



# **GASB 74/75 ACTUARIAL VALUATION**

## **Fiscal Year Ending December 31, 2021**

# **CHARTER TOWNSHIP OF YPSILANTI FIRE OPEB PLAN**

### **CONTACT**

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**June 22, 2022**

**Javonna Neal**

**Charter Township of Ypsilanti Fire OPEB Plan  
7200 S Huron River Drive  
Ypsilanti, MI 48197**

This report summarizes the GASB actuarial valuation for the Charter Township of Ypsilanti Fire OPEB Plan 2021 fiscal year. To the best of our knowledge, the report presents a fair position of the funded status of the plan in accordance with GASB Statement No. 74 (Financial Reporting for Post-Employment Benefit Plans Other Than Pension Plans) and GASB Statement No. 75 (Accounting and Financial Reporting by Employers for Post-Employment Benefits Other Than Pensions). This report 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 information presented herein is based on the actuarial assumptions and substantive plan provisions summarized in this report and participant information furnished to us by the Plan Sponsor. We have reviewed the employee census provided by the Plan Sponsor for reasonableness when compared to the prior information provided but have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based. When relevant data may be missing, we may have made assumptions we feel are neutral or conservative to the purpose of the measurement. We are not aware of any significant issues with and have relied on the data provided.

The discount rate, other economic assumptions, and demographic assumptions have been selected by the Plan Sponsor with the concurrence of Nyhart. In our opinion, the actuarial assumptions are individually reasonable and in combination represent our estimate of anticipated experience of the Plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

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.

To our knowledge, there have been no significant events prior to the current year's measurement date or as of the date of this report that could materially affect the results contained herein.



Neither Nyhart nor any of its employees has any relationship with the plan or its sponsor that could impair or appear to impair the objectivity of this report. Our professional work is in full compliance with the American Academy of Actuaries "Code of Professional Conduct" Precept 7 regarding conflict of interest. The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

Should you have any questions please do not hesitate to contact us.

A handwritten signature in black ink that reads 'John Mallows'. The signature is written in a cursive, flowing style.

John Mallows, FSA, MAAA  
Actuary

# Executive Summary

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Summary of Results

Presented below is the summary of GASB 75 results for the fiscal year ending December 31, 2021 compared to the prior fiscal year as shown in the Township's Notes to Financial Statement.

	As of December 31, 2020	As of December 31, 2021
<b>Total OPEB Liability</b>	\$ 12,624,186	\$ 11,061,385
<b>Actuarial Value of Assets</b>	\$ (8,544,128)	\$ (9,412,021)
<b>Net OPEB Liability</b>	\$ 4,080,058	\$ 1,649,365
<b>Funded Ratio</b>	67.7%	85.1%

	FY 2020	FY 2021
<b>OPEB Expense</b>	\$ (36,315)	\$ (1,228,815)
<b>Annual Employer Contributions</b>	\$ 753,617	\$ 700,000
<b>Actuarially Determined Contribution</b>	\$ 698,127	\$ 648,118

	As of December 31, 2020	As of December 31, 2021
<b>Discount Rate</b>	6.50%	6.50%
<b>Expected Return on Assets</b>	6.50%	6.50%

	As of December 31, 2021
<b>Total Active Participants</b>	26
<b>Total Retiree Participants</b>	39

The active participants' number above may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

# Executive Summary

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Summary of Results

Below is a breakdown of total GASB 75 liabilities allocated to past and current service compared to the prior year. The table below also provides a breakdown of the Total OPEB Liability allocated to pre- and post- Medicare eligibility. The liability shown below includes explicit (if any) and implicit subsidies. Refer to the Substantive Plan Provisions section for complete information on the Plan Sponsor's GASB subsidies.

Present Value of Future Benefits	As of December 31, 2020	As of December 31, 2021
Active Employees	\$ 5,468,764	\$ 4,584,243
Retired Employees	7,849,108	7,001,512
<b>Total Present Value of Future Benefits</b>	<b>\$ 13,317,872</b>	<b>\$ 11,585,755</b>

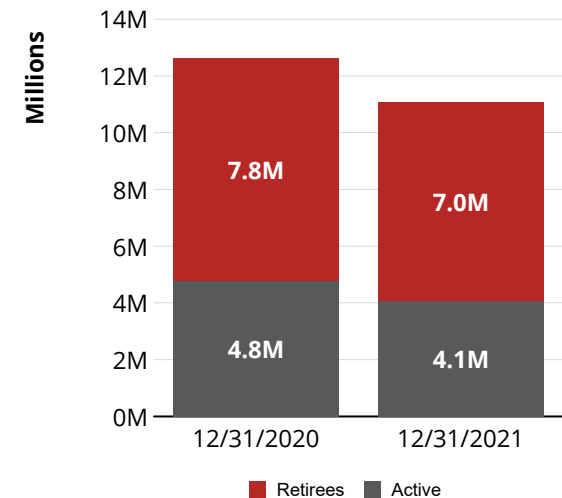
Total OPEB Liability	As of December 31, 2020	As of December 31, 2021
Active Pre-Medicare	\$ 3,066,457	\$ 2,496,535
Active Post-Medicare	1,708,621	1,563,338
Active Liability	\$ 4,775,078	\$ 4,059,873

Retiree Pre-Medicare	\$ 2,776,883	\$ 2,223,646
Retiree Post-Medicare	5,072,225	4,777,866
Retiree Liability	\$ 7,849,108	\$ 7,001,512

<b>Total OPEB Liability</b>	<b>\$ 12,624,186</b>	<b>\$ 11,061,385</b>
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	As of December 31, 2020	As of December 31, 2021
Discount Rate	6.50%	6.50%

### Changes In Total OPEB Liability



**Present Value of Future Benefits (PVFB)** is the amount needed as of December 31, 2021 and December 31, 2020, to fully fund the Township's retiree health care subsidies for existing and future retirees and their dependents assuming all actuarial assumptions are met.

**Total OPEB Liability** is the portion of PVFB considered to be accrued or earned as of December 31, 2021 and December 31, 2020. This amount is a required disclosure in the Required Supplementary Information

# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Schedule of Changes in Net OPEB Liability and Related Ratios

OPEB Liability	FY 2021	FY 2020	FY 2019	FY 2018	FY 2017
<b>Total OPEB Liability</b>					
Total OPEB Liability - beginning of year	\$ 12,624,186	\$ 13,926,904	\$ 14,972,552	\$ 14,535,293	\$ 12,288,750
Service cost	141,708	150,240	142,749	137,922	138,294
Interest	809,050	892,682	959,584	931,661	842,858
Change of benefit terms	0	0	0	0	0
Changes in assumptions	127,970	0	720,691	0	1,730,520
Differences between expected and actual experience	(1,993,411)	(1,647,513)	(2,152,449)	58,494	169,008
Benefit payments	(648,118)	(698,127)	(716,223)	(690,818)	(634,137)
Net change in total OPEB liability	\$ (1,562,801)	\$ (1,302,718)	\$ (1,045,648)	\$ 437,259	\$ 2,246,543
Total OPEB Liability - end of year	\$ 11,061,385	\$ 12,624,186	\$ 13,926,904	\$ 14,972,552	\$ 14,535,293
<b>Plan Fiduciary Net Position</b>					
Plan fiduciary net position - beginning of year	\$ 8,544,128	\$ 6,948,607	\$ 5,569,548	\$ 5,994,833	\$ 5,231,243
Contributions - employer	700,000	753,617	767,327	625,958	629,226
Contributions - active employees	49,275	43,841	48,742	50,783	52,989
Net investment income	786,722	1,520,190	1,300,333	(363,106)	715,512
Benefit payments	(648,118)	(698,127)	(716,223)	(690,818)	(634,137)
Trust administrative expenses	(19,986)	(24,000)	(21,120)	(48,102)	0
Net change in plan fiduciary net position	\$ 867,892	\$ 1,595,521	\$ 1,379,059	\$ (425,285)	\$ 763,590
Plan fiduciary net position - end of year	\$ 9,412,021	\$ 8,544,128	\$ 6,948,607	\$ 5,569,548	\$ 5,994,833
<b>Net OPEB Liability - end of year</b>	<b>\$ 1,649,365</b>	<b>\$ 4,080,058</b>	<b>\$ 6,978,297</b>	<b>\$ 9,403,004</b>	<b>\$ 8,540,460</b>
Plan fiduciary net position as % of total OPEB liability	85.1%	67.7%	49.9%	37.2%	41.2%
Covered employee payroll	\$ 2,084,653	\$ 2,255,552	\$ 2,163,061	\$ 1,476,413	\$ 1,433,411
Net OPEB liability as % of covered payroll	79.1%	180.9%	322.6%	636.9%	595.8%

# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Schedule of Employer Contributions

The Actuarially Determined Contributions (ADC) shown below are based on the Annual Required Contribution (ARC) calculated in prior GASB 45 actuarial valuations as shown in the Township's financial statements.

	FY 2021		FY 2020		FY 2019		FY 2018		FY 2017	
Actuarially Determined Contribution (ADC)	\$	648,118	\$	698,127	\$	910,801	\$	826,049	\$	629,226
Contributions in relation to the ADC		700,000		753,617		767,327		826,049		629,226
Contribution deficiency/(excess)	\$	(51,882)	\$	(55,490)	\$	143,474	\$	0	\$	0
Covered employee payroll	\$	2,084,653	\$	2,255,552	\$	2,163,061	\$	1,476,413	\$	1,433,411
Contribution as a % of covered payroll		33.6%		33.4%		35.5%		55.9%		43.9%
	FY 2016		FY 2015		FY 2014		FY 2013		FY 2012	
Actuarially Determined Contribution (ADC)	\$	587,148	\$	590,744	\$	487,768	\$	684,431	\$	839,610
Contributions in relation to the ADC		587,148		590,744		487,768		684,431		839,610
Contribution deficiency/(excess)	\$	0	\$	0	\$	0	\$	0	\$	0
Covered employee payroll		N/A		N/A		N/A		N/A		N/A
Contribution as a % of covered payroll		N/A		N/A		N/A		N/A		N/A



# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### OPEB Expense

OPEB Expense	FY 2021	FY 2020
Discount Rate		
Beginning of year	6.50%	6.50%
End of year	6.50%	6.50%
Service cost	\$ 141,708	\$ 150,240
Interest	809,050	892,682
Change of benefit terms	0	0
Projected earnings on OPEB plan investments	(557,965)	(454,069)
Reduction for contributions from active employees	(49,275)	(43,841)
OPEB plan administrative expenses	19,986	24,000
Current period recognition of deferred outflows / (inflows) of resources		
Differences between expected and actual experience	\$ (1,433,721)	\$ (893,114)
Changes in assumptions	212,166	612,803
Net difference between projected and actual earnings on OPEB plan investments	(370,765)	(325,016)
Total current period recognition	\$ (1,592,320)	\$ (605,327)
Total OPEB expense	\$ (1,228,815)	\$ (36,315)

# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Deferred Outflows / (Inflows) of Resources

Deferred Outflows / (Inflows) of Resources represents the following items that have not been recognized in the OPEB Expense:

1. Differences between expected and actual experience of the OPEB plan
2. Changes of assumptions
3. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)

The initial amortization period for the first two items noted above is based on expected future service lives while the difference between the projected and actual earnings in OPEB plan investment is amortized over five years. All balances are amortized linearly on a principal only basis and new bases will be created annually for each of the items above.

Differences between expected and actual experience for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of December 31, 2021
December 31, 2017	\$ 169,008	4	\$ 0	\$ 0
December 31, 2018	\$ 58,494	4	\$ 14,622	\$ 0
December 31, 2019	\$ (2,152,449)	4	\$ (538,112)	\$ (538,113)
December 31, 2020	\$ (1,647,513)	4	\$ (411,878)	\$ (823,757)
December 31, 2021	\$ (1,993,411)	4	\$ (498,353)	\$ (1,495,058)

Changes in assumptions for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of December 31, 2021
December 31, 2017	\$ 1,730,520	4	\$ 0	\$ 0
December 31, 2018	\$ 0	N/A	\$ 0	\$ 0
December 31, 2019	\$ 720,691	4	\$ 180,173	\$ 180,172
December 31, 2020	\$ 0	N/A	\$ 0	\$ 0
December 31, 2021	\$ 127,970	4	\$ 31,993	\$ 95,977

# GASB Disclosures

Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

## Deferred Outflows / (Inflows) of Resources (Continued)

Net Difference between projected and actual earnings in OPEB plan investments for FYE	Initial Balance	Initial Amortization Period	Annual Recognition	Unamortized Balance as of December 31, 2021
December 31, 2017	\$ (373,943)	5	\$ (74,787)	\$ 0
December 31, 2018	\$ 750,781	5	\$ 150,156	\$ 150,157
December 31, 2019	\$ (935,794)	5	\$ (187,159)	\$ (374,317)
December 31, 2020	\$ (1,066,121)	5	\$ (213,224)	\$ (639,673)
December 31, 2021	\$ (228,757)	5	\$ (45,751)	\$ (183,006)

As of fiscal year ending December 31, 2021	Deferred Outflows	Deferred Inflows
Differences between expected and actual experience	\$ 0	\$ (2,856,928)
Changes in assumptions	276,149	0
Net difference between projected and actual earnings in OPEB plan investments	0	(1,046,839)
<b>Total</b>	<b>\$ 276,149</b>	<b>\$ (3,903,767)</b>

## Annual Amortization of Deferred Outflows / (Inflows)

The balances as of December 31, 2021 of the deferred outflows / (inflows) of resources will be recognized in OPEB expense in the future fiscal years as noted below.

FYE	Balance
2022	\$ (1,532,156)
2023	\$ (1,324,372)
2024	\$ (725,337)
2025	\$ (45,753)
2026	\$ 0
Thereafter	\$ 0

# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Sensitivity Results

The following presents the Net OPEB Liability as of December 31, 2021, calculated using the discount rate assumed and what it would be using a 1% higher and 1% lower discount rate.

- The current discount rate is 6.50%.
- The 1% decrease in discount rate would be 5.50%.
- The 1% increase in discount rate would be 7.50%.

As of December 31, 2021	Net OPEB Liability	
1% Decrease	\$	2,870,027
Current Discount Rate	\$	1,649,365
1% Increase	\$	633,838

The following presents the Net OPEB Liability as of December 31, 2021, using the health care trend rates assumed and what it would be using 1% higher and 1% lower health care trend rates.

- The current health care trend rate starts at an initial rate of 7.50%, decreasing to an ultimate rate of 4.50%.
- The 1% decrease in health care trend rates would assume an initial rate of 6.50%, decreasing to an ultimate rate of 3.50%.
- The 1% increase in health care trend rates would assume an initial rate of 8.50%, decreasing to an ultimate rate of 5.50%.

