



Pittsfield Charter Township Other Postemployment Benefits

**Revised Actuarial Valuation Report
as of January 1, 2017**

Produced by Cheiron

October 2017

TABLE OF CONTENTS

| <i>Section</i> | <i>Page</i> |
|--|-------------|
| Letter of Transmittal | i |
| Section I Summary of Results | 1 |
| Section II GASB Valuation Results | 5 |
| Section III Sensitivity of Results | 8 |
| Section IV Accounting Disclosures | 9 |
| <i>Appendices</i> | |
| Appendix A Membership Data, Assumptions, and Methods | 12 |
| Appendix B Substantive Plan Provisions | 25 |
| Appendix C Glossary of Terms | 29 |
| Appendix D List of Abbreviations | 31 |

Via Email

October 17, 2017

Board of Trustees
Pittsfield Charter Township
6201 W. Michigan Ave
Ann Arbor, MI 48108

Re: Pittsfield Charter Township Other Postemployment Benefits Valuation

Dear Members of the Board:

The purpose of this report is to present the January 1, 2017 actuarial valuation of Pittsfield Charter Township's Other Postemployment Benefits (OPEB). This report is for the use of the Township and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Cheiron began performing actuarial valuations for Pittsfield Charter Township as of January 1, 2013. Results shown before January 1, 2013 were calculated by the prior actuary.

Appendix A describes the member data, assumptions, and methods used in calculating the figures throughout the report. Appendix B contains a summary of the substantive plan provisions based on documentation provided by and discussions with the Pittsfield Charter Township staff.

In preparing our report, we relied on information (some oral and some written) supplied by Pittsfield Charter Township and its vendors. This information includes, but is not limited to the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with the Actuarial Standard of Practice No. 23.

This valuation report was prepared for the Township for the purposes described herein and for the use by the Plan Auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and, changes in plan provisions or applicable law. Actuarial computations are calculated based on our understanding of GASB 43 and 45 and are for purposes of fulfilling employer financial accounting requirements. Determinations for purposes other than meeting employer financial accounting requirements may be significantly different from the results in this report. This valuation report does not reflect future changes in benefits, penalties, taxes, or administrative costs that may be required as a result of the Patient Protection and Affordable Care Act of 2010, related legislation, or regulations.

The results of this valuation reflect only the financial condition of the Plan as of the valuation date. We recommend reviewing forecasts of the plan's financial condition under alternative scenarios. Such forecasts, however, are beyond the scope of this assignment.

We hereby certify that, to the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we collectively meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron



Gaelle Gravot, FSA, MAAA
Principal Consulting Actuary



Kathleen T. Weaver, FSA, EA, MAAA
Consulting Actuary



William R. Hallmark, ASA, FCA, EA, MAAA
Consulting Actuary

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION I - SUMMARY OF RESULTS

Pittsfield Charter Township has engaged Cheiron to provide a valuation of the Township's Other Postemployment Benefits. The primary purpose of performing this actuarial valuation is to:

- Determine the Annual Required Contribution (ARC), Annual OPEB Cost (AOC), and the Net Other Postemployment Benefit (OPEB) Obligation (NOO) of the Postemployment Benefits under GASB 45 for the fiscal year ending December 31, 2017;
- Provide information for financial statement disclosures under GASB 43 and 45; and,
- Show the sensitivity of the valuation results to changes in health trend assumptions.

We have determined costs, liabilities, and trends for the substantive Plan using actuarial assumptions and methods that we consider reasonable.

GASB's OPEB Requirements

The Governmental Accounting Standards Board (GASB) released Statement 43 regarding financial reporting for post-employment benefit plans other than pension plans and a companion Statement 45 regarding the employer accounting for these plans. Statement 43 is generally applicable where an entity has a separate trust or fund for OPEB benefits. Statement 45, which was adopted in the fiscal year ending June 30, 2007, requires the Plan Sponsor to book the actuarial cost (net of employee, retiree, and their dependents' contributions) of the Plan as an expense on its financial statements and then accrue a liability to the extent actual contributions were less than this expense. Additional disclosures include a description of the Plan, summary of significant accounting policies, contributions, and a schedule of funding progress, along with the methods and assumptions used for those disclosures.

This report does not reflect any changes in postemployment benefit accounting requirements from newly issued GASB Statements for OPEB plans. The new GASB 74 and 75 Statements will be effective for the Plan year ending December 31, 2017, and December 31, 2018, respectively. A separate GASB 74 report for plan year ending December 31, 2017 will be provided once the December 31, 2017 assets are available. For plan year ending December 31, 2018, both GASB 74 and 75, together, will be provided under separate cover. All references and calculations with respect to GASB reflect current Statements 43 and 45.

Implicit Subsidy

GASB 45 requires that the valuation of OPEB plans take into consideration the liability associated with the implicit subsidy that exists when the premium rates charged to active and retired employees are the same, or "blended." This provides the users of the Township's financial statement an estimate of the total value of the promised retiree benefit.

The employer's share of the current coverage costs for active and retired employees should be calculated based on the claim costs or age-adjusted premiums for the employer. The current age adjusted costs used in this valuation are based on the estimated age related costs for the applicable plans offered by the Township to its employees and retirees.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION I - SUMMARY OF RESULTS

It is our opinion that the Actuarial Standard of Practice 6 (ASOP No. 6) requires the recognition of the age related costs and the inherent implicit subsidy that exists in the health benefit plans offered by Pittsfield Charter Township. However, while the valuation results include the liability and ARC associated with the implicit subsidy, each year the implicit subsidy is actually paid through the active employee premiums. Because of this, the Township would not need to contribute the full ARC to the trust to be considered as having contributed the full ARC. Instead, the Township could contribute the full ARC less the amount of the implicit subsidy for the year as shown in this report.

Valuation Results

The table below presents the key results of the 2017 valuation.

| Table I-1 Summary of Key Valuation Results | | |
|---|---------------------|---------------------|
| Valuation Date | 1/1/2017 | 1/1/2015 |
| Discount Rate (per annum) | 7.00% | 7.25% |
| Actuarial Liability | | |
| - Retirees & Term Vesteds | \$ 3,069,000 | \$ 3,836,000 |
| - Active Employees | 6,147,000 | 6,299,000 |
| - Total | \$ 9,216,000 | \$ 10,135,000 |
| Assets | \$ 7,877,000 | \$ 6,220,000 |
| Unfunded Actuarial Liability (UAL) | \$ 1,339,000 | \$ 3,915,000 |
| Normal Cost | \$ 236,000 | \$ 260,000 |
| Amortization of UAL | \$ 67,000 | \$ 190,000 |
| Total ARC | \$ 303,000 | \$ 450,000 |
| Normal Cost % of pay | 3.15% | 3.64% |
| Amortization of UAL % of pay | 0.90% | 2.66% |
| Total Cost (ARC as % of pay) | 4.05% | 6.30% |
| Projected Payroll | 7,482,000 | 7,143,000 |
| Total Cost (ARC) | \$ 303,000 | \$ 450,000 |
| Actual/Expected Contribution Amount | \$ 303,212 | \$ 741,647 |

Table I-1 shows that the total unfunded liability decreased by \$0.9 million. This change is the result of a number of offsetting effects, including assumption changes, medical cost experience, and asset growth. These changes are discussed further in the GASB Valuation Results section.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION I - SUMMARY OF RESULTS

The table below shows the results broken down between the explicit cost and implicit subsidy portions of the benefits. Assets have been allocated first to the explicit cost and then to the implicit subsidy. The explicit cost amounts include all administrative expenses.

