

Washtenaw County Road Commission
Retiree Health Care Plan
Actuarial Valuation Report
As of December 31, 2018



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January 10, 2020

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

Dear Mr. Ackerman:

The results of the December 31, 2018 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 System's funding progress, and to determine the Actuarially Determined Contributions for the fiscal years ending December 31, 2019 and December 31, 2020. 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 satisfy 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.

The findings in this report are based on data and other information through December 31, 2018. 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

The valuation was 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. Additional information about the actuarial assumptions is included in the section of this report entitled Actuarial Cost Methods and Assumptions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. 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.

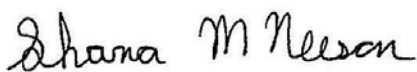
Mark Buis and Shana M. Neeson are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



Mark Buis, FSA, EA, FCA, MAAA



Shana M. Neeson, ASA, FCA, MAAA

MB/SMN:sc



EXECUTIVE SUMMARY

Executive Summary

Actuarially Determined Contribution

Please note that beginning with the fiscal year ending December 31, 2017, GASB Statement No. 43 was replaced by GASB Statement No. 74. Also, beginning with the fiscal year ending December 31, 2018, GASB Statement No. 45 was replaced by GASB Statement No. 75. It is our understanding that the Road Commission is only required to comply with GASB Statement No. 75, and as such requires a separate GASB Statement No. 75 report at the completion of each fiscal year. As such, there will no longer be an “Annual Required Contribution” calculated in funding valuation reports. Therefore, we have determined the “Actuarially Determined Contribution” for subsequent years.

We have calculated the Actuarially Determined Contribution for the fiscal years ending December 31, 2019 and December 31, 2020 under an assumed long-term rate of return of 7.25%. 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, 2019 | \$1,560,377 | \$1,569,752 |
| December 31, 2020 | 1,554,805 | 1,646,893 |

For additional details please see the Section titled “Valuation Results.”

Liabilities and Assets – As of December 31, 2018

| | |
|---|--------------|
| 1. Present Value of Future Benefit Payments | \$27,000,842 |
| 2. Actuarial Accrued Liability | 25,638,883 |
| 3. Plan Assets | 11,504,542 |
| 4. Unfunded Actuarial Accrued Liability (2) – (3) | 14,134,341 |
| 5. Funded Ratio (3)/(2) | 44.9% |

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 – Results by Division as of December 31, 2018

| | Non-Union | TPOAM | Total |
|--|-------------------|-------------------|---------------------|
| A. Present Value of Future Benefits | | | |
| i) Retirees and Beneficiaries | \$ 10,148,706 | \$ 9,494,493 | \$ 19,643,199 |
| ii) Vested Terminated Members | 0 | 0 | 0 |
| iii) Active Members | <u>3,593,812</u> | <u>3,763,831</u> | <u>7,357,643</u> |
| Total Present Value of Future Benefits | 13,742,518 | 13,258,324 | 27,000,842 |
| B. Present Value of Future Normal Costs | 580,221 | 781,738 | 1,361,959 |
| C. Actuarial Accrued Liability (A.-B.) | 13,162,297 | 12,476,586 | 25,638,883 |
| D. Actuarial Value of Assets | 5,906,115 | 5,598,427 | 11,504,542 |
| E. Unfunded Actuarial Accrued Liability (C.-D.) | 7,256,182 | 6,878,159 | 14,134,341 |
| F. Funded Ratio (D./C.) | 44.9% | 44.9% | 44.9% |
| G. Fiscal Year Ending December 31, 2019 | | | |
| i) Employer Normal Cost | \$ 80,418 | \$ 98,853 | \$ 179,271 |
| ii) Amortization of UAAL (18 years)* | <u>709,022</u> | <u>672,084</u> | <u>1,381,106</u> |
| Actuarially Determined Contribution | \$ 789,440 | \$ 770,937 | \$ 1,560,377 |
| H. Fiscal Year Ending December 31, 2020 | | | |
| Actuarially Determined Contribution | \$ 785,302 | \$ 769,503 | \$ 1,554,805 |

* The Unfunded Actuarial Accrued Liability (UAAL) was amortized as a level dollar amount over a closed period of 18 years for the fiscal year ending December 31, 2019 and decreasing by 1 each year thereafter.