As of December 31, 2021	Net OPEB Liability	
1% Decrease	\$	634,099
Current Trend Rates	\$	1,649,365
1% Increase	\$	2,863,965

# GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Asset Information

Asset Breakdown		FY 2020		FY 2021
<b>Assets</b>				
Cash and deposits	\$	885,967	\$	39,853
Securities lending cash collateral		0		0
Total cash	\$	885,967	\$	39,853
Receivables				
Contributions	\$	0	\$	0
Accrued interest		0		0
Total receivables	\$	0	\$	0
Investments				
Fixed income	\$	2,652,462	\$	3,919,386
Equities		5,727,827		6,119,907
Mutual Funds		0		0
Total investments	\$	8,380,288	\$	10,039,293
Total Assets	\$	9,266,255	\$	10,079,146
<b>Liabilities</b>				
Payables				
Investment management fees	\$	722,127	\$	667,126
Securities lending expense		0		0
Total liabilities	\$	722,127	\$	667,126
<b>Net Position Restricted to OPEB</b>	<b>\$</b>	<b>8,544,128</b>	<b>\$</b>	<b>9,412,021</b>

# GASB Disclosures

Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

## Asset Information (Continued)

Asset Reconciliation	FY 2020	FY 2021
<b>Additions</b>		
Contributions Received		
Employer	\$ 753,617	\$ 700,000
Active employees	43,841	49,275
Total contributions	\$ 797,458	\$ 749,275
Investment Income		
Net increase in fair value of investments	\$ 1,389,796	\$ 395,354
Interest and dividends	130,395	391,369
Investment expense, other than from securities lending	0	0
Securities lending income	0	0
Securities lending expense	0	0
Net investment income	\$ 1,520,191	\$ 786,722
Total additions	\$ 2,317,648	\$ 1,535,997
<b>Deductions</b>		
Benefit payments	\$ 698,127	\$ 648,118
Administrative expenses	24,000	19,986
Other	0	0
Total deductions	\$ 722,127	\$ 668,105
Net increase in net position	\$ 1,595,521	\$ 867,892
Net position restricted to OPEB		
Beginning of year	\$ 6,948,607	\$ 8,544,128
End of year	\$ 8,544,128	\$ 9,412,021

# Projection of GASB Disclosures

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The Total OPEB Liability (TOL) is expected to change on an annual basis as a result of expected and unexpected events. Under normal circumstances, it is generally expected to have a net increase each year. Below is a list of the most common events affecting the total OPEB liability and whether they increase or decrease the liability.

### Expected Events

- Increases in TOL due to additional benefit accruals as employees continue to earn service each year
- Increases in TOL due to interest as the employees and retirees age
- Decreases in TOL due to benefit payments

### Unexpected Events

- Increases in TOL when actual health care costs increase more than expected. A liability decrease occurs when the reverse happens.
- Increases in TOL when more new retirements occur than expected or fewer terminations occur than anticipated. Liability decreases occur when the opposite outcomes happen.
- Increases or decreases in TOL depending on whether benefits are improved or reduced.

Projection of Total OPEB Liability (TOL)	FY 2021	FY 2022
TOL as of beginning of year	\$ 12,624,186	\$ 11,061,385
Normal cost as of beginning of year	141,708	97,135
Exp. benefit payments during the year	(648,118)	(847,358)
Interest adjustment to end of year	809,050	698,198
Exp. TOL as of end of year	\$ 12,926,826	\$ 11,009,360
Actuarial Loss / (Gain)	(1,865,441)	TBD
<b>Actual TOL as of end of year</b>	<b>\$ 11,061,385</b>	<b>\$ TBD</b>

Discount rate as of beginning of year	6.50%	6.50%
Discount rate as of end of year	6.50%	TBD

Projection of Actuarial Value of Assets (AVA)	FY 2021	FY 2022
AVA as of beginning of year	\$ 8,544,128	\$ 9,412,021
Exp. employer contributions during the year	700,000	700,000
Exp. benefit payments during the year	(648,118)	(847,358)
Expected investment income	557,965	607,645
Exp. Trust administrative expenses	(19,986)	(32,942)
Exp. AVA as of end of year	\$ 9,183,263	\$ 9,890,365
Differences between expected and actual experience	228,758	TBD
<b>AVA as of end of year</b>	<b>\$ 9,412,021</b>	<b>\$ TBD</b>

Expected asset return as of beginning of year	6.50%	6.50%
Expected asset return as of end of year	6.50%	TBD

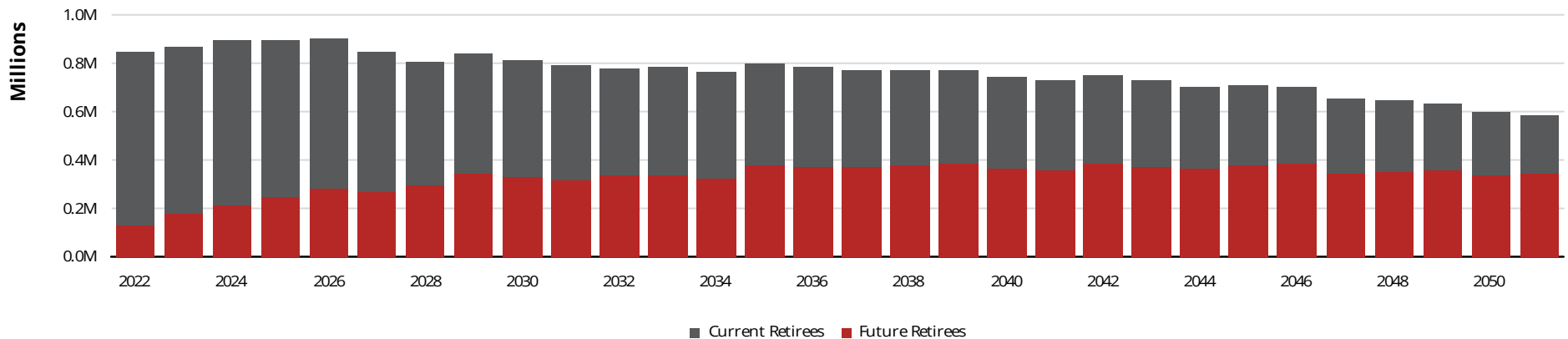
# Cash Flow Projections

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The below projections show the actuarially estimated employer-paid contributions for retiree health benefits for the next thirty years. Results are shown separately for a closed group of current/future retirees. These projections include explicit and implicit subsidies.