| Table I-1b Summary of Key Valuation Results | | | |
|--|----------------------|-------------------------|------------------------|
| Valuation Date | 1/1/2017 | 1/1/2017 | 1/1/2017 |
| Discount Rate (per annum) | 7.00% | 7.00% | 7.00% |
| | Explicit Cost | Implicit Subsidy | Total Liability |
| Actuarial Liability | | | |
| - Retirees & Term Vesteds | \$ 1,705,000 | \$ 1,364,000 | \$ 3,069,000 |
| - Active Employees | <u>3,316,000</u> | <u>2,831,000</u> | <u>6,147,000</u> |
| - Total | \$ 5,021,000 | \$ 4,195,000 | \$ 9,216,000 |
| Assets | \$ 5,021,000 | \$ 2,856,000 | \$ 7,877,000 |
| Unfunded Actuarial Liability (UAL) | \$ 0 | \$ 1,339,000 | \$ 1,339,000 |
| Normal Cost | \$ 121,000 | \$ 115,000 | \$ 236,000 |
| Amortization of UAL | \$ 0 | \$ 67,000 | \$ 67,000 |
| Total ARC | \$ 121,000 | \$ 182,000 | \$ 303,000 |
| Normal Cost % of pay | 1.61% | 1.54% | 3.15% |
| Amortization of UAL % of pay | 0.00% | 0.90% | 0.90% |
| Total Cost (ARC as % of pay) | 1.61% | 2.44% | 4.05% |

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION I - SUMMARY OF RESULTS

The table below shows the expected net benefit payments for the next 16 years. These payments include the expected annual implicit subsidy as well as expected plan premium payments. The implicit subsidy payments are shown because these payments are included as a plan contribution under the GASB accounting standards.

| Table I-2 Expected Benefit Payments | | | | | | | |
|--|--------------|-----------|------------|-------------|--------------|------------|------------|
| Fiscal Year | Expected Net | Expected | Total | Fiscal Year | Expected Net | Expected | Total |
| Ending | Premium | Implicit | Benefit | Ending | Premium | Implicit | Benefit |
| December 31 | Payments | Subsidy | Payments | December 31 | Payments | Subsidy | Payments |
| 2017 | \$ 75,000 | \$ 48,000 | \$ 123,000 | 2025 | \$ 277,000 | \$ 236,000 | \$ 513,000 |
| 2018 | 98,000 | 69,000 | 167,000 | 2026 | 315,000 | 262,000 | 577,000 |
| 2019 | 110,000 | 78,000 | 188,000 | 2027 | 343,000 | 286,000 | 629,000 |
| 2020 | 121,000 | 94,000 | 215,000 | 2028 | 385,000 | 317,000 | 702,000 |
| 2021 | 134,000 | 107,000 | 241,000 | 2029 | 416,000 | 344,000 | 760,000 |
| 2022 | 150,000 | 125,000 | 275,000 | 2030 | 454,000 | 365,000 | 819,000 |
| 2023 | 187,000 | 152,000 | 339,000 | 2031 | 486,000 | 393,000 | 879,000 |
| 2024 | 222,000 | 183,000 | 405,000 | 2032 | 526,000 | 452,000 | 978,000 |

The remainder of this report provides additional detail. First, we develop the GASB valuation results and illustrate the sensitivity of the GASB results to changes in the health care trend rates. We conclude with disclosure information needed to satisfy the GASB OPEB accounting and financial reporting requirements.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION II - GASB VALUATION RESULTS

The development of the Unfunded Actuarial Liability (UAL) is shown below.

| Table II-1 Unfunded Actuarial Liability | | |
|--|---------------------|---------------------|
| Valuation Date | 1/1/2017 | 1/1/2015 |
| Actuarial Liability | | |
| Retirees & Term Vesteds: | | |
| Group 1 | \$ 463,000 | 1,586,000 |
| Group 2 | 383,000 | 472,000 |
| Group 3 | 2,062,000 | 1,419,000 |
| Group 4 | 161,000 | 359,000 |
| Total Retirees | \$ 3,069,000 | \$ 3,836,000 |
| Active Employees: | | |
| Group 1 | 1,437,000 | 1,571,000 |
| Group 2 | 3,259,000 | 3,169,000 |
| Group 3 | 1,449,000 | 1,557,000 |
| Group 4 | 2,000 | 2,000 |
| Total Active Employees | \$ 6,147,000 | \$ 6,299,000 |
| Total Actuarial Liability | \$ 9,216,000 | \$ 10,135,000 |
| Assets | \$ 7,877,000 | \$ 6,220,000 |
| Unfunded Actuarial Liability (UAL) | \$ 1,339,000 | \$ 3,915,000 |

The groups shown above reflect the following member divisions:

- Group 1: TPOAM (Division 1, HF), Dispatch (Division 11, HA), and non-represented employees (Division 14, HE);
- Group 2: Police Patrol (Division 2, HD) and Firefighters (Division 5, HB);
- Group 3: Police Command (Division 20, HC); and,
- Group 4: Elected Officials (Division 10, HG).

The Annual Required Contribution (ARC) under GASB 45 consists of two parts: (1) the *normal cost*, which represents the annual cost attributable to service earned in a given year, and (2) the amortization of the Unfunded Actuarial Liability (UAL).

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION II - GASB VALUATION RESULTS

The UAL as of January 1, 2017 is amortized as a level percent of payroll over 30 years. The Annual Required Contribution (ARC) for the fiscal year ending January 1, 2017 is developed in the table below. The prior calculation is shown for comparison.

| Table II-2 | | |
|--|-------------------|-------------------|
| GASB Annual Required Contribution (ARC) | | |
| Valuation Date | 1/1/2017 | 1/1/2015 |
| Fiscal Year Ending | 2017 | 2015 |
| Normal Cost: | | |
| Group 1 | \$ 51,000 | \$ 61,000 |
| Group 2 | 139,000 | 145,000 |
| Group 3 | 46,000 | 54,000 |
| Group 4 | - | - |
| Total Normal Cost | \$ 236,000 | \$ 260,000 |
| Amortization of UAL | 67,000 | 190,000 |
| Total ARC | \$ 303,000 | \$ 450,000 |
| Projected Payroll | \$ 7,482,000 | \$ 7,143,000 |
| ARC as a Percentage of Payroll | 4.05% | 6.30% |
| Fiscal Year Ending 2018 | | |
| Projected Payroll | \$ 7,763,000 | |
| Estimated Contribution | \$ 314,000 | |

Please note that GASB statements 74 and 75 will materially alter the Township's disclosures for fiscal years ending in 2018 and later. The changes due to the new GASB statements are not reflected in this report.