The long-term rate of investment return used in this valuation is 7.25%.

Comments

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

- Favorable healthcare claims experience in recent years;
- Lower than expected increases in the hard PA 152 hard cap amounts, since the last valuation; and
- Assumption Change: Decreasing the ultimate health care trend rate from 4.00% to 3.50%.

Partially offsetting these factors was unfavorable experience due to:

- Assumption Changes:
 - Resetting the initial health care cost trend assumption to 8.25%; and
 - Updating the mortality tables and other demographic assumptions to be consistent with the MERS pension assumptions.

The combined impact of the various changes in assumptions noted above decreased the liabilities by approximately \$1 million.

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 7.25%.

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 18-year period for the fiscal year ending December 31, 2019, 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: As reported by the Road Commission, the division formerly known as Teamsters is now known as TPOAM. In addition, as reported by the Road Commission, due to decertification, the division formerly known as AFSCME is included as part of the Non-Union division.

Comments

COMMENT G: On December 20, 2019, the “Further Consolidated Appropriations Act of 2020,” H.R. 1865, was signed into law. The Act repeals the “Cadillac tax” which was a tax provision from the Affordable Care Act (ACA). As a result, any liability/provision analysis included as part of the prior funding valuation is no longer required. In addition, no further adjustments associated with the “Cadillac tax” are required. For purposes of the Washtenaw County Road Commission Retiree Health Care Plan the repeal of the “Cadillac tax” does not have an impact on plan liabilities because no load was applied as part of the December 31, 2016 funding valuation.

COMMENT H: 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, 2019 and December 31, 2020 GASB Statement No. 75 reports is expected to be this valuation (as of December 31, 2018), where roll-forward techniques will be applied.

COMMENT I: 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 the fiscal year ending December 31, 2019. As already approved by the Road Commission, GRS plans to provide the necessary PA 202 uniform assumption information as part of the GASB Statement No. 75 report.

COMMENT J: 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; 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 2016 through December 2018 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 and drug 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 | \$ 398.98 | \$ 648.31 | \$ 402.84 | \$ 654.59 |
| 50 | 646.74 | 796.72 | 653.00 | 804.43 |
| 60 | 1,099.16 | 1,082.29 | 1,109.80 | 1,092.77 |
| 64 | 1,336.61 | 1,261.39 | 1,349.55 | 1,273.61 |

| For Those Eligible for Medicare (Post-65) | | | | |
|--|------------------------|---------------|-------------------------|---------------|
| Age | Future Retirees | | Current Retirees | |
| | Male | Female | Male | Female |
| 65 | \$ 621.25 | \$ 585.96 | \$ 608.47 | \$ 573.91 |
| 75 | 726.86 | 709.25 | 711.90 | 694.66 |
| 85 | 768.61 | 777.66 | 752.79 | 761.66 |

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 2019 and 2020 calendar years are as follows:

| Calendar Year | Individual Coverage | Two-Person Coverage |
|---------------|---------------------|---------------------|
| 2019 | \$ 6,685.17 | \$ 13,980.75 |
| 2020 | 6,818.87 | 14,260.37 |

Public Act 152 is anticipated to decrease future health care costs for the Washtenaw County Road Commission Retiree Health Care Plan.

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 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, 2018

| 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, 2018

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 PARTICIPANT DATA

Washtenaw County Road Commission
Total Eligible Active Members as of December 31, 2018
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. |
| 25-29 | | 1 | | | | | | 1 |
| 30-34 | 1 | 1 | 1 | | | | | 3 |
| 35-39 | 1 | 1 | 2 | 2 | | | | 6 |
| 40-44 | | 3 | 4 | 3 | | | | 10 |
| 45-49 | | 1 | 2 | 5 | 6 | | | 14 |
| 50-54 | | 1 | 2 | 6 | 6 | 1 | 3 | 19 |
| 55-59 | | | 4 | 1 | 2 | 1 | | 8 |
| 60-64 | | | | 2 | 1 | 1 | | 4 |
| Totals | 2 | 8 | 15 | 19 | 15 | 3 | 3 | 65 |