FYE	Current Retirees	Future Retirees*	Total	FYE	Current Retirees	Future Retirees*	Total	FYE	Current Retirees	Future Retirees*	Total
2022	\$ 716,963	\$ 130,395	\$ 847,358	2032	\$ 443,245	\$ 337,576	\$ 780,821	2042	\$ 365,168	\$ 383,647	\$ 748,815
2023	\$ 690,515	\$ 178,428	\$ 868,943	2033	\$ 443,596	\$ 340,315	\$ 783,911	2043	\$ 354,811	\$ 375,619	\$ 730,430
2024	\$ 681,239	\$ 216,697	\$ 897,936	2034	\$ 439,725	\$ 326,546	\$ 766,271	2044	\$ 343,642	\$ 362,451	\$ 706,093
2025	\$ 644,522	\$ 249,713	\$ 894,235	2035	\$ 420,975	\$ 376,564	\$ 797,539	2045	\$ 333,020	\$ 377,120	\$ 710,140
2026	\$ 623,835	\$ 279,960	\$ 903,795	2036	\$ 415,873	\$ 372,826	\$ 788,699	2046	\$ 320,115	\$ 386,833	\$ 706,948
2027	\$ 579,708	\$ 268,673	\$ 848,381	2037	\$ 396,549	\$ 372,875	\$ 769,424	2047	\$ 307,916	\$ 345,373	\$ 653,289
2028	\$ 514,146	\$ 295,881	\$ 810,027	2038	\$ 393,556	\$ 378,593	\$ 772,149	2048	\$ 293,303	\$ 352,538	\$ 645,841
2029	\$ 499,084	\$ 343,923	\$ 843,007	2039	\$ 386,535	\$ 385,689	\$ 772,224	2049	\$ 277,862	\$ 359,243	\$ 637,105
2030	\$ 478,874	\$ 333,914	\$ 812,788	2040	\$ 380,246	\$ 364,111	\$ 744,357	2050	\$ 261,650	\$ 340,737	\$ 602,387
2031	\$ 476,816	\$ 314,241	\$ 791,057	2041	\$ 371,168	\$ 361,365	\$ 732,533	2051	\$ 244,772	\$ 343,043	\$ 587,815

### Projected Employer Pay-go Cost



\* Projections for future retirees do not take into account future new hires.



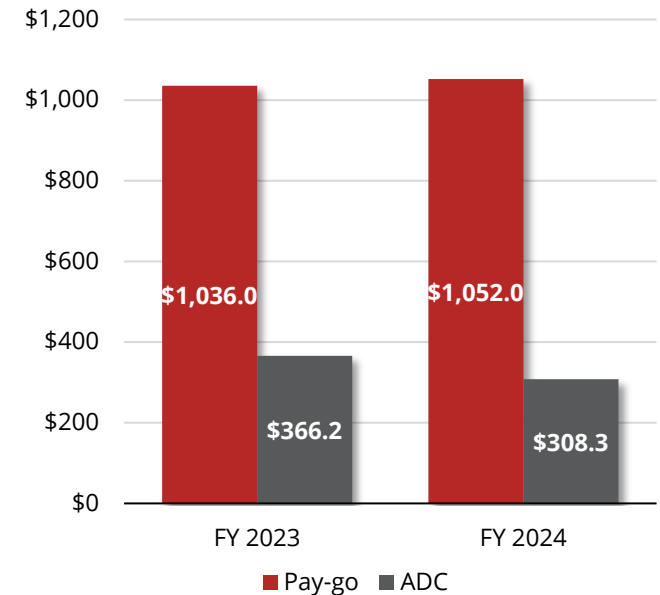
# Actuarially Determined Contributions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The FY 2023 and 2024 Actuarially Determined Contribution (ADC) below was calculated using the current Actuarial Accrued Liability and Actuarial Value of Assets projected on a no gain/no loss basis to January 1, 2023 and January 1, 2024 using a 6.5% investment rate of return.

	FY 2023	FY 2024
Discount rate	6.5%	6.5%
Payroll growth factor used for amortization	N/A	N/A
Actuarial cost method	Entry Age Normal Level % of Salary	Entry Age Normal Level % of Salary
Amortization type	Level Dollar	Level Dollar
Amortization period	22 years	21 years
Actuarial accrued liability (AAL) – beginning of year	\$ 12,574,738	\$ 12,500,377
Actuarial value of assets – beginning of year	(9,799,961)	(10,488,857)
Unfunded AAL – beginning of year	\$ 2,774,777	\$ 2,011,520
Normal Cost <sup>1</sup>	\$ 117,966	\$ 122,095
Amortization of UAAL	225,867	167,369
Total normal cost plus amortization	\$ 343,833	\$ 289,464
Interest to end of year	22,349	18,815
Actuarially Determined Contribution – Preliminary	\$ 366,182	\$ 308,279
Expected benefit payments	\$ 868,943	\$ 897,936
Member contributions <sup>2</sup>	\$ 48,607	\$ 50,309

### Cash vs Accrual Accounting



**Actuarially Determined Contribution (ADC)** is the target or recommended contribution to a defined benefit OPEB plan, which if paid on an ongoing basis, will provide sufficient resources to fund future costs for services to be earned and liabilities attributed to past services. This is typically higher than the pay-as-you-go cost because it includes recognition of employer costs expected to be paid in future accounting periods.

<sup>1</sup> The normal cost has been reduced for projected member contributions.

<sup>2</sup> Member contributions for FY 2023 and 2024 are estimated based on FY 2020 member payroll increased by 3.5% wage inflation.

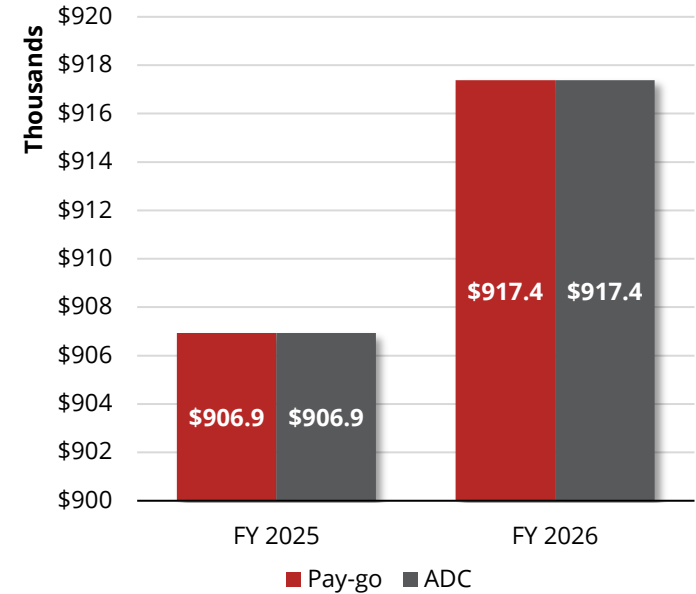
# Actuarially Determined Contributions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The FY 2025 and 2026 Actuarially Determined Contribution (ADC) below was calculated using the current Actuarial Accrued Liability projected to January 1, 2025 and January 1, 2026. Assets have been projected January 1, 2022 assets using a 6.5% investment rate of return.

	FY 2025	FY 2026
Discount rate	6.5%	6.5%
Payroll growth factor used for amortization	N/A	N/A
Actuarial cost method	Entry Age Normal Level % of Salary	Entry Age Normal Level % of Salary
Amortization type	Level Dollar	Level Dollar
Amortization period	20 years	19 years
Actuarial accrued liability (AAL) – beginning of year	\$ 11,677,978	\$ 10,933,659
Actuarial value of assets – beginning of year	(11,598,872)	(12,465,666)
Unfunded AAL – beginning of year	\$ 79,106	\$ (1,532,007)
Normal Cost <sup>1</sup>	\$ 106,069	\$ 109,782
Amortization of UAAL	6,741	(134,005)
Total normal cost plus amortization	\$ 112,810	\$ (24,223)
Interest to end of year	7,333	(1,575)
Actuarially Determined Contribution – Preliminary	\$ 120,143	\$ (25,798)
Expected benefit payments	\$ 894,235	\$ 903,795
Member contributions <sup>2</sup>	\$ 56,544	\$ 58,523

### Cash vs Accrual Accounting



**Actuarially Determined Contribution (ADC)** is the target or recommended contribution to a defined benefit OPEB plan, which if paid on an ongoing basis, will provide sufficient resources to fund future costs for services to be earned and liabilities attributed to past services. This is typically higher than the pay-as-you-go cost because it includes recognition of employer costs expected to be paid in future accounting periods.