Starting in fiscal year ending December 31, 2018, the ARC will no longer be calculated. Instead, the OPEB expense will be based on a reconciliation of the recognized unfunded liability from one year to the next. An Actuarially Determined Contribution (ADC) can be calculated to provide a guide to the Township for the funding of the Plan, but GASB does not require such a calculation. The estimated contribution for FYE 2018 shown above is simply the FYE 2017 ARC as a percentage of payrolls applied to the projected payroll for FYE 2018.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION II - GASB VALUATION RESULTS

Reconciliation

The table below provides an estimate of the major factors contributing to the change in liability since the last valuation report.

| Table II-3 Reconciliation of Actuarial Liability | |
|---|-----------------------|
| Actuarial Liability at 1/1/2015 | \$10,135,000 |
| Expected Actuarial Liability at 1/1/2017 | 11,809,000 |
| Actual Liability as of 1/1/2017 | 9,216,000 |
| (Gain) or Loss | (2,593,000) |
| Changes due to: | |
| Demographic (Gain)/Loss | 1,719,000 |
| Change in Mortality and Active Decrements | 790,000 |
| Change in Claims and Trend Assumptions | (5,595,000) |
| Change in Discount Rate | 358,000 |
| Plan amendments | 135,000 |
| Total Changes | \$ (2,593,000) |

- *Demographic* refers to the change in liability from updating the census
- *Change in Mortality and Active Decrements* refers to the change associated with changing the decrement assumption to match the latest Municipal Employees' Retirement System of Michigan
- *Change in Claims and Trend Assumptions* refers to the change in expected current and future healthcare claims and expense costs. This item also reflects the change in expected future trends
- *Change in Discount Rate* refers to the decrease of discount rate from 7.25% to 7.00%
- *Plan Amendments* refers to the change from the BCN to the PPO network for when the Plan became self-funded. The change in claims and administrative expenses resulting from the move from fully to self-insured itself is categorized under the "Change in Claims and Trend Assumptions"

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION III - SENSITIVITY OF RESULTS

The liabilities and ARC produced in this report are sensitive to the assumptions used. The tables below show the impact of a 1% increase or decrease in the health care trend rates on the GASB Actuarial Liability and the ARC to provide some measure of sensitivity.

| Table III-1 | | | |
|---|------------------|------------------|------------------|
| Actuarial Liability - January 1, 2017 | | | |
| Pay-As-You-Go-Funding (7.00% assumed discount) | | | |
| (Sensitivity of Healthcare Trends) | | | |
| | - 1% | Valuation | + 1% |
| Retirees, Beneficiaries, and Term Vesteds | \$ 2,739,000 | \$ 3,069,000 | \$ 3,462,000 |
| Active Employees | <u>4,972,000</u> | <u>6,147,000</u> | <u>7,681,000</u> |
| Total | \$ 7,711,000 | \$ 9,216,000 | \$ 11,143,000 |
| Assets | \$ 7,877,000 | \$ 7,877,000 | \$ 7,877,000 |
| UAL | \$ (166,000) | \$ 1,339,000 | \$ 3,266,000 |

| Table III-2 | | | |
|---|----------------|------------------|----------------|
| GASB ARC - January 1, 2017 | | | |
| Pay-As-You-Go-Funding (7.00% assumed discount) | | | |
| (Sensitivity of Healthcare Trends) | | | |
| | - 1% | Valuation | + 1% |
| Normal Cost | \$ 187,000 | \$ 236,000 | \$ 313,000 |
| UAL Amortization | <u>(9,000)</u> | <u>67,000</u> | <u>167,000</u> |
| Total | \$ 178,000 | \$ 303,000 | \$ 480,000 |

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION IV - ACCOUNTING DISCLOSURES

Statement 45 of the Governmental Accounting Standards Board (GASB) established standards for accounting and financial reporting of Other Postemployment Benefit (OPEB) information by governmental employers and plans. In accordance with those statements, we have prepared the following disclosures.

Net OPEB Obligation

The table below shows the development of the Net OPEB Obligation for the fiscal year ending December 31, 2016 as shown in the Township's financial statements. When GASB 75 becomes effective in 2018, the Net OPEB Obligation will no longer be reported.

| Table IV-1 Development of Net OPEB Obligation | | |
|---|---|--|
| | Actual December 31, 2016 | Projected December 31, 2017 |
| 1. Net OPEB Obligation/(Asset) at beginning of fiscal year | \$ (412,665) | \$ (478,943) |
| 2. Annual Required Contribution for FYE | \$ 450,039 | \$ 303,212 |
| 3. Interest on Net OPEB Obligation/(Asset) | (6,650) | (16,763) |
| 4. Adjustment to Annual Required Contribution | (4,345) | (24,101) |
| 5. Annual OPEB Cost (2.) + (3.) + (4.) | \$ 439,044 | \$ 262,348 |
| 6. Employer Contributions | \$ (499,322) | \$ (255,213) |
| 7. Implicit Subsidy Payment | \$ (6,000) | \$ (47,999) |
| 8. Net OPEB Obligation/(Asset) at end of fiscal year (1.) + (5.) + (6.) + (7.) | \$ (478,943) | \$ (519,806) |

The actual December 31, 2016 NOO listed above does not match the 2016 CAFR, as it did not reflect the employer contribution from benefit payments paid outside of the trust. This amounted to \$90,888 for fiscal year end 2016.

Schedule of Funding Progress

The schedule of funding progress compares the assets used for funding purposes to the comparable liabilities to determine how well the Plan is funded and how this status has changed over the past several years. The Actuarial Liability is compared to the actuarial value of assets to determine the funding ratio. The Actuarial Liability under GASB is determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION IV - ACCOUNTING DISCLOSURES

| Table IV-2 Schedule of Funding Progress | | | | | | |
|--|--|--|---|-----------------------------------|---|---|
| Fiscal year Beginning January 1 | Actuarial Value of Assets (a) | Actuarial Liabilities (b) | Unfunded Actuarial Liabilities (UAL) (b-a) | Funded Ratio (a/b) | Annual Covered Payroll (c) | (UAL) as Percentage of Covered Payroll ((b-a)/c) |
| 2017 | \$ 7,877,000 | \$ 9,216,000 | 1,339,000 | 85% | \$ 7,482,000 | 17.90% |
| 2015 | 6,220,000 | 10,135,000 | 3,915,000 | 61% | 6,988,000 | 56.02% |
| 2013 | 4,109,000 | 9,437,000 | 5,328,000 | 44% | 6,703,000 | 79.49% |
| 2010* | 1,545,277 | 8,033,569 | 6,488,292 | 19% | 6,465,155 | 100.36% |

*Based on calculations by the prior actuary.

History of Employer Contributions

The history of employer contributions shows whether the employer has made contributions that are consistent with the parameters established by GASB for calculating the ARC and the annual OPEB expense.

| Fiscal Year Ended December 31 | Net Annual OPEB Cost (AOC) | Actual Contributions | Percentage of AOC Contributed | Net OPEB Obligation |
|--|---|---------------------------------|--|--------------------------------|
| 2017 | \$ 262,348 | \$ 303,212 | 116% | \$ (519,807) |
| 2016 | 439,044 | 505,322 | 115% | (478,943) |
| 2015 | 439,044 | 759,983 | 173% | (412,666) |
| 2014 | 536,909 | 738,313 | 138% | (91,727) |
| 2013 | 542,052 | 713,312 | 132% | 109,677 |
| 2012* | 794,357 | 656,639 | 83% | 280,937 |
| 2011* | 797,809 | 880,810 | 110% | 143,219 |
| 2010* | 781,160 | 957,986 | 123% | 226,220 |
| 2009* | 680,134 | 277,088 | 41% | 403,046 |

* Based on calculations by prior actuary.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

SECTION IV - ACCOUNTING DISCLOSURES

We have also provided a *Note to Required Supplementary Information* for the financial statements.

