

Washtenaw County Road Commission Retiree Health Care Plan

Actuarial Valuation Report
as of December 31, 2022



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July 19, 2023

Mr. Daniel D. Ackerman
Director of Finance and I.T.
Washtenaw County Road Commission
555 North Zeeb Road
Ann Arbor, Michigan 48103

Dear Mr. Ackerman:

The results of the December 31, 2022 Biennial Actuarial Funding Valuation of the Washtenaw County Road Commission Retiree Health Care Plan are presented in this report.

This report was prepared at the request of the Road Commission and is intended for use by the Road Commission and those designated or approved by the Road Commission. This report may be provided to parties other than the Road Commission only in its entirety and only with the permission of the Road Commission. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the Plan's funding progress, and to determine the Actuarially Determined Contributions for the fiscal years ending December 31, 2023 and December 31, 2024. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. This report does not include actuarial information needed to satisfy reporting requirements under Governmental Accounting Standards Board (GASB) Statement No. 75.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

Results presented in this report are developed using the actuarial assumptions and methods disclosed in this report. 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. This report does not include a 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 the investment and other significant risks that may have a material effect on the plan's financial condition.

Mr. Daniel D. Ackerman
Washtenaw County Road Commission
July 19, 2023
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The findings in this report are based upon information furnished by the Road Commission, concerning retiree health care benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the Road Commission.


All actuarial assumptions used in this report are reasonable for the purposes of this valuation. All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice. Additional information about the actuarial assumptions is included in the section of this report entitled Actuarial Cost Methods and Assumptions.

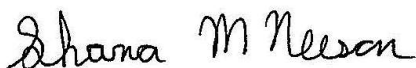
This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that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

This report has been prepared by actuaries who have substantial experience valuing public employee retiree health plans. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Washtenaw County Road Commission Retiree Health Care Plan 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.

James D. Anderson and Shana M. Neeson are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor, and all actuarial assumptions used in this report are reasonable for the purposes of this valuation.

Respectfully submitted,
Gabriel, Roeder, Smith & Company


James D. Anderson, FSA, EA, FCA, MAAA



Shana M. Neeson, ASA, FCA, MAAA

JDA/SMN:ah



EXECUTIVE SUMMARY

Executive Summary

Actuarially Determined Contribution

We have calculated the Actuarially Determined Contribution for the fiscal years ending December 31, 2023 and December 31, 2024 under an assumed long-term rate of return of 7.00%. Below is a summary of the results. The Actuarially Determined Contributions and estimated retiree claims shown below include an adjustment for any implicit rate subsidy present in your pre-65 rates.

Fiscal Year Ending	Actuarially Determined Contribution	Estimated Claims Paid for Retirees
December 31, 2023	\$1,047,212	\$1,577,051
December 31, 2024	1,041,881	1,643,654

For additional details please see the Section titled "Valuation Results."

Liabilities and Assets – As of December 31, 2022

1. Present Value of Future Benefit Payments	\$26,663,214
2. Actuarial Accrued Liability	25,909,870
3. Plan Assets	17,468,062
4. Unfunded Actuarial Accrued Liability (2) – (3)	8,441,808
5. Funded Ratio (3)/(2)	67.4%

The Present Value of Future Benefit Payments (PVFB) is the present value of all benefits projected to be paid from the plan for past and future service to current members. The Actuarial Accrued Liability is the portion of the PVFB allocated to past service by the Plan's funding method (see the Section titled "Actuarial Cost Method and Actuarial Assumptions").