<sup>1</sup> The normal cost has been reduced for projected member contributions.

<sup>2</sup> Member contributions for FY 2025 and 2026 are estimated based on FY 2021 member payroll increased by 3.5% wage inflation.

# Discussion of Discount Rates

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

Under GASB 74, the discount rate used in valuing OPEB liabilities for funded plans as of the Measurement Date must be based on the long-term expected rate of return on OPEB plan investments that are expected to be used to finance future benefit payments to the extent that (a) they are sufficient to pay for the projected benefit payments and (b) the OPEB plan assets are invested using a strategy that will achieve that return. When the OPEB plan investments are insufficient to cover future benefit payments, a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA /Aa or higher (or equivalent quality on another rating scale) must be used.

For the current valuation:

1. The long-term expected rate of return on OPEB plan investments is targeted to be 6.50%. This was determined based on a target asset allocation of 60% equity, 37% fixed income, and 3% cash.
2. The discount rate used when the OPEB plan investments are insufficient to pay for future benefit payments are selected from the range of indices as shown in the table below, where the range is given as the spread between the lowest and highest rate shown.

Yield as of	January 1, 2021	December 31, 2021
Bond Buyer Go 20-Bond Municipal Bond Index	2.12%	2.05%
S&P Municipal Bond 20-Year High Grade Rate Index	1.93%	2.25%
Fidelity 20-Year Go Municipal Bond Index	2.00%	1.84%
Bond Index Range	1.93% - 2.12%	1.84% - 2.25%

3. The final equivalent discount rate used for this year's valuation is 6.50% as of December 31, 2021 and January 1, 2021, which is based on the expectation that the Township will continue to fully fund the Actuarially Determined Contribution (ADC).

# Summary of Plan Participants

Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

## Active Employees

Actives with coverage	Single	Non-Single	Total	Avg. Age	Avg. Svc	Salary
Flex Blue PPO	7	19	26	44.6	14.9	\$ 2,084,653
<b>Total actives with coverage</b>	<b>7</b>	<b>19</b>	<b>26</b>	<b>44.6</b>	<b>14.9</b>	<b>\$ 2,084,653</b>

Actives without coverage	Total	Avg. Age	Avg. Svc	Salary
<b>Total actives without coverage</b>	<b>0</b>	<b>N/A</b>	<b>N/A</b>	<b>\$ N/A</b>

Active employees who currently have no coverage are assumed not to elect coverage at retirement. They have been included in the GASB valuation since they are assumed to receive opt-out benefits and life insurance coverage.

## Active Age-Service Distribution

Age	Years of Service										Total
	< 1	1 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	
Under 25											0
25 to 29	1		1								2
30 to 34		1	4								5
35 to 39		2	1	1							4
40 to 44					1						1
45 to 49			1		2	2					5
50 to 54				1		1	2				4
55 to 59							3	1			4
60 to 64				1							1
65 to 69											0
70 & up											0
<b>Total</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>26</b>

# Summary of Plan Participants

Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

## Retirees

Retirees with coverage	Single	Non-Single	Total	Avg. Age
Flex Blue PPO	5	17	22	62.2
Medicare Advantage Plan	5	9	14	78.8
<b>Total retirees with coverage</b>	<b>10</b>	<b>26</b>	<b>36</b>	<b>68.6</b>

Retirees with coverage	Total	Avg. Age
<b>Total retirees without coverage</b>	<b>3</b>	<b>62.0</b>

Inactives without health coverage are receiving opt-out benefits and life insurance coverage and have been included in this GASB valuation.

## Retiree Age Distribution

Age	Retirees
< 45	
45 to 49	
50 to 54	3
55 to 59	4
60 to 64	13
65 to 69	5
70 to 74	3
75 to 79	5
80 to 84	4
85 to 89	2
90 & up	
<b>Total</b>	<b>39</b>

# Substantive Plan Provisions

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## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### **Retirement Eligibility**

For employees hired before January 1, 2014, the Township provides retiree health care coverage upon retirement with 25 or more years of service.

Employees hired on/after January 1, 2014 will not be eligible for retiree health care coverage. Employees are currently contributing toward a Health Savings Account with additional contributions from the Township Fire Fund in the employee's name for health care cost with a 10 year vesting period for the purposes of retirement on the employer's contribution. These individuals are eligible to receive retiree life insurance benefits from the Township.

### **Duty and Non-Duty Disability Retirement**

The Township provides Township paid health care to disability retirees with 25 or more years of service. Benefits commence immediately.

### **Duty and Non-Duty Death-in-Service**

Surviving spouses of death-in-service members retiring after January 1, 2005 are eligible for Township paid retiree health care.

### **Spouse Coverage**

Spouse and eligible dependents are eligible to receive 100% Township paid retiree health care coverage for the life of the retiree. Township paid coverage continues for surviving spouse and eligible dependents less than 19 years of age of deceased retired member who retired after January 1, 2005. Surviving spouses and eligible dependents of deceased members retiring prior to January 1, 2005 may continue their health care coverage by reimbursing the cost to the Township.

### **Medicare Part B**

Retirees who retired prior to January 1, 1989 are reimbursed the cost of Medicare Part B. Effective January 1, 2022, Medicare Part B costs are \$170.10 per month.

### **Retiree Contributions**

Retired employees do not contribute toward retiree health care core benefits. Active employees hired prior to January 1, 2014 contribute 4% of wage toward retiree health care core benefits. If employees elected to enter the DROP, as of January 1, 2014, they will continue to contribute 4% toward retiree health care.

# Substantive Plan Provisions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Benefit Plans

Same benefit options are available to retirees as active employees. All health plans are fully-insured and experience-rated through Blue Cross Blue Shield. The monthly premium rates effective on January 1, 2022 are as shown below:

<b>Health Plan</b>	<b>1 Person</b>	<b>2 Person</b>
Flex Blue PPO	\$ 678.62	\$ 1,628.69
Medicare Advantage Plan	\$ 359.80	\$ 719.60

<b>Dental</b>	<b>1 Person</b>	<b>2 Person</b>
Delta Dental	\$ 29.79	\$ 59.45

<b>Vision</b>	<b>1 Person</b>	<b>2 Person</b>
VSP	\$ 7.92	\$ 14.58

### Health Reimbursement Account

The Township offers a Health Reimbursement Account with funds available to cover In-Network Deductibles; RX co-pays and other related health care expenses. Pre 65 covered under the Blue Cross/Blue Shield Flex Blue PPO plan, funding for HRA is Single: \$3,250 with a RX copay post deductible amount of \$1,000; Two-Person & Family: \$6,450 with a RX copay post deductible amount of \$2,000. Post 65 retirees covered under the Medicare PLUS Blue are funded at \$2,000/single; \$4,000/Two-Person & Family.

### Opt-out Benefit

\$3,000 per year for retirees that waive health care coverage

### Dental

Members and spouses retiring with retiree health care benefits are eligible for Township paid dental benefits.

### Vision

Members and spouses retiring with retiree health care benefits are eligible for Township paid vision benefits.

### Life Insurance

For all employees who retire on or after January 1, 1989, the Township shall provide life insurance in the amount of \$35,000 without accidental death and dismemberment until the employee reaches age 65. At age 65, the life insurance benefit shall be reduced to a \$5,000 death benefit only. For all employees who retire prior to January 1, 1989, the Township will provide life insurance in the amount of \$5,000 for the life of the retiree.

# Actuarial Methods and Assumptions

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## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The actuarial assumptions used in this report represent a reasonable long-term expectation of future OPEB outcomes. As national economic and Township experience change over time, the assumptions will be tested for ongoing reasonableness and, if necessary, updated.