**Table IV-4
Note to Required Supplementary Information**

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

| | |
|---------------------------------------|---------------------------|
| Valuation Date | January 1, 2017 |
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level percent of pay open |
| Single Equivalent Amortization Period | 30 years |
| Asset Valuation Method | Market value |
| Actuarial Assumptions: | |
| Payroll Growth Rate | 3.75% |
| Discount Rate | 7.00% |
| Ultimate Rate of Medical Inflation | 4.00% |

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Member Data

| Valuation Date | January 1, 2015 | January 1, 2017 | % Change |
|-----------------------------------|--------------------|--------------------|--------------|
| Active Employees | | | |
| Group 1 | 58 | 64 | 10.34% |
| Group 2 | 47 | 50 | 6.38% |
| Group 3 | 11 | 10 | (9.09%) |
| Group 4 | 3 | 3 | 0.00% |
| Total | 119 | 127 | 6.72% |
| Average Age | 42.3 | 42.9 | 1.49% |
| Average Service | 9.7 | 10.0 | 3.40% |
| Total Payroll | \$ 6,988,000 | \$ 7,482,000 | 7.07% |
| Total Term Vesteds | | | |
| | 0 | 3 | |
| Average Age | 0 | 55.4 | |
| Total Retirees and Spouses | | | |
| Group 1 | 6 | 0 | |
| Group 2 | 2 | 2 | |
| Group 3 | 4 | 4 | |
| Group 4 | 0 | 0 | |
| Pre-65 Total | 12 | 6 | (50.00%) |
| Group 1 | 0 | 4 | |
| Group 2 | 0 | 0 | |
| Group 3 | 0 | 2 | |
| Group 4 | 2 | 2 | |
| Post-65 Total | 2 | 8 | 300.00% |
| Total | 14 | 14 | 0.00% |
| Average Age | 61.6 | 63.6 | 3.24% |

The groups shown above reflect the following member divisions:

- Group 1: TPOAM (Division 1, HF), Dispatch (Division 11, HA), and non-represented employees (Division 14, HE);
- Group 2: Police Patrol (Division 2, HD) and Firefighters (Division 5, HB);
- Group 3: Police Command (Division 20, HC); and,
- Group 4: Elected Officials (Division 10, HG).

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Member Data as of January 1, 2017

| Eligible Active Employees | | | | | | | | |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|------------|
| Age | Service | | | | | | | Total |
| | Under 5 | 5 - 9 | 10 - 14 | 15 - 19 | 20 - 24 | 25 - 29 | 30 and Up | |
| Under 25 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 25 - 29 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 11 |
| 30 - 34 | 6 | 3 | 5 | 0 | 0 | 0 | 0 | 14 |
| 35 - 39 | 6 | 3 | 12 | 7 | 0 | 0 | 0 | 28 |
| 40 - 44 | 4 | 3 | 2 | 5 | 2 | 0 | 0 | 16 |
| 45 - 49 | 7 | 9 | 1 | 4 | 4 | 1 | 0 | 26 |
| 50 - 54 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 7 |
| 55 - 59 | 3 | 2 | 0 | 0 | 2 | 1 | 0 | 8 |
| 60 - 64 | 1 | 1 | 1 | 3 | 0 | 1 | 0 | 7 |
| 65 and Up | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 5 |
| Total | 42 | 26 | 23 | 21 | 11 | 4 | 0 | 127 |

| Eligible Retirees | | | |
|--------------------------|----------|----------|----------|
| Age | Gender | | Total |
| | Male | Female | |
| Under 50 | 0 | 0 | 0 |
| 50 - 54 | 1 | 0 | 1 |
| 55 - 59 | 0 | 0 | 0 |
| 60 - 64 | 1 | 0 | 1 |
| 65 - 69 | 2 | 2 | 4 |
| 70 - 74 | 0 | 0 | 0 |
| 75 - 79 | 1 | 0 | 1 |
| 80 - 84 | 0 | 0 | 0 |
| 85 - 89 | 0 | 0 | 0 |
| 90 and Up | 0 | 0 | 0 |
| Total | 5 | 2 | 7 |

| Medical Plan Election | | | | |
|------------------------------|------------|--------------------------|--------------------|------------|
| Medical Plan | Actives | Retirees & Beneficiaries | Spouses of Retired | Total |
| BCBSM 0003/0004 | 114 | 0 | 0 | 114 |
| BCBSM 0005 | 0 | 0 | 0 | 0 |
| BCBSM 0006 | 0 | 0 | 0 | 0 |
| Opt Out | 13 | 0 | 0 | 13 |
| Total | 127 | 0 | 0 | 127 |

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Economic Assumptions

1. Expected Return on Trust Assets: 7.00% per year

We understand Trust assets are invested in the MERS Total Market Portfolio. This assumption is based on average capital market assumptions from the 2016 Horizon Survey of capital market assumptions applied to the target asset allocation for this portfolio as reported by MERS.

2. Per Person Cost Trends:

| Year | Trends | | Rx |
|------|---------|----------|-------|
| | Medical | | All |
| | Pre Med | Post Med | |
| 2017 | 8.00% | 6.00% | 9.00% |
| 2018 | 7.73 | 5.87 | 8.67 |
| 2019 | 7.47 | 5.73 | 8.33 |
| 2020 | 7.20 | 5.60 | 8.00 |
| 2021 | 6.93 | 5.47 | 7.67 |
| 2022 | 6.67 | 5.33 | 7.33 |
| 2023 | 6.40 | 5.20 | 7.00 |
| 2024 | 6.13 | 5.07 | 6.67 |
| 2025 | 5.87 | 4.93 | 6.33 |
| 2026 | 5.60 | 4.80 | 6.00 |
| 2027 | 5.33 | 4.67 | 5.67 |
| 2028 | 5.07 | 4.53 | 5.33 |
| 2029 | 4.80 | 4.40 | 5.00 |
| 2030 | 4.53 | 4.27 | 4.67 |
| 2031 | 4.27 | 4.13 | 4.33 |
| 2032 | 4.00 | 4.00 | 4.00 |

Ultimate trends (beyond 2032) for Pre Medicare and Post Medicare retirees are 4%.

Medical Administrative Expenses assumed to increase at 4% per year.

Per the Township, Agent Administrative Expenses are fixed and not to increase with time.

Therefore, Agent Administrative Expenses are assumed to increase at 0% per year.

Trends are based on standard industry expectations with a reasonable ultimate trend. We see no reason to deviate from these expectations.

3. Inflation: 2.50% per year

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Demographic Assumptions

1. Retirement Rates:

Rates of retirement are based on those that were adopted by the Municipal Employee' Retirement System of Michigan (MERS) Board for the December 31, 2015 valuation based upon the results of an actuarial experience study covering the period January 1, 2009 through December 31, 2013. These rates were further simplified, as shown below:

