan reporting and any state requirements.

- Low-Default-Risk Obligation Measure (LDROM)

Other Measurements

Low-Default-Risk Obligation Measure (LDROM)

For reports issued after February 15, 2023 the Plan's actuary is generally required to disclose liabilities under an alternative low-default-risk based discount rate. This LDROM liability measure represents the estimated asset value as of the measurement date the Plan would need in order to purchase a low-default-risk fixed income securities portfolio with durations that are reasonably consistent with the timing of benefits expected to be paid from the plan.

	December 31, 2023
LDROM liability	$ (45,442,381)
Market value of assets	$ 29,284,006
LDROM funded status	$ (16,158,375)

The LDROM liability measure is for informational purposes only. The plan sponsor has no requirements to contribute to the Plan to meet this threshold, and the funded status on this basis is not reported to any government agency or used for any restrictions.

If Plan assets are invested to earn in excess of a fixed income portfolio, a shortfall on this basis may not necessarily mean the security of participant benefits is at risk. If the plan is fully funded, or nearly fully funded, on the LDROM measure, the plan sponsor may want to consider reducing investment risk in order to offer greater benefit security and lower contribution volatility. We did not perform an analysis of assumption or provision changes resulting from a potential shift in investment policy due to the limited scope of our engagement.

The above LDROM liability measure applies a single effective discount rate of 5.04% which would produce approximately the same discounted cashflows as the FTSE Above Median Double-A Curve as of December 31, 2023. All other data, assumptions, methods and provisions are the same as those detailed in this report.