SECTION A

VALUATION RESULTS

Washtenaw County Road Commission Retiree Health Care Plan

Results by Division

as of December 31, 2022

	Non-Union	TPOAM	Total
A. Present Value of Future Benefits			
i) Retirees and Beneficiaries	\$ 10,960,255	\$ 9,097,465	\$ 20,057,720
ii) Vested Terminated Members	0	0	0
iii) Active Members	<u>3,163,448</u>	<u>3,442,046</u>	<u>6,605,494</u>
Total Present Value of Future Benefits	14,123,703	12,539,511	26,663,214
B. Present Value of Future Normal Costs	345,661	407,683	753,344
C. Actuarial Accrued Liability (A.-B.)	13,778,042	12,131,828	25,909,870
D. Actuarial Value of Assets	9,288,958	8,179,104	17,468,062
E. Unfunded Actuarial Accrued Liability (C.-D.)	4,489,084	3,952,724	8,441,808
F. Funded Ratio (D./C.)	67.4%	67.4%	67.4%
G. Fiscal Year Ending December 31, 2023			
i) Employer Normal Cost	\$ 51,417	\$ 62,804	\$ 114,221
ii) Amortization of UAAL (14 years)*	<u>496,135</u>	<u>436,856</u>	<u>932,991</u>
Actuarially Determined Contribution	\$ 547,552	\$ 499,660	\$ 1,047,212
H. Fiscal Year Ending December 31, 2024			
Actuarially Determined Contribution	\$ 544,784	\$ 497,097	\$ 1,041,881

* The Unfunded Actuarial Accrued Liability (UAAL) was amortized as a level dollar amount over a closed period of 14 years for the fiscal year ending December 31, 2023 and decreasing by 1 each year thereafter.

The long-term rate of investment return used in this valuation is 7.00%.

Comments

Comment A: Overall Plan experience was more favorable than expected. Factors contributing to the favorable experience include, but are not limited to:

- Lower than expected increases in the PA 152 hard cap amounts; and
- More favorable claims experience than projected post-65.

Partially offsetting these factors was unfavorable experience due to:

- Assumption Changes:
 - Resetting the initial pre-65 health care cost trend assumption to 7.50%;
 - Resetting the initial post-65 health care cost trend assumption to 6.25%;
 - Decreasing the assumed annual rate of investment return to 7.00%; and
- Less favorable claims experience than projected pre-65.

The combined impact of the various changes in assumptions noted above increased the overall Actuarial Accrued Liability by approximately \$907,000.

Comment B: One of the key assumptions used in any valuation of the cost of postemployment benefits is the rate of return on the assets that will be used to pay Plan benefits. Higher assumed investment returns will result in a lower Actuarially Determined Contribution (ADC). Lower returns will tend to increase the computed ADC. As requested by the Plan sponsor, we have calculated the liability and the resulting ADC using an assumed annual rate of investment return of 7.00%. The investment return assumption should not exceed reasonable market expectations.

Comment C: The plan sponsor is required by GASB to perform actuarial valuations at least biennially or more frequently if significant changes in OPEB are made in the interim.

Comment D: The contribution amounts shown include amortization of the unfunded actuarial accrued liability over a closed 14-year period for the fiscal year ending December 31, 2023, decreasing by one each year thereafter.

Comment E: Some Washtenaw County Road Commission employees are covered by a Retiree Health Care Savings Plan. The Health Care Savings Plan is a separate health plan and is not considered part of the liabilities associated with this Retiree Health Care Plan.

Comment F: The GASB issued Statement Nos. 74 and 75 for OPEB valuations. GASB Statement No. 74 for the plan OPEB disclosures is effective for fiscal years beginning after June 15, 2016. GASB Statement No. 75 for employer OPEB disclosures is effective for employer fiscal years beginning after June 15, 2017. The GASB implementation guides for Statement Nos. 74 and 75 provide additional clarification related to the implementation of these Statements. It is our understanding that the Road Commission will need to comply with GASB Statement No. 75 for each future fiscal year ending on December 31. The basis for the December 31, 2023 and December 31, 2024 GASB Statement No. 75 reports is expected to be this valuation (as of December 31, 2022), where roll-forward techniques will be applied.

Comments

Comment G: The Michigan State Treasurer has established uniform actuarial assumptions as required by Public Act 202 (PA 202) of 2017 for use with the annual Form 5572 (Retirement System Annual Report). The use of the uniform assumptions for reporting purposes is required for each future fiscal year ending December 31. Consistent with past practice, GRS plans to provide the necessary PA 202 uniform assumption information as part of the December 31, 2023 and December 31, 2024 GASB Statement No. 75 reports.