| Age / Svc | Rates of Retirement | | | | | |
|-----------|---------------------|-------|---------|-------|---------|-------|
| | General | | Police | | Fire | |
| | 15 – 24 | 25+ | 15 - 24 | 25+ | 15 - 24 | 25+ |
| 50 | 0.0% | 2.0% | 0.0% | 25.0% | 21.0% | 2.0% |
| 51 | 0.0 | 2.0 | 0.0 | 25.0 | 21.0 | 2.0 |
| 52 | 0.0 | 3.3 | 0.0 | 25.0 | 21.0 | 3.3 |
| 53 | 0.0 | 3.8 | 0.0 | 25.0 | 21.0 | 3.8 |
| 54 | 0.0 | 5.6 | 0.0 | 25.0 | 21.0 | 5.6 |
| 55 | 4.3 | 4.3 | 4.3 | 25.0 | 21.0 | 24.0 |
| 56 | 4.2 | 4.2 | 4.2 | 25.0 | 21.0 | 24.0 |
| 57 | 4.1 | 4.1 | 4.1 | 25.0 | 21.0 | 24.0 |
| 58 | 5.0 | 5.0 | 5.0 | 25.0 | 21.0 | 24.0 |
| 59 | 6.2 | 6.2 | 6.2 | 25.0 | 21.0 | 24.0 |
| 60 | 20.0 | 21.0 | 21.0 | 25.0 | 21.0 | 24.0 |
| 61 | 20.0 | 21.0 | 21.0 | 25.0 | 21.0 | 24.0 |
| 62 | 20.0 | 21.0 | 21.0 | 25.0 | 21.0 | 24.0 |
| 63 | 20.0 | 21.0 | 21.0 | 25.0 | 21.0 | 24.0 |
| 64 | 20.0 | 21.0 | 21.0 | 25.0 | 21.0 | 24.0 |
| 65 | 20.0 | 21.0 | 21.0 | 28.0 | 21.0 | 24.0 |
| 66 | 20.0 | 21.0 | 21.0 | 28.0 | 21.0 | 24.0 |
| 67 | 20.0 | 21.0 | 21.0 | 28.0 | 21.0 | 24.0 |
| 68 | 20.0 | 21.0 | 21.0 | 28.0 | 21.0 | 24.0 |
| 69 | 20.0 | 21.0 | 21.0 | 28.0 | 21.0 | 24.0 |
| 70 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

All members with 10 - 15 years of service and at least age 60 will have a 20% likelihood of retirement until age 70 when they will have 100%.

Police Command members who retire with coverage but then go work in the same capacity with another township have their coverage suspended. They are assumed to resume coverage at age 60.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

2. Termination Rates:

Rates of termination for all employees from causes other than death, disability, and service are the same as what is used in the MERS December 31, 2015 actuarial valuation. Sample base rates of termination are shown below. The base rates are then multiplied by a scaling factor of 0.94 as determined by MERS to reflect Pittsfield-specific experience.

| Rates of Termination | |
|-----------------------------|------------|
| Years of Service | All |
| 0 | 19.6% |
| 1 | 16.3 |
| 2 | 13.3 |
| 3 | 10.5 |
| 4 | 8.6 |
| 5 | 6.9 |
| 10 | 4.6 |
| 15 | 3.4 |
| 20 | 2.6 |
| 25 | 2.2 |
| 30 | 2.2 |
| 34 and over | 2.2 |

3. Rate of Mortality:

Active Employees and Healthy Retirees:

Rates of mortality for members and their beneficiaries are the same as what is used in the MERS December 31, 2015 actuarial valuation. MERS uses a 50% Male – 50% Female blend of the following tables:

- I. The RP-2014 Healthy Annuitant Mortality Tables, with rates multiplied by 105%
- II. The RP-2014 Employee Mortality Tables

For ages 18 - 49, MERS uses the rates from Table II. For ages 70 and older, MERS uses the rates in Table I. For ages 50-69, MERS blends Table II and Table I as follows:

- a. Age 50 - 60% of Table II and 40% of Table I
- b. Age 51 - 57% of Table II and 43% of Table I
- c. Etc....
- d. Age 69 - 3% of Table II and 97% of Table I

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Disabled Employee:

Rates of mortality for disabled members are the same as what is used in the MERS December 31, 2015 actuarial valuation. MERS uses the RP-2014 Disabled Retiree Mortality Table, blended 50% male and 50% female.

| Sample Mortality at Selected Ages | | |
|-----------------------------------|---------|----------|
| Age | Healthy | Disabled |
| 40 | 0.0512% | 0.8226% |
| 45 | 0.0815 | 1.3044 |
| 50 | 0.2271 | 1.6151 |
| 55 | 0.3706 | 1.8924 |
| 60 | 0.5833 | 2.1802 |
| 65 | 0.9404 | 2.6273 |
| 70 | 1.5559 | 3.4275 |
| 75 | 2.5076 | 4.7666 |
| 80 | 4.1772 | 6.8826 |

4. Disability Rates:

Rates of disability are the same as what is used in the MERS December 31, 2015 actuarial valuation assumptions. Sample rates of disability are shown below.

| Rates of Disability | |
|---------------------|-------|
| Age | All |
| 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 |

5. Salary Increase Rate:

Salary increase rates follow the MERS December 31, 2015 actuarial valuation assumption:

Wage inflation component 3.75%

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

In addition, the following merit component is added based on an individual member's age. Sample rates are shown below.

| Salary Merit Increases | |
|------------------------|------------------|
| Age | Merit/ Longevity |
| 20 | 11.00% |
| 25 | 7.20 |
| 30 | 3.10 |
| 35 | 1.90 |
| 40 | 1.20 |
| 45 | 0.81 |
| 50 | 0.52 |
| 55 | 0.30 |
| 60 | 0.00 |

- 6. Percent of Retirees Electing Coverage:** The township provides retiree healthcare benefits at no cost to retirees. Current retirees are expected to continue coverage in their current plan. All active members currently enrolled in medical coverage through the Township are assumed to continue coverage after retirement, if eligible. For those currently opting out of coverage with the Township, 50% are assumed to resume coverage before retirement and then continue coverage after retirement. This assumption is consistent with past valuation assumptions and is based on discussions with the Township.

We assume that those who retire and elect coverage continue coverage until death. There is no assumption for dropping coverage or suspension of coverage.

- 7. Plan Election:** According to the Collective Bargaining Agreements that the Township has with its labor groups, only the current active PPO plan is available for future retirees electing coverage. Therefore, all future retirees who elect coverage at retirement are assumed to enroll in the BCBS PPO plan.
- 8. Family Composition:** 70% of members are assumed to cover a spouse at retirement. This assumption is the same as used in the MERS December 31, 2015 actuarial valuation. We did not allocate any credibility to the Township actual retiree family composition as there are only seven retirees. Members with suspended benefit (Term Vested) are assumed to have 100% election of spouse benefit at retirement.
- 9. Dependent Age:** For current retirees, actual spouse date of birth was used when available. For future retirees, male retirees are assumed to be three years older than their partner. This assumption is the same as used in the MERS December 31, 2015 actuarial valuation.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Changes Since Last Valuation

The retirement, termination, mortality, disability and salary increase assumptions have been updated to match the December 31, 2015 MERS assumptions. In addition, the per-person claims cost and trends were updated since the January 1, 2015 valuation. The discount rate and investment return decreased from 7.25% to 7.00%

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Methodology

The Entry Age Normal actuarial cost method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the postemployment benefits between each member's date of hire and assumed retirement. The Actuarial Liability is the difference between the present value of future benefits and the present value of future normal cost. The Unfunded Actuarial Liability is the difference between the Actuarial Liability and the Actuarial Value of Assets.