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 | 30 | 48.5 yrs. | 18.3 yrs. |
| TPOAM | 35 | 47.5 | 16.3 |
| Total | 65 | 48.0 | 17.2 |

Washtenaw County Road Commission Total Inactive Members as of December 31, 2018

Number of Retiree and Beneficiary Contracts

| | Opt-Out/ Ineligible | One-Person Coverage# | Two-Person Coverage*# | Total |
|--------------|------------------------|-------------------------|--------------------------|------------|
| Male | 0 | 21 | 63 | 84 |
| Female | 1 | 36 | 5 | 42 |
| Total | 1 | 57 | 68 | 126 |

** Includes family coverage.*

Includes retirees with dental coverage only.

| Age | Current Retirees | | |
|---------------|-------------------------|-----------|------------|
| | Number of Those Covered | | |
| | Non-Union | TPOAM | Total |
| 0-44 | 1 | | 1 |
| 45-49 | | | 0 |
| 50-54 | 1 | | 1 |
| 55-59 | 8 | 8 | 16 |
| 60-64 | 12 | 12 | 24 |
| 65-69 | 15 | 9 | 24 |
| 70-74 | 10 | 9 | 19 |
| 75-79 | 8 | 8 | 16 |
| 80-84 | 2 | 7 | 9 |
| 85-89 | 7 | 4 | 11 |
| 90-94 | 2 | 1 | 3 |
| 95 + | 1 | | 1 |
| Totals | 67 | 58 | 125 |

There are no terminated members eligible for deferred Plan benefits.

Washtenaw County Road Commission

Reported Financial information

(Market Value)

| | <u>December 31, 2018</u> |
|--|-----------------------------|
| Additions | |
| Contributions | |
| Employer* | \$ 2,030,897 |
| Nonemployer Contributing Entities | - |
| Active Employees | - |
| Other | - |
| Total Contributions | <u>\$ 2,030,897</u> |
| Investment Income | |
| Net Appreciation in Fair Value of Investments | \$ - |
| Interest and Dividends | (501,053) |
| Less Investment Expense | - |
| Net Investment Income | <u>\$ (501,053)</u> |
| Other | \$ - |
| Total Additions | <u>\$ 1,529,844</u> |
| Deductions | |
| Benefit payments, including refunds of employee contributions* | \$ 1,530,897 |
| OPEB Plan Administrative Expense | 31,516 |
| Other | - |
| Total Deductions | <u>\$ 1,562,413</u> |
| Net Increase in Net Position | \$ (32,569) |
| Net Position Restricted for OPEB | |
| Beginning of Year (January 1, 2018) | <u>\$ 11,537,111</u> |
| End of Year (December 31, 2018) | <u><u>\$ 11,504,542</u></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, 2018 GASB Statement No. 75 report.

SECTION E

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods for Washtenaw County Road Commission as of December 31, 2018

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 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 Actuarially Determined Contribution for the fiscal years shown:

| | Fiscal Year Ending December 31, | |
|--------------|---------------------------------|--------|
| | 2019 | 2020 |
| Level Dollar | 10.2341 | 9.9402 |

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

All assumptions are expectations of future experience, not market measures. The rationale for the rates of merit and longevity salary increase, rates of mortality, early retirement rates, rates of separation from active membership, and disability rates used in this valuation is included in the MERS 5-year experience study for the period January 1, 2009 to December 31, 2013 performed by the prior MERS pension actuary. We have not performed an independent analysis of plan experience, but we anticipate completing the next 5-year experience study for the period January 1, 2014 to December 31, 2018 in early 2020. On February 28, 2019, the MERS Board adopted new economic assumptions for pension purposes. These assumptions include a 3.00% wage inflation assumption which has been reflected in this valuation.