Comment H: Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the market value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations;
- A funded status measurement of 100% is not synonymous with no required future contribution. If the funded status were 100%, the Plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit); and
- The measure is inappropriate for assessing the need for or the amount of future employer contributions.

SECTION B

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Initial premium rates were developed separately for each class (pre-65 and post-65). The rates were calculated by using actual claims and exposure data for the period of January 2020 through December 2022 adjusted for catastrophic claims, plus the load for administration, network access fee, and stop loss premiums. The claim and exposure experience of the active employees was used in the premium development due to the low credibility of the retiree only population. The self-insured medical and prescription drug data was provided by the Road Commission. The medical data was analyzed for the pre-65 and post-65 participants separately since Medicare is available for the post-65 participants and has a significant impact on the claims experience. Furthermore, since the prescription drug claims and the medical claims exhibit different trends and claim payment patterns, we analyzed these claims separately as well.

The benefit options available to future retirees are different than current retirees. We have developed separate premium rates for future retirees in order to reflect the benefit differences.

Age graded and sex distinct premiums are utilized in this valuation. The premiums developed by the preceding process are appropriate for the unique age and sex distribution. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process “distributes” the average premium over all age/sex combinations and assigns a unique premium for each specific age/sex combination. The age/sex specific premiums more accurately reflect the health care utilization and cost at that age. We did not “age grade” the dental premium rates for this valuation since dental claims do not vary significantly by age. The monthly dental benefit used in this valuation is \$41.67 per person, which is based on the \$500 per year maximum benefit, per covered individual.

The tables below show the resulting medical and prescription drug one-person monthly premiums at select ages.

For Those Not Eligible for Medicare (Pre-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
40	\$ 505.08	\$ 820.71	\$ 507.19	\$ 824.14
50	818.72	1,008.59	822.14	1,012.80
60	1,391.45	1,370.10	1,397.26	1,375.82
64	1,692.05	1,596.83	1,699.11	1,603.50

For Those Eligible for Medicare (Post-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
65	\$ 565.07	\$ 532.97	\$ 565.82	\$ 533.68
75	661.13	645.12	662.01	645.98
85	699.11	707.34	700.04	708.28



Retiree Premium Rate Development

The State of Michigan enacted Public Act 152, which defines a maximum benefit for all Public Employer medical plans. The resulting limits for the 2023 and 2024 calendar years are as follows:

Calendar Year	Individual Coverage	Two-Person Coverage
2023	\$ 7,399.47	\$ 15,474.60
2024	7,702.85	16,109.06

The Road Commission's administrative practice related to the Public Act 152 hard caps has decreased future health care costs for the Washtenaw County Road Commission Retiree Health Care Plan, when compared to the administrative practice in existence prior to the implementation of Public Act 152. Additionally, for valuation purposes, future retiree liabilities were based strictly on the Public Act 152 hard caps.

Health Care Cost Trend Assumption

The health care cost trend rate is the rate of change in per capita health care claims over time as a result of factors such as medical inflation, utilization of health care services, plan design, and technological improvements. It is a crucial economic assumption that is required for measuring retiree health care benefit obligations.

Retiree health care valuations use a health care cost trend assumption (trend vector) that changes over the years. The trend vector used in this valuation begins with a near-term trend assumption and declines over a time to an ultimate trend rate. The near-term rates reflect the increases in the current cost of health care goods and services. The process of trending down to a lower ultimate trend relies on the theory that premiums will moderate over the long term, otherwise the health care sector would eventually consume the entire GDP. It is on this basis that we project premium rate increases will continue to exceed wage inflation for the next twelve years, but by less each year until leveling off at an ultimate rate, assumed to be 3.50% in this valuation.

While experience is often the best starting point for future costs, GRS does not rely on a group's experience in setting the near-term trend assumptions since trends vary significantly from year to year and are not credible for most groups. Therefore, professional judgment, trends from GRS' book of business and industry benchmarks (e.g., trend reports from various Pharmacy Benefit Management (PBM) organizations and national health care benefit consulting firms) are used in conjunction with a group's historical experience to establish the trend assumptions.

The Public Act 152 hard caps are assumed to increase 3.50% in each future year.