Claims and Expenses:

- **Non-Medicare Medical claims:** The claims costs are based on the Calendar Year (CY) 2016 medical claims experience. The Non-Medicare Eligible (NME) medical claim experience is based on active and retiree Pre-Medicare population, and converted to a Per Person Per Month (PPPM) cost by dividing the total CY 2016 paid claims by the estimated CY 2016 member-month. The CY 2016 member-month was estimated as the average of the 12/31/2015 and 12/31/2016 covered lives count, multiplied by 12. We removed claims in excess of the pooling point prior to trending the PPPM claim costs to CY 2017, using an 8% per annum rate. As the claim experience is based on paid dates, three months' worth of trend was added to convert paid to incurred dates. Due to the low credibility of the claim experience (only one year available and 346 covered lives), we blended the projected medical and pharmacy claim costs with a manual rate developed using OptumInsight's Comprehensive Pricer, allocating 25% credibility to the Township claim experience.
- **Medicare Medical Claims:** The Township provided Medicare medical claim experience for CY 2016. However, there are only eight persons covered by the Township who are Medicare Eligible (ME). Therefore, we developed the projected CY 2017 Medicare Eligible (ME) medical claim costs using the OptumInsight's Comprehensive Medicare Coordination Model.
- **Pharmacy claims:** The projected CY 2017 pharmacy costs for the NME and ME population are based on the CY 2016 pharmacy costs of the entire population participating in the Township health plan (i.e., active, retiree pre and post Medicare). The total CY 2016 pharmacy claim cost is converted to a PPPM cost using the estimated CY 2016 member-month for the entire population. The CY 2016 PPPM is trended at a 10% annual rate to CY 2017, and half a month of trend is added to convert claims from a paid to an incurred basis. The resulting projected costs is then blended with the manual rate developed using OptumInsight's Comprehensive Pricer, allocating 25% credibility to the Township claim experience.
- **CY 2017 Administrative Expenses** are assumed to be the same as CY 2016 administrative expenses.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

The resulting Medical Non Medicare Eligible (NME), Medical ME and pharmacy PPPM costs were then adjusted using age curves to develop the expected costs of the medical and pharmacy benefits based on the covered individuals age and sex. Note that the age curves are net large claims, but the pooling charge (i.e. stop loss premium) is added separately.

To develop the manual rates used in the projection of claim costs, we rely on software and databases to get industry average figures. The software and underlying databases are owned and developed by OptumInsight and licensed by Cheiron, Inc. Cheiron assumes responsibility for the actuarial soundness and appropriateness of the figures and calculations provided in this report.

The costs to the Plan consist of both an explicit subsidy and an implicit subsidy. The implicit subsidy arises from the difference between the actual cost to insure NME retirees and the claims and expenses allocated to those NME retirees. The Plan Sponsor allocates the same monthly rate (i.e., PMPM claims and expenses, or premium equivalent) to covered NME retirees as it allocates to active employees, thus allocating retirees less than the true cost of their coverage. If the monthly rate structure were to be determined for NME retirees separately from actives, you would see a lower premium equivalent for actives than for NME retirees and the implicit subsidy disappear. Typically, this implicit subsidy only occurs for NME retirees as Medicare retirees are rated separately and thus no implicit subsidy is assumed. However, as we developed our pharmacy claim curves based on the blended NME and ME population and claim experience, Medicare retirees are also impacted by the implicit subsidy.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Expected Retiree and Spouse costs for Calendar Year 2017:

Medical & Rx Claims

| Average Claim and Expense Assumptions: For Calendar Year 2017 | | | | | | | | | | | | |
|--|-------------------|---------|-------|---------|------------|---------|-------|---------|------------|---------|-------|---------|
| Age | Group 0003 / 0004 | | | | Group 0005 | | | | Group 0006 | | | |
| | Medical | | Rx | | Medical | | Rx | | Medical | | Rx | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 40 | \$2,445 | \$4,587 | \$799 | \$1,179 | \$2,578 | \$4,837 | \$784 | \$1,157 | \$2,582 | \$4,845 | \$860 | \$1,269 |
| 45 | 2,984 | 4,663 | 1,078 | 1,442 | 3,146 | 4,917 | 1,058 | 1,415 | 3,151 | 4,925 | 1,160 | 1,551 |
| 50 | 3,891 | 5,338 | 1,489 | 1,902 | 4,103 | 5,629 | 1,461 | 1,867 | 4,110 | 5,638 | 1,601 | 2,046 |
| 55 | 5,081 | 6,180 | 1,989 | 2,448 | 5,358 | 6,517 | 1,952 | 2,402 | 5,367 | 6,527 | 2,139 | 2,633 |
| 60 | 6,632 | 7,313 | 2,558 | 2,987 | 6,993 | 7,711 | 2,510 | 2,931 | 7,004 | 7,724 | 2,752 | 3,213 |
| 64 | 8,321 | 8,568 | 2,975 | 3,248 | 8,775 | 9,034 | 2,919 | 3,187 | 8,789 | 9,049 | 3,200 | 3,493 |
| 65 | 1,354 | 1,443 | 2,759 | 2,945 | 1,354 | 1,443 | 2,707 | 2,889 | 1,354 | 1,443 | 2,967 | 3,167 |
| 70 | 1,661 | 1,655 | 3,148 | 3,172 | 1,661 | 1,655 | 3,089 | 3,113 | 1,661 | 1,655 | 3,386 | 3,412 |
| 75 | 1,987 | 1,858 | 3,353 | 3,324 | 1,987 | 1,858 | 3,290 | 3,262 | 1,987 | 1,858 | 3,606 | 3,575 |
| 80 | 2,209 | 1,981 | 3,435 | 3,350 | 2,209 | 1,981 | 3,371 | 3,287 | 2,209 | 1,981 | 3,694 | 3,603 |
| 85 | 2,303 | 2,001 | 3,398 | 3,263 | 2,303 | 2,001 | 3,334 | 3,202 | 2,303 | 2,001 | 3,654 | 3,509 |

The cost of Specific and Aggregate Stop Loss coverage, which are \$33.93 and \$122.48 per employee per month respectively, are not reflected in the Medical & Rx Claims above. They are converted to a PPPM \$78.21 for 2017, to which the Medical NME trends are applied for future years. It is assumed that the Township pays Stop Loss premium on their entire membership, including ME retirees. The Stop Loss rates are not age adjusted.

Stop Loss premium

The Township provided the CY 2017 PEPM Stop Loss rates for aggregate and specific stop loss coverage. We converted these rates to a PPPM using the average contract size of the retiree population as of 1/1/17.

2017 Stop Loss Expenses: \$78.21 PPPM

Admin Claims

2017 Medical Administrative Expenses: \$35.91 PPPM

2017 Agent Administrative Expenses: \$7.06 PPPM

This report does not reflect future changes in benefits, penalties, taxes, or administrative costs that may be required as a result of the Patient Protection and Affordable Care Act of 2010 related legislation and regulations.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Amortization Cost

The actuarial value of the assets is subtracted from the *Actuarial Liability* to determine the *Unfunded Actuarial Liability*.

The *Unfunded Actuarial Liability* is amortized as a level percent of pay amount over an open 30-year period. Because the amortization period is reset to 30 years with each valuation, the *Unfunded Actuarial Liability* is not expected to ever be paid off if contributions are made according to this schedule and all assumptions are met. In fact, the *Unfunded Actuarial Liability* is expected to grow as a dollar amount even as it is expected to become a smaller percentage of payroll. The payment for a given year is expressed as a percentage of projected active member payroll for that year. This percentage is the *Amortization Rate*.

The sum of the *Normal Cost Rate* and the *Amortization Rate* is the Township's *Contribution Rate*. The Township's actuarial cost for a given year is determined by multiplying the active payroll by the *Contribution Rate*.

Actuarial Value of Plan Assets

Pittsfield Charter Township contributes funds to a Retiree Health Funding Vehicle, a Section 115 Trust account with MERS of Michigan. As of December 31, 2016, the market value of assets was \$7,876,812. The Actuarial Value of Assets is equal to the market value.