There are changes to the actuarial methods and assumptions since the last GASB valuation, which was performed by GRS for the fiscal year ending December 31, 2019. Refer to Actuary's Notes section for complete information on these changes. For the current year GASB valuation, we have also updated the per capita costs. We expect to update health care trend rates, mortality rates, and per capita costs again in the next full GASB valuation, which will be for the fiscal year ending December 31, 2023.

**Measurement Date** For fiscal year ending December 31, 2021, a December 31, 2021 measurement date was used.

**Actuarial Valuation Date** December 31, 2021 with no adjustments to get to the December 31, 2021 measurement date. Liabilities as of January 1, 2021 are based on an actuarial valuation date of January 1, 2020 with results projected to January 1, 2021 on a "no loss / no gain" basis.

**Discount Rate** 6.50% as of December 31, 2021 and January 1, 2021 for accounting disclosure purposes.  
6.50% for funding disclosure purposes (in calculating the Actuarially Determined Contribution)  
Refer to the Discussion of Discount Rates section for more information on selection of the discount rate.

**Payroll Growth** 3.00% wage inflation plus merit and productivity increases as shown below.

<b>Age</b>	<b>Rates</b>
20	3.50%
25	3.50%
30	3.10%
35	1.60%
40	0.70%
45	0.70%
50	0.70%
55	0.60%
60+	0.50%

**Inflation Rate** 3.00% per year



# Actuarial Methods and Assumptions

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## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Employer Funding Policy

The Township fully funds the Actuarially Determined Contribution (ADC). The annual ADC is determined based on the annual normal cost and amortization of the Net OPEB Liability. This amortization amount is calculated using the Level Dollar amortization method, the discount rate for each year, and a decreasing amortization period of 24 years for FYE 2021.

### Cost Method

Allocation of Actuarial Present Value of Future Benefits for services prior and after the Measurement Date was determined using Entry Age Normal Level % of Salary method where:

- Service Cost for each individual participant, payable from date of employment to date of retirement, is sufficient to pay for the participant's benefit at retirement; and
- Annual Service Cost is a constant percentage of the participant's salary that is assumed to increase according to the Payroll Growth.

### Census Data

Census information was provided by the Township in March 2022. We have reviewed it for reasonableness and no material modifications were made to the census data.

### Experience Study

Best actuarial practices call for a periodic assumption review and Nyhart recommends the Township to complete an actuarial assumption review (also referred to as an experience study) in the future.

### Health Care Coverage Election Rate

Active employees with current coverage: 100%

Active employees with no coverage: 100% assumed to receive opt-out coverage

Inactive employees with current coverage: 100%

Inactive employees with no coverage: 100% assumed to receive opt-out coverage

### Spousal Coverage

Spousal age and coverage level for current retirees is based on actual data.

90% of active employees are assumed to elect spousal coverage at retirement and husbands are assumed to be three years older than wives.

### Mortality

Active employees and healthy retirees: SOA Pub-2010 Public Safety Headcount Weighted Mortality Table fully generational using Scale MP-2021

Disabled retirees: SOA Pub-2010 Public Safety Disabled Retiree Headcount Weighted Mortality Table fully generational using Scale MP-2021

Surviving Spouses: SOA Pub-2010 Continuing Survivor Headcount Weighted Mortality Table fully generational using Scale MP-2021

# Actuarial Methods and Assumptions

Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

## Disability

Sample annual disability rates are shown below:

Age	Male		Female	
	0 - 4 YOS	5+ YOS	0 - 4 YOS	5+ YOS
20	0.00%	0.07%	0.00%	0.03%
30	0.00%	0.10%	0.00%	0.07%
40	0.00%	0.21%	0.00%	0.19%
50	0.00%	0.52%	0.00%	0.45%
60+	0.00%	1.53%	0.00%	1.10%

## Retirement Rate

Sample annual rates of retirement are shown below:

YOS	DOH before 1/1/2014	DOH on/after 1/1/2014
25	50%	60%
26	50%	50%
27	50%	50%
28	50%	70%
29	60%	80%
30+	100%	100%

# Actuarial Methods and Assumptions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Turnover Rate

Assumption used to project terminations (voluntary and involuntary) prior to meeting minimum retirement eligibility for retiree health coverage. The rates represent the probability of termination in the next 12 months. Sample annual turnover rates are shown below:

Age/YOS	0	1	2	3	4	5+
25	10.0%	7.0%	5.0%	4.0%	3.5%	3.5%
30	10.0%	7.0%	5.0%	4.0%	3.5%	2.9%
35	10.0%	7.0%	5.0%	4.0%	3.5%	1.5%
40	10.0%	7.0%	5.0%	4.0%	3.5%	0.6%
45	10.0%	7.0%	5.0%	4.0%	3.5%	0.5%
50	10.0%	7.0%	5.0%	4.0%	3.5%	0.5%
55	10.0%	7.0%	5.0%	4.0%	3.5%	0.5%
60+	10.0%	7.0%	5.0%	4.0%	3.5%	0.5%

### Health Care Trend Rates

FYE	Pre-65 Med / Rx	Post-65 Med / Rx	Part B
2022	7.50%	6.50%	5.50%
2023	7.00%	6.25%	5.25%
2024	6.50%	6.00%	5.00%
2025	6.00%	5.75%	4.75%
2026	5.50%	5.50%	4.50%
2027	5.00%	5.25%	4.50%
2028	4.50%	5.00%	4.50%
2029	4.50%	4.75%	4.50%
2030+	4.50%	4.50%	4.50%

The initial trend rates were based on a combination of employer history, national trend surveys, and professional judgment.

The ultimate trend rates were selected based on historical medical CPI information.

### Dental Trend Rates

4.0% per year

### Vision Trend Rates

3.0% per year

### Retiree Contributions

Retirees are not required to contribute toward to the cost of retiree health coverage.

# Actuarial Methods and Assumptions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Per Capita Costs

Annual per capita costs are calculated based on the premium rates effective on January 1, 2022 actuarially increased using aging factors and current enrollment. Costs are assumed to increase according to health care trend rates.

Annual per capita costs are as shown below:

Age	Male	Female
< 50	\$ 5,200	\$ 7,200
50 - 54	\$ 7,300	\$ 8,400
55 - 59	\$ 9,900	\$ 9,600
60 - 64	\$ 13,000	\$ 11,800
65 - 69	\$ 3,600	\$ 3,600
70 - 74	\$ 4,100	\$ 4,100
75+	\$ 4,700	\$ 4,700

The per capita costs represent the cost of coverage for a retiree-only population.

Actuarial standards require the recognition of higher inherent costs for a retired population versus an active population.

Dental and vision per capita costs are assumed to be equal the premium rates of \$357 for dental coverage and \$95 for vision coverage.

### Explicit Subsidy

The difference between (a) the premium rate and (b) the retiree contribution. Below is an example of the monthly explicit subsidies for a retiree age 62 with spouse of the same age who was hired prior to January 1 2014.

	Premium Rate	Retiree Contribution	Explicit Subsidy
	A	B	C = A - B
Retiree	\$ 678.62	\$ 0.00	\$ 678.62
Spouse	\$ 950.07	\$ 0.00	\$ 950.07

# Actuarial Methods and Assumptions

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Implicit Subsidy

The difference between (a) the per capita cost and (b) the premium rate. Below is an example of the monthly implicit subsidies for a male retiree age 62 with spouse of the same age.