The rate of investment return was 7.25% 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. This assumption is used to project a member's current salary to the salaries upon which future contributions will be based.

| Sample Ages | % Increase in Salary at Sample Ages | | |
|-------------|-------------------------------------|-----------------------|----------------------------------|
| | Merit & Longevity | Base (Wage Inflation) | Total Percentage Increase in Pay |
| 20 | 11.00% | 3.00% | 14.00% |
| 25 | 7.20 | 3.00 | 10.20 |
| 30 | 3.10 | 3.00 | 6.10 |
| 35 | 1.90 | 3.00 | 4.90 |
| 40 | 1.20 | 3.00 | 4.20 |
| 45 | 0.81 | 3.00 | 3.81 |
| 50 | 0.52 | 3.00 | 3.52 |
| 55 | 0.30 | 3.00 | 3.30 |
| 60 | 0.00 | 3.00 | 3.00 |

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

The rates of post-retirement mortality used for individual members are in accordance with the following tables.

The mortality table used to project the mortality experience of non-disabled plan members is a 50% Male - 50% Female blend of the following tables:

1. The RP-2014 Healthy Annuitant Mortality Tables, with rates multiplied by 105%
2. The RP-2014 Employee Mortality Tables
3. The RP-2014 Juvenile Mortality Tables

For ages 0-17, we use the rates in Table 3; for ages 18-49, we use the rates in Table 2; for ages 70 and older, we use the rates in Table 1; and for ages 50-69, we blend Table 2 and Table 1 as follows:

- a. Age 50, use 60% of Table 2 and 40% of Table 1
- b. Age 51, use 57% of Table 2 and 43% of Table 1
- c. Etc. ...
- d. Age 69, use 3% of Table 2 and 97% of Table 1

The mortality table used to project the mortality experience of disabled plan members is a 50% Male - 50% Female blend of the RP-2014 Disabled Retiree Mortality Tables.

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.

Possible future mortality improvements are reflected in the mortality assumption. The mortality assumptions include a 10% margin for future mortality improvements, relative to the actual mortality experience seen in the 2009-2013 Experience Study, as performed by the prior MERS pension actuary.

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

The life expectancies and mortality rates projected for non-disabled members are shown below for selected ages:

| Sample Ages | Mortality Rates | Expected Years of Life Remaining |
|----------------|--------------------|-------------------------------------|
| 20 | 63.06 | 0.03% |
| 25 | 58.15 | 0.03 |
| 30 | 53.24 | 0.03 |
| 35 | 48.33 | 0.04 |
| 40 | 43.43 | 0.05 |
| 45 | 38.56 | 0.08 |
| 50 | 33.74 | 0.23 |
| 55 | 29.18 | 0.37 |
| 60 | 24.79 | 0.58 |
| 65 | 20.59 | 0.94 |
| 70 | 16.66 | 1.56 |
| 75 | 13.07 | 2.51 |
| 80 | 9.85 | 4.18 |

The life expectancies and mortality rates projected for disabled members are shown below for selected ages:

| Sample Ages | Mortality Rates | Expected Years of Life Remaining |
|----------------|--------------------|-------------------------------------|
| 20 | 46.95 | 0.47% |
| 25 | 43.14 | 0.54 |
| 30 | 39.24 | 0.55 |
| 35 | 35.33 | 0.65 |
| 40 | 31.52 | 0.82 |
| 45 | 27.98 | 1.30 |
| 50 | 24.87 | 1.62 |
| 55 | 21.91 | 1.89 |
| 60 | 18.97 | 2.18 |
| 65 | 16.04 | 2.63 |
| 70 | 13.19 | 3.43 |
| 75 | 10.54 | 4.77 |
| 80 | 8.18 | 6.88 |

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. To reflect the impact plan design may have on retirement experience, separate retirement rates apply to valuation divisions with pension benefit multipliers less than or equal to 2.50% and greater than 2.50%. Certain retirement ages may not apply, depending on the benefit age of first eligibility.