Changes Since The Last Valuation

Effective 1/1/2016, the plan started self-funding through the BCBSM PPO plan and converted members from the BCN HMO to the PPO. This includes covering Out of Network claims where there was no Out of Network coverage in the HMO. Below are the Calendar Year 2017 expected claims prior to updating from HMO to PPO.

| Average Claim and Expense Assumptions: For Calendar Year 2017 | | | | | | | | | | | | |
|--|-------------------|---------|-------|---------|------------|---------|-------|---------|------------|---------|-------|---------|
| Age | Group 0003 / 0004 | | | | Group 0005 | | | | Group 0006 | | | |
| | Medical | | Rx | | Medical | | Rx | | Medical | | Rx | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 40 | \$2,313 | \$4,341 | \$798 | \$1,178 | \$2,478 | \$4,650 | \$784 | \$1,158 | \$2,582 | \$4,845 | \$860 | \$1,269 |
| 45 | 2,824 | 4,413 | 1,077 | 1,440 | 3,025 | 4,727 | 1,058 | 1,415 | 3,151 | 4,925 | 1,160 | 1,551 |
| 50 | 3,682 | 5,051 | 1,487 | 1,900 | 3,945 | 5,411 | 1,461 | 1,867 | 4,110 | 5,638 | 1,601 | 2,046 |
| 55 | 4,808 | 5,848 | 1,987 | 2,445 | 5,151 | 6,265 | 1,952 | 2,403 | 5,367 | 6,527 | 2,139 | 2,633 |
| 60 | 6,275 | 6,920 | 2,556 | 2,984 | 6,722 | 7,413 | 2,511 | 2,931 | 7,004 | 7,724 | 2,752 | 3,213 |
| 64 | 7,875 | 8,108 | 2,971 | 3,244 | 8,435 | 8,685 | 2,920 | 3,188 | 8,789 | 9,049 | 3,200 | 3,493 |
| 65 | 1,354 | 1,443 | 2,756 | 2,941 | 1,354 | 1,443 | 2,708 | 2,890 | 1,354 | 1,443 | 2,967 | 3,167 |
| 70 | 1,661 | 1,655 | 3,144 | 3,169 | 1,661 | 1,655 | 3,089 | 3,113 | 1,661 | 1,655 | 3,386 | 3,412 |
| 75 | 1,987 | 1,858 | 3,349 | 3,320 | 1,987 | 1,858 | 3,290 | 3,262 | 1,987 | 1,858 | 3,606 | 3,575 |
| 80 | 2,209 | 1,981 | 3,431 | 3,346 | 2,209 | 1,981 | 3,371 | 3,288 | 2,209 | 1,981 | 3,694 | 3,603 |
| 85 | 2,303 | 2,001 | 3,394 | 3,259 | 2,303 | 2,001 | 3,335 | 3,202 | 2,303 | 2,001 | 3,654 | 3,509 |

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX A - MEMBER DATA, ASSUMPTIONS, AND METHODS

Administrative costs associated with self-funding healthcare coverage have been incorporated into the plan.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX B - SUBSTANTIVE PLAN PROVISIONS

Summary of Key Substantive Plan Provisions

Non-represented employees (excluding elected officials), TPOAM, and Dispatchers

Eligibility: Retirement from Pittsfield Charter Township with 25 or more years of service having attained age 60.

Benefits: For employees hired before December 31, 2006 (December 31, 2007 for non-represented members), the Township will pay a portion of the cost of medical plan premiums for the retiree and spouse for life. The Township portion of premiums is 100% for employees with 10 or more years of service as of 12/31/2009 and 90% for all others. Benefits continue to the surviving spouse after the retiree's death.

For employees hired after December 31, 2006 (December 31, 2007 for non-represented members), the Township will pay a portion of the retiree-only medical plan premiums for life. The maximum amount payable by the Township is \$600 per month, and this amount is not indexed. No benefits are payable for spouse coverage or surviving spouse coverage.

Pension Plan Eligibility

Non-represented, TPOAM, and dispatch employees are eligible for unreduced benefits from the pension plan at age 60 and 10 years of service (eight years for elected officials) and reduced benefits at age 50 with 25 years of service or age 55 with 15 years of service.

Firefighters (IAFF)

Eligibility: Retirement from Pittsfield Charter Township with 25 or more years of service having attained age 55

Benefits: For employees hired before December 31, 2006, the Township will pay a portion of the cost of medical plan premiums for the retiree and spouse for life. The Township portion of premiums is 100% for employees with 10 or more years of service as of 12/31/2009 and 90% for all others. Benefits continue to the surviving spouse after the retiree's death.

For employees hired after December 31, 2006, the Township will pay a portion of the retiree-only medical plan premiums for life. The maximum amount payable by the Township is \$600 per month, and this amount is not indexed. No benefits are payable for spouse coverage or surviving spouse coverage.

Pension Plan Eligibility

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX B - SUBSTANTIVE PLAN PROVISIONS

Firefighters are eligible for unreduced benefits from the pension plan at age 60 with 10 years of service or age 55 with 15 years of service and reduced benefits at age 50 with 25 years of service.

Class I: Full-Time Elected Officials

Eligibility: Retirement from Pittsfield Charter Township with eight or more years of service with the Township having attained age 60.

Benefits: For Class I Full-Time Elected Officials elected before December 31, 2007, the Township will pay 90% of the applicable premium for both the eligible Elected Official and their spouse at the time of retirement (provided he/she remains the spouse). When the eligible retiree or his/her spouse at the time of retirement reaches age sixty-five (65) (or the Medicare eligibility age, if higher), the retiree or spouse must apply for Medicare Coverage (Parts A and B) and pay the applicable premium. The retiree or spouse will then be enrolled in a Township provided supplemental health insurance plan and the Employer will pay the premium to provide said supplemental coverage for the eligible retiree and spouse at the time of retirement Benefits continue to the surviving spouse after the retiree's death.

For Class I Full-Time Elected Officials elected after December 31, 2007, the Township shall only pay the cost of single subscriber coverage up to \$600 per month for the retiree. When the eligible retiree reaches age sixty-five (65) (or the Medicare eligibility age, if higher), the retiree must apply for Medicare Coverage (Parts A and B) and pay the applicable premium. The retiree will then be enrolled in a Township provided supplemental plan and the Employer will pay up to \$600 per month towards the supplemental premium to provide said supplemental coverage for the eligible retiree. No benefits are payable for spouse coverage or surviving spouse coverage.

Pension Plan Eligibility

Elected officials are eligible for unreduced benefits from the pension plan at age 60 and eight years of service and reduced benefits at age 50 with 25 years of service or age 55 with 15 years of service.

Police Patrol (POAM)

Eligibility: Retirement from Pittsfield Charter Township with 25 or more years of service having attained age 50.

Benefits: Prior to age 55, retirees may purchase coverage through the Township but the full amount of the premium is paid by the retiree. Beginning at age 55, the Township will pay a portion of the cost of medical plan premiums for the retiree and his/her

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX B - SUBSTANTIVE PLAN PROVISIONS

spouse for life. The Township portion of premiums is 100% for employees hired before January 1, 2007 and 50% for those hired after. Benefits continue to the surviving spouse after the retiree's death.

Pension Plan Eligibility

Police patrol members are eligible for unreduced benefits from the pension plan at age 60 with 10 years of service or age 50 with 25 years of service and reduced benefits at age 55 with 15 years of service.

Police Command

Eligibility: Retirement from Pittsfield Charter Township with 25 or more years of service having attained age 50.

Benefits: The Township will pay 100% of the cost of medical plan premiums for the retiree and his/her spouse for life. Benefits continue to the surviving spouse after the retiree's death. Retirees who then work for another township in the same capacity have their retiree medical coverage suspended. When the retiree is no longer working, he/she can resume medical coverage with Pittsfield.