	Per Capita Cost	Premium Rate	Implicit Subsidy
	A	B	C = A - B
Retiree	\$ 1,083.33	\$ 678.62	\$ 404.71
Spouse	\$ 983.33	\$ 950.07	\$ 33.26

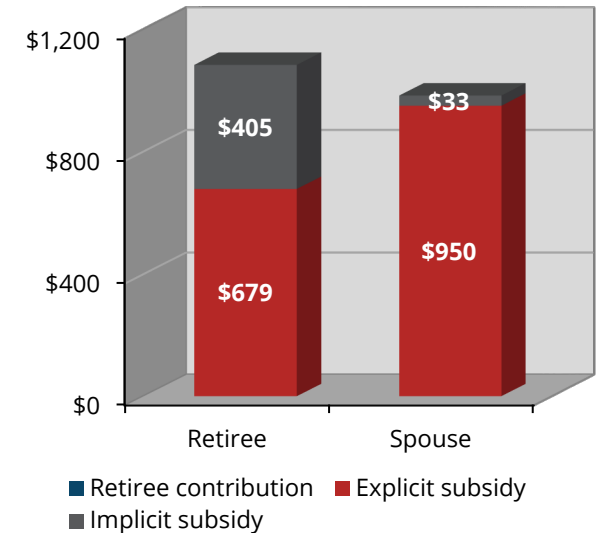
All employers that utilize premium rates based on blended active/retiree claims experience will have an implicit subsidy. There is an exception for Medicare plans using a true community-rated premium rate.

### GASB Subsidy Breakdown

Below is a breakdown of the GASB 75 monthly total cost for a male retiree age 62 with spouse of the same age who was hired prior to January 1, 2014.

	Retiree	Spouse
Retiree contribution	\$ 0.00	\$ 0.00
Explicit subsidy	\$ 678.62	\$ 950.07
Implicit subsidy	\$ 404.71	\$ 33.26
Total monthly cost	\$ 1,083.33	\$ 983.33

**GASB Subsidy Breakdown**



# APPENDIX

The background features a series of overlapping geometric shapes. A large, solid red shape is positioned in the bottom right corner. To its left, there are several overlapping shapes in various shades of gray and white, creating a layered, architectural effect. The top half of the image is a solid, medium-gray color.

# Appendix

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Comparison of Participant Demographic Information

The active participants' number below may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

	As of December 31, 2019	As of December 31, 2021
Active Participants	27	26
Retired Participants	44	39
Averages for Active		
Age	44.2	44.6
Service	14.5	14.9
Averages for Inactive		
Age	69.2	68.1

# Appendix

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## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### Detailed Actuary's Notes

There have been no substantive plan provision changes since the last full valuation, which was for the fiscal year ending December 31, 2019.

The following assumptions have been updated.

1. The mortality improvement scale applied to all mortality tables has been updated from MP-2019 to MP-2021. The impact of this change is a slight increase in liabilities.
2. Health care trend rates have been updated as follows:
  - a. Pre-65: initial rate of 7.5% decreasing by 0.5% annually to an ultimate rate of 4.5%.
  - b. Post-65: initial rate of 6.5% decreasing by 0.25% annually to an ultimate rate of 4.5%.
  - c. Part B: initial rate of 5.5% decreasing by 0.25% annually to an ultimate rate of 4.5%.
  - d. Dental: 4.0% annually.

This change caused an increase in liabilities.



# Appendix

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

### PA 202 Uniform Assumption Disclosures

The information presented below is for the purposes of filing Form No. 5572 under PA 202 uniform assumption requirements. Per regulation, Form No. 5572 must be filed no later than six months after the end of the fiscal year. Governmental fund revenues are not shown below and should be determined by the Township. Refer to the Michigan Department of Treasury website for additional information.

Form 5572 Line	Description	Township
Line 28	Actuarial Value of Assets	\$ 9,410,042
Line 29	Actuarial Accrued Liability	\$ 11,013,531
Line 31	Actuarially Determined Contribution for FY 2021	\$ 519,521

Line 31 (Actuarially Determined Contribution) was calculated using level dollar amortization with a 6.50% discount rate. The amortization period is a closed, 24-year period in FY 2021.

Under PA 202 requirements, uniform assumption setting is mandated in reporting of liabilities, assets, and ADC. The following is a description of the PA 202 uniform assumption guidance and final assumption used for the Township for purposes of calculating the figures above.

Assumption	Uniform Assumption Guidance	Township Assumption
Investment Rate of Return	Maximum of 7.00%	6.50 % as of January 1, 2021 and 6.50% as of December 31, 2021 (for funding/ADC purposes)
Discount Rate	Blended discount rate calculated per GASB 74/75: <ul style="list-style-type: none"> <li>Maximum of 7.0% where plan assets are sufficient to make projected benefit payments</li> <li>Maximum of 3.0% for periods where assets are insufficient to make projected benefit payments</li> </ul>	6.50% (for calculation of the OPEB liability)
Salary Increase	Minimum of 3.50% or based on actuarial experience study within the past 5 years	Same as the GASB 74/75 valuation
Mortality Table	A version of Pub-2010 with Scale MP-2019 generational mortality improvement or based on an actuarial experience study conducted within the past 5 years	Same as PA 202 uniform assumption
Amortization Period	Maximum closed period of 28 years for Retiree Health Care Systems	For FY 2021, 24 years on a closed period basis
Asset Valuation	Market Value as reported on Financial Statements	Market Value
Healthcare Inflation	Non-Medicare: Initial rate of 7.50% decreasing 0.25% per year to a 4.50% long-term rate Medicare: Initial rate of 5.75% decreasing 0.25% per year to a 4.50% long-term rate	Same as PA 202 uniform assumption

# GLOSSARY

The background features a series of overlapping, semi-transparent geometric shapes. A large, solid red shape is positioned in the bottom right corner, overlapping a white shape. The white shape overlaps a light gray shape, which in turn overlaps a darker gray shape that fills the top half of the page. The overall effect is a modern, layered composition.

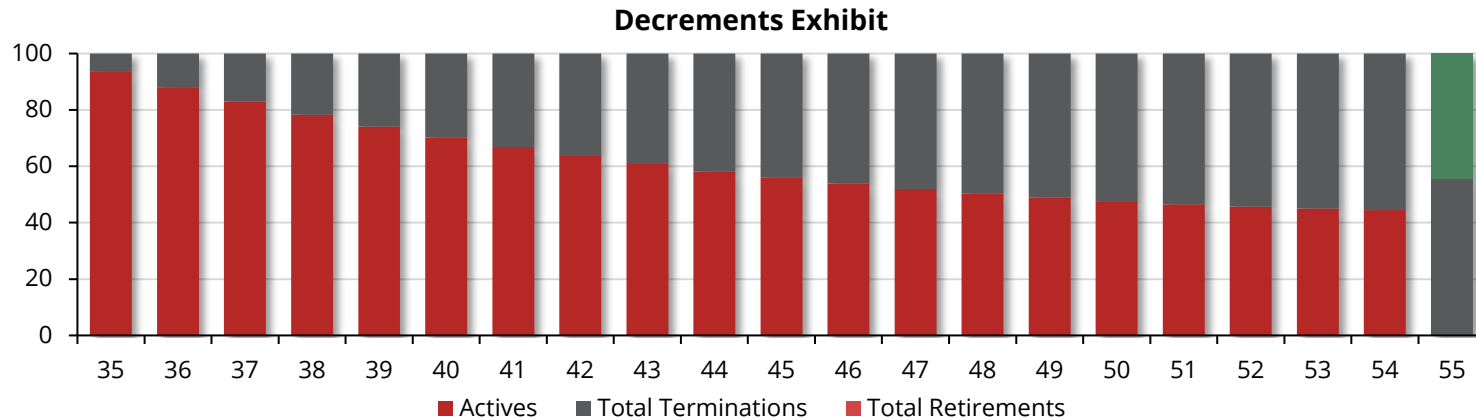
# Glossary – Decrements Exhibit

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. Starting with 100 employees at age 35, the illustrated actuarial assumptions show that 44.43 employees out of the original 100 are expected to retire and could elect retiree health benefits at age 55.