Retiree Premium Rate Development

The combined medical and prescription drug per capita costs are projected to increase as shown in the table below:

Year After Valuation	Health Care Trend Inflation Rates	
	Medical/Drug	
	Pre-65	Post-65
1	7.50%	6.25%
2	7.25%	6.00%
3	6.75%	5.75%
4	6.50%	5.50%
5	6.00%	5.25%
6	5.75%	5.00%
7	5.25%	4.75%
8	5.00%	4.50%
9	4.50%	4.25%
10	4.25%	4.00%
11	3.75%	3.75%
12+	3.50%	3.50%

Actuarial Disclosures

The premium rates used in this valuation were developed using proprietary Excel models which, in James E. Pranschke’s professional judgment, provide the initial projected costs which are consistent with the purposes of the valuation. We perform tests to ensure that the models, in their entirety, reasonably represent that which is intended to be modeled.

Aging factors used in the premium development models were developed based on the information and data from a 2013 study commissioned by the Society of Actuaries entitled “Health Care Costs – From Birth to Death.”

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates and the health care trend rates shown above.



James E. Pranschke, FSA, FCA, MAAA

SECTION C

SUMMARY OF BENEFITS

Washtenaw County Road Commission Retiree Health Care Plan Summary of the Benefit Provisions as of December 31, 2022

Leaving Employment as a Result of	Eligibility for Benefit	Benefit Provided by Employer		Retiree Share of Cost	
		Retiree	Spouse	Retiree	Spouse
Normal Retirement	Age 60 with 8 years of service Age 55 with 25 years of service	Medical and Prescription Drug Dental up to \$500	Medical and Prescription Drug Dental up to \$500	Excess over PA 152 Hard Cap*	Excess over PA 152 Hard Cap*
Early Retirement	None				
Deferred Vested Termination	None				
Non-Duty Disability	8 years of service must draw pension immediately	Medical and Prescription Drug Dental up to \$500	Medical and Prescription Drug Dental up to \$500	Excess over PA 152 Hard Cap*	Excess over PA 152 Hard Cap*
Duty Disability	8 years of service must draw pension immediately	Medical and Prescription Drug Dental up to \$500	Medical and Prescription Drug Dental up to \$500	Excess over PA 152 Hard Cap*	Excess over PA 152 Hard Cap*
Non-Duty Death-in-Service	8 years of service must draw pension immediately		Medical and Prescription Drug Dental up to \$500		Excess over PA 152 Hard Cap*
Duty Death-in-Service	8 years of service must draw pension immediately		Medical and Prescription Drug Dental up to \$500		Excess over PA 152 Hard Cap*

* Associated retirees and spouses of members retiring after January 1, 2012:

- Are responsible for any portion of the premium that exceeds the PA 152 Hard Cap; and
- For the portion of the premium below the PA 152 Hard Cap receive 5% of the premium paid by the Road Commission per year of service (100% at 20 years of service).



Washtenaw County Road Commission Retiree Health Care Plan

Summary of Benefit Provisions as of December 31, 2022

Spouse Continuation

Surviving spouse may continue coverage.

Dental and Vision Coverage

Members and their spouse who retire after January 1, 2002 and meet retiree eligibility receive up to \$500 per year per covered individual for dental coverage. Retirees are not eligible for vision coverage.

Opt-Out Conditions

Retirees may opt out of Retiree Health Care Benefits from the Washtenaw County Road Commission. Any opt out benefits retirees may receive are not an Other Post Employment Benefit (OPEB) and are not included for purposes of this valuation.

Health Care Benefit

Associated retirees and spouses of members retiring after January 1, 2012:

- Are responsible for any portion of the premium that exceeds the PA 152 Hard Cap; and
- For the portion of the premium below the PA 152 Hard Cap receive 5% of the premium paid by the Road Commission per year of service (100% at 20 years of service).

Life Insurance

The spouse of employees who retired prior to October 2002 receives a \$5,000.00 death benefit and \$7,500.00 if they retired after that date.

Benefit Eligibility

Members hired after January 1, 2012 no longer receive retiree health insurance (medical, prescription drug, dental, and life insurance). Instead, these members participate in a Health Care Savings Plan.