Pension Plan Eligibility

Police command members are eligible for unreduced benefits from the pension plan at age 60 with 10 years of service or age 50 with 25 years of service and reduced benefits at age 55 with 15 years of service.

Medical Benefit Plans

Medical: Beginning in 2016, the plan has become self-funded using the BCBSM Network. All employees and retirees will use the BCBSM PPO and maintain their benefits as of January 1, 2016. Members who are retired as of 12/31/2014 remain with their current benefit structure; retiree medical benefits for members who retired after 12/31/2014 mirror the active medical and pharmacy plan design.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX B - SUBSTANTIVE PLAN PROVISIONS

Summary of Benefit Plans

| Group Eligibility | Actives 0003 & Retirees 0004 | Retiree Group 0005 (Closed) | Retiree Group 0006 (Closed) |
|---|---|------------------------------------|------------------------------------|
| Date | 1/1/2017 | 1/1/2017 | 1/1/2017 |
| Plan: | BCBS PPO | BCBS PPO (match BCN) | BCBS PPO |
| <u>In-Network (INN) Benefits</u> | | | |
| Deductible (Individual / Family) | \$500 / \$1,000 | \$0 | \$0 |
| Coinsurance | 10% | 0% | 0% |
| Out-of-Pocket Max (Individ/ Family) | \$750 / \$1,500 | \$6,350/ \$12,700 | \$600 / \$1,200 |
| Copays | | | |
| Office Visit (OV)-Primary Care (PCP) | \$20 | \$10 | \$15 |
| OV - Specialist Care Provider (SCP) | \$20 | \$10 | \$15 |
| Hospital Emergency Room (ER) | \$250 | \$50 | \$50 |
| Outpatient Surgery | DC | DC | DC |
| Hospital Inpatient | DC | DC | DC |
| Lifetime Max | unlimited | unlimited | unlimited |
| <u>Out-of-Network (OON) Benefits</u> | | | |
| Deductible (Individual / Family) | \$1,000 / \$2,000 | \$250 / \$500 | \$250 / \$500 |
| Coinsurance | 30% | 20% | 20% |
| Office Visits (PCP) & (SCP) | DC | DC | DC |
| Out-of-Pocket Max (Individ / Family) | \$1,500 / \$3,000 | \$12,700/ \$25,400 | \$2,250 / \$4,500 |
| Lifetime Max | unlimited | unlimited | unlimited |
| <u>Prescription Drugs</u> | | | |
| Retail - Generic/Formulary /Non-Form. Copay | \$10 / \$40 / \$80 | \$10 / \$40 / \$40 | \$10 / \$20 / \$20 |
| Retail Days | 30 days | 30 days | 30 days |
| Mail Order (90 Days) - Generic/Form. /Non-Form. Copay | \$20 / \$80 / \$160 | \$20 / \$80 / \$80 | \$40 / \$40 / \$40 |
| Contraceptives | Covered | Covered | Covered |
| Non-Network Pharmacy | 25% Coinsurance after Copay | 25% Coinsurance after Copay | 25% Coinsurance after Copay |
| <u>Mental Health and Substance Abuse</u> | | | |
| Mental Health Inpatient | DC (authorization required) | DC | DC |
| Mental Health Outpatient | 10% (authorization required) | DC | DC |
| Substance Abuse Inpatient | DC (authorization required) | DC | DC |
| Substance Abuse Outpatient | 10% (authorization required) | DC | DC |
| <u>Detail Benefits</u> | | | |
| Preventive Care | \$0 | \$0 | \$0 |
| Diagnostic Services | DC | DC | DC |
| Urgent Care | \$20 | \$10 | \$15 |
| Chiropractic Benefit | \$20 | \$10 | DC, Annual Limit 24 visits |
| Allergy | \$0 | DC | DC |
| Nursing Services | DC up to 120 Days | DC up to 120 Days | DC up to 120 Days |
| Hearing | Not covered | Not covered | Not covered |
| DME | DC | DC | DC |
| Vision Care Services | Not Covered | Not Covered | Not Covered |
| Dental Benefits | No Retiree Coverage | No Retiree Coverage | No Retiree Coverage |

Changes Since The Last Valuation

The plan is now self-paid and has changed from the BCN HMO to BCBSM PPO. This now includes OON coverage for former BCN HMO members.

Vendors

| | |
|-------------------------------------|----------------|
| General and Claims Administrator: | BCBSM |
| Medical Provider Network: | BCBSM |
| Pharmacy Benefit Manager: | BCBSM |
| Actuary (for Retiree calculations): | Cheiron |
| Auditor: | Rehmann Robson |

APPENDIX C - GLOSSARY OF TERMS

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, and retirement; changes in compensation; rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and, other relevant items.

2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an Actuarial Liability.

3. Actuarial Gain / (Loss)

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. Actuarial Liability

The portion of the actuarial present value of projected benefits which will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe \$100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you won't be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

$$\begin{array}{rclcl}
 \text{Amount} & & \text{Probability} & \frac{1}{(1+\text{Discount Rate})} & \\
 \$100 & \times & \text{of Payment} & & \\
 & & (1 - .01) & 1/(1+.1) & = \$90
 \end{array}$$

6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related actuarial present values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. This way, long-term costs are not distorted by short-term fluctuations in the market.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX C - GLOSSARY OF TERMS

8. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

9. Entry Age Normal Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated as a level percentage of pay from the individual's date of entry into the Plan to the individual's assumed cessation of employment.

10. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

11. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

12. Funded Percentage

The ratio of the Actuarial Value of Assets to the Actuarial Liability.

13. Mortality Table

A set of percentages which estimate the probability of death at a particular point in time, typically the rates are annual and based on age and sex.

14. Discount Rate

The assumed interest rate used for converting projecting dollar related values to a present value as of the valuation date.

15. Medical Trend

The assumed increase in dollar related values in the future due to the increase in the cost of health care.

**PITTSFIELD CHARTER TOWNSHIP OTHER POSTEMPLOYMENT BENEFITS
ACTUARIAL VALUATION AS OF JANUARY 1, 2017**

APPENDIX D - LIST OF ABBREVIATIONS

Actuarial Liability (AL)
Actuarial Valuation Report (AVR)
Annual Required Contribution (ARC)
Blue Cross Blue Shield (BCBS)
Blue Cross Blue Shield of Michigan (BCBSM)
Blue Care Network (BCN)
Coordination of Benefits (COB)
Deductible and Coinsurance (DC)
Deferred Retirement Option Plan (DROP)
Durable Medical Equipment (DME)
Employee Assistance Program (EAP)
Employee Benefits Division (EBD)
Fiscal Year Ending (FYE)
Governmental Accounting Standards Board (GASB)
Hospital Emergency Room (ER)
In-Network (INN)
Inpatient (IP)
Medicare Eligible (ME)
Net Other Postemployment Benefit (NOO)
Non-Medicare Eligible (NME)
Not Applicable (NA)
Office Visit (OV)
Other Postemployment Benefit (OPEB)
Out-of-Network (OON)
Out-of-Pocket (OOP)
Outpatient (OP)
Pay-as-you-go (PAYGo)
Per Person Per Month (PPPM)
Pharmacy (Rx)
Preferred Provider Organization (PPO)
Primary Care Physician (PCP)
Specialist Care Provider (SCP)
Summary Plan Description (SPD)
Unfunded Actuarial Liability (UAL)
Urgent Care (UC)



Classic Values, Innovative Advice