Age	# Remaining Employees	# of Terminations per Year <sup>1</sup>	# of Retirements per Year	Total Decrements
35	100.000	6.276	0.000	6.276
36	93.724	5.677	0.000	5.677
37	88.047	5.136	0.000	5.136
38	82.911	4.648	0.000	4.648
39	78.262	4.209	0.000	4.209
40	74.053	3.814	0.000	3.814
41	70.239	3.456	0.000	3.456
42	66.783	3.131	0.000	3.131
43	63.652	2.835	0.000	2.835
44	60.817	2.564	0.000	2.564
45	58.253	2.316	0.000	2.316

Age	# Remaining Employees	# of Terminations per Year	# of Retirements per Year	Total Decrements
46	55.938	2.085	0.000	2.085
47	53.853	1.866	0.000	1.866
48	51.987	1.656	0.000	1.656
49	50.331	1.452	0.000	1.452
50	48.880	1.253	0.000	1.253
51	47.627	1.060	0.000	1.060
52	46.567	0.877	0.000	0.877
53	45.690	0.707	0.000	0.707
54	44.983	0.553	0.000	0.553
55	44.430	0.000	44.430	44.430



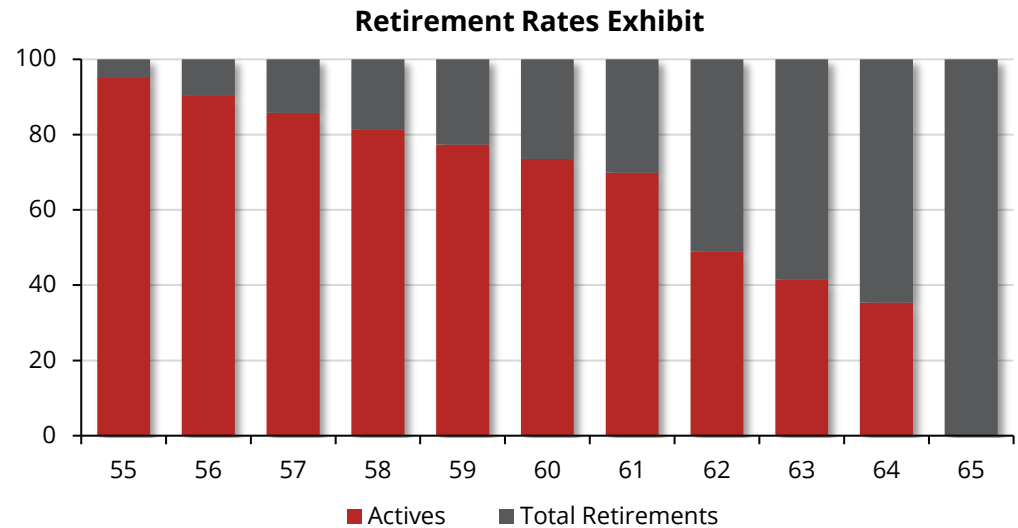
<sup>1</sup> The above rates are illustrative rates and are not used in our GASB calculations.

# Glossary – Retirement Rates Exhibit

## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. The illustrated retirement rates show the number of employees who are assumed to retire annually based on 100 employees age 55 who are eligible for retiree health care coverage. The average age at retirement is 62.0.

Age	Active Employees BOY	Annual Retirement Rates*	# Retirements per Year	Active Employees EOY
55	100.000	5.0%	5.000	95.000
56	95.000	5.0%	4.750	90.250
57	90.250	5.0%	4.513	85.738
58	85.738	5.0%	4.287	81.451
59	81.451	5.0%	4.073	77.378
60	77.378	5.0%	3.869	73.509
61	73.509	5.0%	3.675	69.834
62	69.834	30.0%	20.950	48.884
63	48.884	15.0%	7.333	41.551
64	41.551	15.0%	6.233	35.318
65	35.318	100.0%	35.318	0.000



\* The above rates are illustrative rates and are not used in our GASB calculations.

# Glossary – Definitions

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## Charter Township of Ypsilanti Fire OPEB Plan GASB 74/75 Valuation for Fiscal Year Ending December 31, 2021

GASB 75 defines several unique terms not commonly employed in the funding of pension and retiree health plans. The definitions of the terms used in the GASB actuarial valuations are noted below.

1. **Actuarial Assumptions** – Assumptions as to the occurrence of future events affecting health care costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided health care benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.
2. **Actuarial Cost Method** – A procedure for determining the Actuarial Present Value of Future Benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Service Cost and a Total OPEB Liability.
3. **Actuarially Determined Contribution** - A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in accordance with the parameters and in conformity with Actuarial Standards of Practice.
4. **Actuarial Present Value** – The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:
  - a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, Social Security, marital status, etc.);
  - b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned; and
  - c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.
5. **Deferred Outflow / (Inflow) of Resources** – represents the following items that have not been recognized in the OPEB Expense:
  - a. Differences between expected and actual experience of the OPEB plan
  - b. Changes in assumptions
  - c. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)
6. **Explicit Subsidy** – The difference between (a) the amounts required to be contributed by the retirees based on the premium rates and (b) actual cash contribution made by the employer.
7. **Funded Ratio** – The actuarial value of assets expressed as a percentage of the Total OPEB Liability.

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8. **Healthcare Cost Trend Rate** – The rate of change in the per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
9. **Implicit Subsidy** – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group (which, because of the effect of age on claim costs, generally will be higher than the blended premium rates for all group members) and (b) the amounts required to be contributed by the retirees.
10. **OPEB** – Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
11. **OPEB Expense** – Changes in the Net OPEB Liability in the current reporting period, which includes Service Cost, interest cost, changes of benefit terms, expected earnings on OPEB Plan investments, reduction of active employees' contributions, OPEB plan administrative expenses, and current period recognition of Deferred Outflows / (Inflows) of Resources.
12. **Pay-as-you-go** – A method of financing a benefit plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
13. **Per Capita Costs** – The current cost of providing postretirement health care benefits for one year at each age from the youngest age to the oldest age at which plan participants are expected to receive benefits under the plan.
14. **Present Value of Future Benefits** – Total projected benefits include all benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members) as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment. Expressed another way, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay total projected benefits when due.
15. **Real Rate of Return** – the rate of return on an investment after adjustment to eliminate inflation.

# Glossary – Definitions

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16. **Select and Ultimate Rates** – Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8% for year 20W0, then 7.5% for 20W1, and 7% for 20W2 and thereafter, then 8% and 7.5% are select rates, and 7% is the ultimate rate.
17. **Service Cost** – The portion of the Actuarial Present Value of projected benefit payments that are attributed to a valuation year by the Actuarial Cost Method.
18. **Substantive Plan** – The terms of an OPEB plan as understood by the employer(s) and plan members.
19. **Total OPEB Liability** – That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Benefits which is attributed to past periods of employee service (or not provided for by the future Service Costs).