SECTION D

SUMMARY OF VALUATION DATA

Washtenaw County Road Commission Retiree Health Care Plan Total Eligible Active Members as of December 31, 2022 by Age and Years of Service

Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
30-34			2					2
35-39			1	1				2
40-44		1	1	2	1			5
45-49			3	2	4	1		10
50-54			4	2	6	5		17
55-59				1	1	1		3
60-64			1	1		1	1	4
Totals		1	12	9	12	8	1	43

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

OPEB Group	Count	Age	Service
Non-Union	21	48.9 yrs.	20.5 yrs.
TPOAM	22	49.9	18.8
Total	43	49.4	19.6

Washtenaw County Road Commission Retiree Health Care Plan Total Inactive Members as of December 31, 2022

Number of Retiree and Beneficiary Contracts

	Opt-Out/ Ineligible [^]	One-Person Coverage [#]	Two-Person Coverage ^{*#}	Total
Male	3	16	68	87
Female	1	37	5	43
Total	4	53	73	130

** Includes family coverage.*

Includes retirees with dental coverage only.

^ Includes retirees with life insurance coverage only.

Age	Current Retirees		
	Number of Those Covered [#]		
	Non-Union	TPOAM	Total
0-44		1	1
45-49	1		1
50-54			0
55-59	4	8	12
60-64	17	11	28
65-69	13	10	23
70-74	14	9	23
75-79	6	4	10
80-84	8	9	17
85-89	3	5	8
90-94	6		6
95+		1	1
Totals	72	58	130

Includes 4 retirees with life insurance coverage only.

There are no terminated members eligible for deferred Plan benefits.

Washtenaw County Road Commission Retiree Health Care Plan Reported Financial information

(Market Value)

	<u>2021</u>	<u>2022</u>
Additions		
Contributions		
Employer*	\$ 2,280,230	\$ 2,192,906
Nonemployer Contributing Entities	-	-
Active Employees	-	-
Other	-	-
Total Contributions	<u>\$ 2,280,230</u>	<u>\$ 2,192,906</u>
Investment Income		
Net Appreciation in Fair Value of Investments	\$ -	\$ -
Interest and Dividends	2,501,141	(2,129,921)
Less Investment Expense	-	-
Net Investment Income	<u>\$ 2,501,141</u>	<u>\$ (2,129,921)</u>
Other	\$ -	\$ -
Total Additions	<u>\$ 4,781,371</u>	<u>\$ 62,985</u>
Deductions		
Benefit payments, including refunds of employee contributions*	\$ 1,780,230	\$ 1,692,906
OPEB Plan Administrative Expense	34,732	34,327
Other	-	-
Total Deductions	<u>\$ 1,814,962</u>	<u>\$ 1,727,233</u>
Net Increase in Net Position	<u>\$ 2,966,409</u>	<u>\$ (1,664,248)</u>
Net Position Restricted for OPEB		
Beginning of Year (January 1)	<u>\$ 16,165,901</u>	<u>\$ 19,132,310</u>
End of Year (December 31)	<u>\$ 19,132,310</u>	<u>\$ 17,468,062</u>

* Includes amounts being paid outside of the Trust. Excludes opt-out payments.

All information shown above was reported for purposes of the December 31, 2021 and December 31, 2022 GASB Statement No. 75 reports.



SECTION E

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

Actuarial Cost Method. Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

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

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded Actuarial Accrued Liabilities (UAAL) (full funding credit if assets exceed liabilities) were amortized as a level dollar amount. The UAAL was determined using the actuarial value of assets and actuarial accrued liability calculated as of the valuation date and projected to the beginning of the fiscal year at the assumed rate of investment return.

Actuarial Value of Assets. The Actuarial Value of Assets is set equal to the reported market value of assets. Assets were allocated among the subgroups shown in this report in proportion to each group’s Actuarial Accrued Liability on the valuation date.