Normal Retirement - Age Based Benefit Provisions

| Retirement Ages | Percent of Eligible Active Members Retiring within Next Year* | |
|-----------------|---|--|
| | Benefit Multipliers Less Than or Equal to 2.50% | Benefit Multipliers Greater Than 2.50% |
| 50 | 20% | 23% |
| 51 | 20 | 23 |
| 52 | 20 | 24 |
| 53 | 20 | 26 |
| 54 | 20 | 26 |
| 55 | 20 | 30 |
| 56 | 20 | 33 |
| 57 | 21 | 35 |
| 58 | 21 | 39 |
| 59 | 21 | 42 |
| 60 | 21 | 43 |
| 61 | 22 | 48 |
| 62 | 22 | 49 |
| 63 | 22 | 49 |
| 64 | 23 | 50 |
| 65 | 25 | 50 |
| 66 | 25 | 50 |
| 67 | 26 | 50 |
| 68 | 28 | 50 |
| 69 | 30 | 50 |
| 70 | 100 | 100 |

* For those eligible prior to age 50, the retirement rate is 22% per year. Members in a defined contribution plan follow the retirement pattern of those with a defined benefit of less than or equal to 2.50% per year.

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

Early Retirement - Reduced Pension Benefit

| Retirement Ages | Percent of Eligible Active Members Retiring within Next Year |
|-----------------|--|
| 50 | 2.00% |
| 51 | 2.00 |
| 52 | 3.30 |
| 53 | 3.80 |
| 54 | 5.60 |
| 55 | 4.30 |
| 56 | 4.20 |
| 57 | 4.10 |
| 58 | 5.00 |
| 59 | 6.20 |

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%, whichever is smaller. Once the affected member attains OPEB eligibility, the retirement rates as described above are used.

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

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 scaled up or down according to each group's experience.

| Group | Separation Rate Scaling Factor |
|---------------|-----------------------------------|
| All Divisions | 71% |

The base separation rates (see the table below) are multiplied by the scaling factor to obtain the assumed withdrawal rates. Sample rates of separation from active employment, before application of the scaling factor, are shown below.

| Sample Years of Service | % of Active Members Separating within the Next Year |
|----------------------------|--|
| 0 | 19.60% |
| 1 | 16.30 |
| 2 | 13.30 |
| 3 | 10.50 |
| 4 | 8.60 |
| 5 | 6.90 |
| 10 | 4.60 |
| 15 | 3.40 |
| 20 | 2.60 |
| 25 | 2.20 |
| 30 and over | 2.20 |

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

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.

Actuarial Assumptions for Washtenaw County Road Commission as of December 31, 2018

Health care cost trend rates are displayed in the following table:

| Year After Valuation | Health Care Trend Inflation Rates |
|-------------------------|-----------------------------------|
| | Medical/Drug |
| 1 | 8.25% |
| 2 | 7.50 |
| 3 | 7.00 |
| 4 | 6.50 |
| 5 | 6.00 |
| 6 | 5.50 |
| 7 | 5.00 |
| 8 | 4.50 |
| 9 | 4.00 |
| 10 | 3.50 |
| 11 | 3.50 |
| 12 | 3.50 |
| 13 | 3.50 |
| 14 | 3.50 |
| 15 | 3.50 |
| 16 + | 3.50 |

The \$500 maximum dental benefit per covered individual was assumed to remain unchanged for all future years.

Public Act 152 defines a maximum benefit for all Public Employer medical plans. The resulting limits for the 2019 and 2020 calendar years are as follows:

| Calendar Year | Individual Coverage | Two-Person Coverage |
|------------------|------------------------|------------------------|
| 2019 | \$ 6,685.17 | \$ 13,980.75 |
| 2020 | 6,818.87 | 14,260.37 |

We have assumed this limit will increase 3.5% for each future year, and this future limit will apply to each future retired member's benefit in all future years.

Miscellaneous and Technical Assumptions for Washtenaw County Road Commission as of December 31, 2018

- 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** 70% of males and 70% 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.
- Data Assumptions**
- One beneficiary missing date of birth was assumed to have the same date of birth as valued in the December 31, 2016 valuation.
 - Retirees reported with two-person dental coverage and no spouse information were valued with one-person dental coverage (applies to one individual).
 - 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

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 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.