Amortization Factors. The following amortization factors were used in developing the Actuarially Determined Contribution for the fiscal years shown:

	Fiscal Year Ending December 31,	
	2023	2024
Amortization Period (in years)	14	13
Level Dollar	9.0481	8.6469

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

All assumptions are expectations of future experience, not market measures. The rationale for the rates of merit and longevity salary increase, base wage inflation, rates of mortality, normal retirement rates, early retirement rates, rates of separation from active membership, disability rates, and marriage assumption used in this valuation is included in the MERS five-year experience study for the period January 1, 2014 to December 31, 2018, issued February 14, 2020. These assumptions were first used in the December 31, 2020 OPEB Funding Valuation.

The rate of investment return was 7.00% a year, compounded annually net after investment expenses.

Rates of price inflation are not specifically used for this valuation. However, a rate of price inflation of 2.50% would be consistent with other assumptions in this report.

The rates of salary increase used for individual members are in accordance with the following table.

Percentage Increase in Salary at Sample Years of Service							
Sample Years of Service	Base (Wage Inflation)	Merit and Longevity	Total Percentage Increase in Pay	Sample Years of Service	Base (Wage Inflation)	Merit and Longevity	Total Percentage Increase in Pay
0	3.00 %	6.70 %	9.70 %	21	3.00 %	0.60 %	3.60 %
1	3.00	4.60	7.60	22	3.00	0.50	3.50
2	3.00	3.20	6.20	23	3.00	0.40	3.40
3	3.00	2.70	5.70	24	3.00	0.40	3.40
4	3.00	2.30	5.30	25	3.00	0.40	3.40
5	3.00	1.90	4.90	26	3.00	0.30	3.30
6	3.00	1.70	4.70	27	3.00	0.30	3.30
7	3.00	1.30	4.30	28	3.00	0.30	3.30
8	3.00	1.20	4.20	29	3.00	0.30	3.30
9	3.00	1.20	4.20	30	3.00	0.20	3.20
10	3.00	1.10	4.10	31	3.00	0.20	3.20
11	3.00	1.10	4.10	32	3.00	0.20	3.20
12	3.00	0.90	3.90	33	3.00	0.20	3.20
13	3.00	0.90	3.90	34	3.00	0.20	3.20
14	3.00	0.80	3.80	35	3.00	0.10	3.10
15	3.00	0.70	3.70	36	3.00	0.10	3.10
16	3.00	0.70	3.70	37	3.00	0.10	3.10
17	3.00	0.60	3.60	38	3.00	0.10	3.10
18	3.00	0.60	3.60	39	3.00	0.10	3.10
19	3.00	0.60	3.60	40 and Over	3.00	0.00	3.00
20	3.00	0.60	3.60				

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

The rates of mortality used for individual members are based upon the sex distinct Pub-2010 tables, as published by the Society of Actuaries, and include a margin for future mortality improvements projected using a fully generational improvement scale. The tables used were as follows:

- **Healthy Pre-Retirement Mortality:** Sex distinct Pub-2010 General Employees table without adjustment. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries. Ninety percent (90%) of active member deaths are assumed to be non-duty deaths and 10% of the deaths are assumed to be duty related.
- **Healthy Post-Retirement Mortality:** Sex distinct Pub-2010 General Healthy Retiree tables scaled by a factor of 106%. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries.
- **Disability Retirement Mortality:** Sex distinct PubNS-2010 Disabled tables without adjustment. The base year is 2010 and future mortality improvements are assumed each year using scale MP-2019, as published by the Society of Actuaries.

Note that the Pub-2010 tables do not include rates at all ages. For purposes of selecting mortality rates that are not otherwise published, we use the corresponding Employee or Healthy Retiree rates as applicable.

The life expectancies and mortality rates projected for employees are shown below for selected ages, based on retirements in 2022. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
20	70.17	72.88	0.04%	0.01%
25	64.88	67.55	0.03	0.01
30	59.60	62.23	0.05	0.02
35	54.36	56.94	0.07	0.03
40	49.17	51.67	0.09	0.04
45	44.01	46.43	0.10	0.06
50	38.88	41.21	0.14	0.08
55	33.80	36.04	0.21	0.13
60	28.84	30.95	0.33	0.20
65	24.00	25.95	0.47	0.29
70	19.27	21.03	0.65	0.44
75	14.63	16.23	0.99	0.73
80	10.10	11.57	1.57	1.23
85	6.97	8.11	7.90	5.87
90	4.85	5.62	13.68	10.92

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

The life expectancies and mortality rates projected for non-disabled retirees are shown below for selected ages, based on retirements in 2022. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
20	66.94	70.24	0.04%	0.02%
25	61.57	64.84	0.04	0.01
30	56.20	59.44	0.05	0.02
35	50.89	54.07	0.07	0.03
40	45.61	48.73	0.09	0.05
45	40.36	43.42	0.11	0.06
50	35.15	38.13	0.30	0.22
55	30.27	33.16	0.44	0.31
60	25.57	28.30	0.67	0.43
65	21.09	23.58	0.97	0.63
70	16.85	19.05	1.50	1.01
75	12.93	14.81	2.55	1.79
80	9.49	11.01	4.58	3.30
85	6.68	7.81	8.38	6.22
90	4.62	5.37	14.50	11.58

The life expectancies and mortality rates projected for disabled retirees are shown below for selected ages, based on retirements in 2022. Retirements in future years will reflect improvements in life expectancy:

Age	Expected Years of Life Remaining		Mortality Rates	
	Male	Female	Male	Female
20	52.54	56.29	0.44%	0.26%
25	47.71	51.11	0.34	0.20
30	42.85	45.97	0.50	0.36
35	38.33	41.21	0.68	0.55
40	34.08	36.82	0.84	0.75
45	30.00	32.70	1.05	0.98
50	26.18	28.87	1.50	1.42
55	22.73	25.44	2.04	1.81
60	19.63	22.25	2.59	2.08
65	16.74	19.04	3.06	2.18
70	13.93	15.69	3.63	2.57
75	11.16	12.41	4.67	3.59
80	8.59	9.48	6.65	5.57
85	6.39	7.10	9.95	8.83
90	4.62	5.31	15.15	12.99

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. Certain retirement service amounts (normal retirement) or age (early reduced pension retirement) may not apply, depending on the benefit age of first eligibility.

Normal Retirement – Unreduced Pension Benefit Service Based Retirement Rates

Sample Years of Service	Percent of Eligible Active Members Retiring within Next Year	Sample Years of Service	Percent of Eligible Active Members Retiring within Next Year
Under 5	15.00 %	23	26.00 %
5	15.00	24	30.00
6	15.00	25	34.00
7	15.00	26	25.00
8	15.00	27	25.00
9	15.00	28	25.00
10	20.00	29	25.00
11	20.00	30	25.00
12	20.00	31	28.00
13	20.00	32	28.00
14	20.00	33	28.00
15	20.00	34	28.00
16	20.00	35	25.00
17	20.00	36	25.00
18	20.00	37	25.00
19	20.00	38	25.00
20	20.00	39	25.00
21	22.00	40 and Over	25.00
22	24.00		

Rates of retirement are set to 100% beginning at age 85.

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

Early Retirement - Reduced Pension Benefit Age Based Retirement Rates

Retirement Ages	Percent of Eligible Active Members Retiring within Next Year
50	4.00 %
51	4.00
52	4.00
53	4.00
54	4.00
55	4.00
56	4.00
57	4.00
58	4.00
59	4.00

In the case a member’s eligibility for early reduced pension retirement precedes eligibility for OPEB retirement, the percent of eligible active members retiring within the next year is as described in the table above or 3.0%, whichever is smaller.

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

Rates of separation from active membership are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The rates of separation from active membership do not apply to members eligible to retire, and do not include separation on account of death or disability. The assumed rates of separation applied in the current valuation are based on years of service and different rates apply to public safety and all other groups. Sample rates of separation from active employment are shown below:

Sample Years of Service	Percent of Active Members Withdrawing Within the Next Year	
	Public Safety	All Others
0	13.90 %	23.40 %
1	11.60	19.50
2	9.40	15.80
3	7.40	12.50
4	6.10	10.30
5	4.90	8.30
6	4.30	7.20
7	3.90	6.60
8	3.60	6.00
9	3.40	5.70
10	3.20	5.40
11	3.10	5.20
12	2.80	4.70
13	2.70	4.50
14	2.50	4.20
15	2.40	4.00
16	2.30	3.90
17	2.20	3.70
18	2.00	3.40
19	1.90	3.20
20	1.80	3.10
21	1.80	3.00
22	1.70	2.80
23	1.70	2.80
24	1.60	2.70
25 and Over	1.50	2.60

Actuarial Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

Disability Rates

Disability rates are used in the valuation to estimate the incidence of member disability in future years. The assumed rates of disablement at various ages are shown below:

Sample Ages	Percent Becoming Disabled within Next Year
20	0.02%
25	0.02
30	0.02
35	0.05
40	0.08
45	0.20
50	0.29
55	0.38
60	0.39
65	0.39

80% of the disabilities are assumed to be non-duty and 20% of the disabilities are assumed to be duty related. For those plans which have adopted disability provision D-2, for pension benefit purposes, 40% of the disabilities are assumed to be non-duty and 60% are assumed to be duty related.

Miscellaneous and Technical Assumptions for Washtenaw County Road Commission Retiree Health Care Plan as of December 31, 2022

- Administrative Expenses** No explicit assumption has been made for administrative expenses.
- Decrement Operation** Disability and withdrawal do not operate during retirement eligibility.
- Decrement Timing** Decrements of all types are assumed to occur mid-year.
- Eligibility Testing** Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- Incidence of Contributions** Contributions are assumed to be received continuously throughout the year based upon the computed contribution in this report.
- Marriage Assumption** 80% of males and 80% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
- Medicare Coverage** Assumed to be available for all covered employees on attainment of age 65. Disabled retirees were assumed to be eligible for Medicare coverage at age 65.
- Life Insurance** The lump sum death benefit was valued.
- Data Assumptions** Retirees reported with an employer cost share dollar amount who were reported as retired prior to 2012 were assumed to be impacted by the PA 152 Hard Caps.
- Health Care Coverage at Retirement** The table below shows the assumed portion of future retirees electing one-person or two-person/family coverage, or opting-out of coverage entirely.

	One-Person	Two-Person/Family		Opt-Out
		Electing	Continuing	
Male	10%	90%	100%	0%
Female	10%	90%	100%	0%

APPENDIX A

HISTORICAL FUNDED RATIO INFORMATION

Historical Funded Ratio

Actuarial Valuation Date December 31	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded (Overfunded) AAL (b)-(a)	Funded Ratio (a)/(b)	Present Value of Future Benefits (c)
2016	\$9,606,771	\$26,032,034	\$16,425,263	36.9 %	\$28,064,349
2018	11,504,542	25,638,883	14,134,341	44.9 %	27,000,842
2020	16,165,901	27,264,727	11,098,826	59.3 %	28,112,853
2022	17,468,062	25,909,870	8,441,808	67.4 %	26,663,214

1 The Actuarial Value of Assets is set equal to the Market Value of Assets.

Valuation results prior to December 31, 2022 are based on a 7.25% investment rate of return. The investment rate of return beginning with the December 31, 2022 valuation is 7.00%.

APPENDIX B

GLOSSARY

Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. 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.”

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 assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic 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.

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.”

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

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.

Actuarially Determined Contribution. The Actuarially Determined Contribution is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The Actuarially Determined Contribution is an amount that is actuarially determined so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded actuarial accrued liability.

Governmental Accounting Standards Board (GASB). GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Implicit Rate Subsidy. It is common practice for employers to allow retirees to continue in the employer’s group health insurance plan (which also covers active employees), often charging the retiree some portion of the premium charged for active employees. Under the theory that retirees have higher utilization of services, the difference between the true cost of providing retiree coverage and what the retiree is being charged is known as the implicit rate subsidy.



Glossary

Medical Trend Rate (Health Care Inflation). The increase in the cost of providing health care benefits over time. Trend includes such elements as pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost. 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.

Other Postemployment Benefits (OPEB). OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance, dental, vision, prescription drugs, life insurance or other health care benefits.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded actuarial accrued liability.”

Valuation Assets. The value of current plan assets recognized for valuation purposes.

